

# ROUX ASSOCIATES INC

Environmental Consulting and Management



COMPLIANCE • REMEDIATION • SUSTAINABILITY



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*“Roux Associates consults for some of the largest and most sophisticated industrial corporations, real estate developers, and law firms in the nation who retain our firm to solve their most difficult and challenging environmental problems. We know that earning and maintaining this level of trust from our clients—who can and do hire the best consultants available—requires providing exceptional service and top notch technical capabilities, project by project, each and every day.”*

*- Paul H. Roux, Chairman*



**ABOUT ROUX ASSOCIATES**

Founded over 30 years ago, *Roux Associates* is recognized for being a highly effective, client-focused, environmental consulting and management firm. From the beginning, our work involved large complex environmental remediation projects, including Superfund sites, chemical and manufacturing plants, and petroleum refineries and distribution terminals. Today, we are an employee-owned company with over 250 environmental professionals in a variety of science and engineering disciplines, providing a mixture of traditional environmental site remediation and compliance services, as well as cutting-edge technical solutions.

Our strong history with major Superfund, RCRA, and other regulatory-driven projects is now being applied to some of the most complex Brownfield redevelopment projects in the United States. Moreover, our innovative Engineered Natural Systems<sup>SM</sup> (ENS) technologies are being employed in remediation, storm-water runoff, and restoration projects in a cost-effective and sustainable fashion.



*“Roux Associates has focused on developing unique, cost-effective options and solutions to our issues, not just studying them. . . .your people . . .make us feel as though we are their number one priority.”*

- *Michael D. Walters, Manager of Occupational Health & Industrial Hygiene, Polaroid Corporation*

**OUR CLIENTS**

*Roux Associates* is privileged to provide consulting services to some of the largest and most successful companies in the country. Our clients have the knowledge and wherewithal to hire the best consultants available—and they do. We are proud that they have chosen us to handle some of their most demanding environmental needs.

A partial list of our clients in the chemical, pharmaceutical, petroleum, technology, paper, transportation, land development, and legal counsel fields includes the following industry-leading firms:

- |                     |                           |                      |
|---------------------|---------------------------|----------------------|
| AIG                 | General Growth Properties | Midwest Generation   |
| Alcoa               | Getty                     | New Jersey Transit   |
| Amtrak              | Glaxo/SmithKline          | Novartis             |
| AstraZeneca         | Goodwin Procter           | Pfizer               |
| BASF                | Gerdau Ameristeel         | Polaroid             |
| Beveridge & Diamond | Johnson Matthey           | Ropes & Gray         |
| BP                  | Jones Day                 | Schweitzer-Mauduit   |
| Cherokee Northeast  | Hercules                  | Shell                |
| Coca-Cola           | Honeywell                 | Skadden, Arps        |
| Elementis           | International Paper       | Solutia              |
| ELF-Atochem         | Kimberly-Clark            | Sunoco               |
| ExxonMobil          | KinderMorgan              | Teva                 |
| FMC                 | Kirkland & Ellis          | Thomson              |
| Federal Express     | Lucent Technologies       | UPS                  |
| Fisher Scientific   | Manko Gold Katcher & Fox  | Verizon              |
| Forest City         | Matheson Tri-Gas          | Vornado Realty Trust |
| GATX                | McCarter & English        | Winston & Strawn     |



We hire, develop, and retain the best technical people in the business.



### THE ROUX TEAM

Consulting is all about people. At *Roux Associates*, our best product is the smart and creative thinking that we provide to our clients every day. This means that we must hire, develop, and retain the best technical people in the business. We begin by aggressively recruiting at some of the best environmental and engineering college programs in the United States. We focus on hiring technical professionals with advanced degrees in key disciplines. Once hired, our staff continues to learn and train through an extensive in-house mentoring and technical development program. Equally important is on-the-job training, where we provide diverse project experience early in the careers of our employees—and we continue with this philosophy throughout their careers. We continually challenge our professionals with new opportunities in a supportive, healthy, and safe environment.

The result is a highly motivated group of advanced-degreeed professionals in the fields of engineering (civil, mechanical, chemical, industrial, and environmental), hydrogeology, geology, geochemistry, chemistry, biology, toxicology, industrial hygiene, architecture, landscape design, economics, and public policy, supported by a dedicated staff of database, graphics design, and CADD professionals.

Our professional staff has completed thousands of site assessments, remediated hundreds of sites nationally and

### FOCUS ON SAFETY

Safety is always of paramount importance at Roux. Our staff is trained to implement and follow safe practices on all projects—a core value that is reinforced in our field activities every day.

*Roux Associates* is honored to have received the **Global Remediation Contractor Safety Performance Award** from ExxonMobil.

internationally, provided global compliance services to many multinational corporations, and provided expert witness services on hundreds of complex environmental litigation cases.

Collectively, our staff's goal is to provide the best quality and service in the environmental consulting industry. This is achieved by the close involvement of senior management on technical projects, during regulatory negotiations, and in strategy sessions with clients. From the proposal stage to project initiation and all the way to project completion, the presence and involvement of our senior management throughout all stages of a project is a hallmark of what clients have come to expect from *Roux Associates*.

# PROFESSIONAL SERVICES

A brief outline of professional services provided by *Roux Associates* is presented in this section. We would be pleased to provide additional information and discuss how we could tailor our services to meet your specific needs.

Please call us at (800) 322-ROUX (7689), or contact any of our offices listed on the back page.

# Expert regulatory services to help guide you through complex environmental regulations

*Roux Associates* provides a wide range of regulatory assistance services for compliance with the Resource Conservation and Recovery Act (RCRA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); Occupational Safety and Health Act (OSHA); Clean Water Act (CWA); Clean Air Act (CAA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Superfund Amendments and Reauthorization Act Title III (SARA); Emergency Planning and Community Right-to-Know Act (EPCRA); Oil Pollution Act (OPA); and the Hazardous Materials Transportation Act (HMTA). The firm also provides regulatory services for state and local compliance programs.

Our audit teams combine expertise in hazardous waste management, industrial hygiene and safety, stormwater management, and groundwater resources. This multi-disciplinary approach enables our firm to recommend solutions for potential or existing deficiencies at various types of facilities.

## ENVIRONMENTAL COMPLIANCE SERVICES

- Integrated Environmental Management
- Facility Compliance Audits
- Air Permits
- Stormwater Permits
- Contingency Planning (Federal and State)
- National and State Pollution Discharge Elimination System (NPDES and SPDES) Permits
- RCRA Part B Permits
- Facility and Process Permits
- Waste Minimization
- Pollution Prevention
- Training Programs
- Community Relations Programs

*“Roux Associates completed environmental compliance and remediation projects for us on time and on budget. The quality of the work was excellent...”*

- A.W., Environment Manager, Federal Express

**Our scientists, engineers, and regulatory experts have conducted thousands of audits to satisfy federal, state, and local regulations.**





*Roux* is recognized as an industry leader in efficient and effective site investigations.

*“Roux Associates continues to provide excellent design, technical support, and guidance on various remediation projects for our company. We are continually impressed with their innovative approach to problem solving and vast knowledge of regulatory issues.”*

- Bryan K. Stolte, Ph.D., C.I.H., Senior Mgr.,  
Env. Systems & Remediation/DueDiligence,  
Lucent Technologies Inc.



Our field staff utilizes a wide range of investigative techniques—depending on the need.

## State of the art site investigations—tailored to individual needs

Since the firm’s founding in 1981, *Roux Associates* has specialized in thorough and accurate site investigations that provide data that are representative of actual environmental conditions. To ensure that only necessary investigative work is conducted, we believe that the objectives of an investigation should be clearly understood before the scope of work is defined. We have always maintained that without a proper investigation, remediation is unlikely to be efficient or effective.

### SITE INVESTIGATION SERVICES

- Geoprobe™ Borings and Sampling
- Soil, Sediment, and Groundwater Sampling
- Air Photo Analyses and Interpretations
- Geological Mapping
- Borehole Logging
- GIS and 3-D Data Visualization
- Wetland Delineations
- Indoor and Outdoor Air Monitoring
- Aquifer Testing and Groundwater Modeling
- Fate and Transport Modeling
- Multi-Phase Modeling
- Indoor Sampling of Mold, Asbestos, Lead, and Radon
- Soil Gas Surveys and Monitoring
- Vapor Intrusion Modeling

# Cost effective solutions at Superfund and RCRA sites

Our innovative approaches have saved our clients millions of dollars in remediation costs.

Over the past 30 years, *Roux Associates* has conducted remedial investigations, feasibility studies, and remedial design and oversight on numerous CERCLA and state-listed Superfund sites. *Roux Associates* is also active in hazardous waste management, initially performing investigations in support of RCRA Part A and Part B applications, and following up, when needed, with hazardous waste treatment and storage facility closures, monitoring, and RCRA Corrective Action Programs.

## CERCLA SERVICES

- Preliminary Assessments
- Hazard Ranking System Score Reviews
- Work Plan Development and Negotiations
- Remedial Investigations
- Feasibility Studies
- Human Health and Ecological Risk Assessments
- Interim Remedial Measures
- Pre-Design Studies
- Remedial Designs
- Remedial Action Implementations
- Cost Recovery Litigation Support

## HAZARDOUS WASTE MANAGEMENT SERVICES

- RCRA Facility Assessments and Investigations
- Risk Assessments
- Corrective Measures Studies
- Interim and Final Corrective Measures Implementations
- Compliance Auditing
- Contingency Planning
- Permitting
- Facility Closures and Post-Closure Monitoring
- Waste Stream Characterization and Delisting Petitions
- Waste Minimization
- Pollution Prevention
- Treatment Technology Feasibility Analyses



*Roux* has worked at many prominent hazardous waste sites, including four of the top ten sites on USEPA's first National Priorities List.

# Expertise in remediating environmental legacies

*Roux Associates* and its affiliated engineering design company, Remedial Engineering, P.C. (New York), provide feasibility studies, conceptual design, final engineering design, and construction management services.

## ENGINEERING DESIGN, CONSTRUCTION MANAGEMENT, AND OM&M

Services provided by *Roux Associates* and its affiliated engineering design company include:

- System Concepts, Analyses, and Design
- Technical and Economic Feasibility Studies
- Process Analyses and Design
- Cost Estimating
- Final Engineering Design
- Permitting
- Technical Specifications and Bidding Documents
- Construction Management and Jobsite Representation
- Value Engineering
- Start-Up Assistance
- Operation, Maintenance, and Monitoring (OM&M)



**We have cleaned up hundreds of sites to reduce risk and increase property values.**

*“Roux Associates’ innovative use of passive treatment technologies at one of our inactive sites has resulted in hundreds of thousands of dollars of savings to BASF Corporation. Their creative knowledge and experience with constructed treatment wetlands and phytotechnologies marks Roux Associates as a leader in the rapidly evolving ‘green’ technology field.”*

*- Charles R. Waltz, Inactive Sites Manager, BASF Corporation*

## REMEDIAL TECHNOLOGY APPLICATIONS

The firm and its affiliate have experience with the design and construction management of in situ and ex situ soil remediation and groundwater containment and treatment applications, including:

- Soil Vapor Extraction (SVE)
- Air Sparging and Biosparging
- Groundwater Pump and Treatment Systems
- Engineered Natural Systems<sup>SM</sup> (e.g., Constructed Wetlands)
- In Situ Biological and Chemical Treatment
- Permeable Reactive Barriers
- Dual-Phase LNAPL Recovery
- Sediment Removal and Stabilization
- Landfill Capping
- Containment Barriers

# Responsive engineering services— from facility design to plant demolition

## PROCESS ENGINEERING AND COMPLIANCE UPGRADES

*Roux Associates* provides facility engineering, detailed design, and construction management services to industrial clients in support of a broad array of process and facility engineering projects. These projects are often driven by needs identified as a result of environmental compliance, pollution prevention, or energy efficiency audits. Process design and facility engineering services include:

- UST and AST Systems
- Conversions from Fuel Oil to Natural Gas
- Tanker Loading and Offloading Systems
- Water and Wastewater Treatment Systems
- Stormwater Collection and Treatment Systems
- Secondary Containment Design
- Emission Control and Recovery Systems

## FACILITY DECONTAMINATION AND DEMOLITION

*Roux Associates* believes that sound and timely management of operational and environmental issues is paramount to the successful completion of any facility decontamination and/or demolition project. *Roux Associates* provides a full range of facility decontamination and demolition services to industrial clients, insurance carriers, and real estate developers, including:

- Facility Closure Plans
- Facility-Wide Decontamination and Demolition
- Process Equipment Decontamination
- Waste Characterization and Management
- Materials Recycling
- Tank Removals

*Roux* engineers help clients to comply with environmental regulations, optimize their operations, and reduce risk.





We help to quickly transform contaminated real estate into profitable development opportunities.

## Converting environmental liabilities into assets

The professional staff at *Roux Associates* has extensive experience providing timely and cost-effective consulting services to the real estate industry, particularly at Brownfield sites. Our use of strategic planning and negotiations during site redevelopment allows the cleanup outcome to be consistent with the intended future use of a property and focuses on completing the redevelopment in minimal time—thereby saving costs and quickly turning the sites into revenue producing developments.

We have provided support on thousands of real estate transactions and completed dozens of site redevelopment projects for the real estate industry and municipalities through these programs.

“As a leading developer of urban and Brownfield sites, we have relied exclusively upon *Roux Associates*’ environmental expertise since 2001. Their work has been a significant factor in the success of our projects with environmental challenges.”

- Robert Sanna, Executive Vice President, Forest City Ratner Companies

### BROWNFIELD AND SITE REDEVELOPMENT SERVICES

- Property Transfer Support and Due Diligence
- Site Investigations and Remedy Selection
- Remedial Design, Construction Oversight, and OM&M
- Facility Decontamination and Demolition
- Asbestos and Lead-Based Paint Assessments and Abatements
- Community and Indoor Air Monitoring Programs
- Stormwater and Wastewater Management
- Risk Assessments
- Wetlands Assessments and Mitigation
- Vapor Intrusion Evaluations
- Vapor Barriers and Sub-Slab Venting
- Engineers’ Certification Reports
- Site Management Plans
- Annual Inspections
- Site Planning and Design

# Leaders in developing money-saving ‘natural’ approaches to environmental problems

## ENGINEERED NATURAL SYSTEMS (ENS)<sup>SM</sup>\*

*Roux Associates* is a nationally recognized leader in the design and implementation of low-cost ENS<sup>SM</sup> technologies. Our award-winning ENS<sup>SM</sup> Group focuses on the application of ENS<sup>SM</sup> technologies to groundwater and surface water contamination, stormwater control, landfill leachate, and industrial/municipal wastewater discharge requirements.

Our work in the Constructed Treatment Wetlands (CTW) arena has resulted in a U.S. Patent award for the design of an innovative CTW system for wastewater treatment.\*\*

The efficient and effective use of ENS<sup>SM</sup> technologies, such as CTW, phytotechnologies, and other passive natural technologies (e.g., natural media filtration) designed by our ENS<sup>SM</sup> Group has resulted in significant cost savings to clients versus conventional remedial alternatives. In fact, two of our recent ENS<sup>SM</sup> designs for a Fortune 100 client received separate Global EHS awards for innovation, cost-effectiveness, excellence in reducing stormwater runoff, and eliminating PCBs in wastewater. Each design is projected to save the firm millions of dollars in long-term OM&M costs.

*Roux Associates* has successfully designed and installed ENS<sup>SM</sup> remedial systems to treat BTEX, PAHs, PCBs, metals, total dissolved solids, total suspended solids, biological oxygen demand, fecal coliform, and other constituents. Our phytotechnology applications have been approved for landfill closure projects and for the capture, containment, and treatment of contaminated groundwater plumes.

*Roux helped Alcoa’s R&D and facility teams win coveted EHS Achievement Awards.*

## WETLANDS SERVICES

*Roux Associates* has successfully designed and implemented wetland remediation, restoration, and monitoring programs at numerous sites throughout the United States. Our staff specializes in the management, design, and implementation of wetland mitigation projects, wetland evaluations, ecological assessments, and hydrologic studies. We have the expertise to provide a wide variety of natural wetland consulting services, including:

- Permitting
- Assessments
- Delineation
- Monitoring
- Mitigation
- Remediation

We design truly innovative constructed wetlands and phyto systems for addressing a wide range of contamination problems.



\* Engineered Natural Systems<sup>SM</sup> and ENS<sup>SM</sup> are Service Marks of Roux Associates Inc.

\*\* Roux Associates Inc. owns a patent for “Enhanced Subsurface Flow Constructed Wetland” (US Patent No. 5893975), issued on April 13, 1999.



*Roux* air quality specialists are experienced in a wide range of industries, contaminants, regulations, and control technologies.

*"Roux Associates provides invaluable assistance in our efforts to maintain air quality compliance. Understanding our need to constantly improve energy and process efficiency, they routinely apply their in-depth regulatory and permitting expertise to help us define and execute our air permitting strategies."*

- Timothy R. Tarantino, Environmental Manager,  
Gerdau Ameristeel Sayreville, Inc.

## Comprehensive air compliance, testing, permitting, and abatement services

The air quality professionals at *Roux Associates* provide a broad range of services to assist clients with their air quality management needs. The evolving Title V Operating Permit Program and new rules for air pollution control require that sources be more diligent in air quality compliance efforts.

*Roux Associates'* experienced air quality specialists include meteorologists, chemical and mechanical engineers, control technology experts, toxicologists, chemists, and computer scientists. The team possesses the entire range of skills necessary to provide complete and effective air quality management services.

### AIR QUALITY SERVICES

- Clean Air Act Compliance Audits
- Air Permitting (Title V, NSR, PSD, etc.)
- Expert Testimony
- Ambient Air Quality and Meteorological Monitoring
- Atmospheric Dispersion Modeling
- Continuous Emissions Monitoring (CEM)
- Emissions Inventories
- Source Testing Management
- Air Quality Control Engineering
- Air Toxics Characterization
- Exposure Assessment and Risk Analyses
- Reasonably Available Control Technologies (RACT)
- Best Available Control Technologies (BACT)
- Maximum Achievable Control Technologies (MACT)
- Accidental Release Modeling
- Applied Meteorology
- Risk Management Programs and Plans
- Offsite Dispersion and Consequence Analyses
- Hazard Assessment and Prevention Programs



We identify and eliminate mold sources before remediating mold growth.

## Ensuring a healthy and safe indoor air environment

Roux Associates provides a full range of Indoor Air Quality (IAQ) and Microbial Services, primarily to industrial and real estate developer clients. Our ongoing, high profile IAQ and mold work across the country gives us real-time perspectives as to the ever changing investigative and remediation techniques that drive these projects.

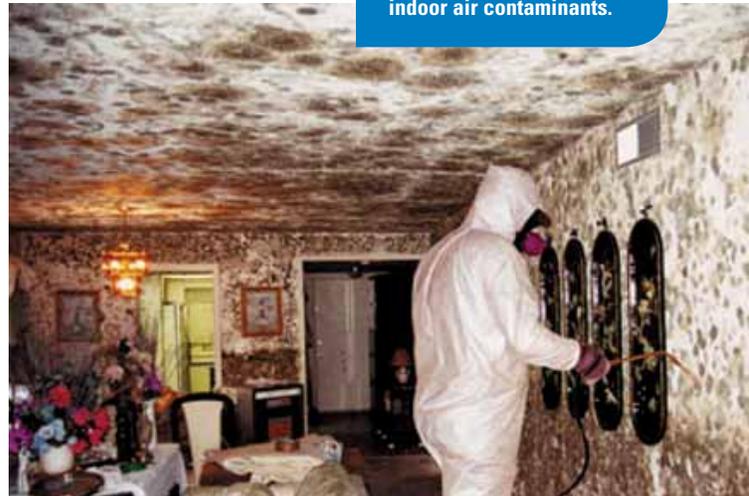
### MOLD-RELATED SERVICES

- Building Investigations and Assessments
- HVAC System Investigations and Assessments
- Mold and Microbial Sampling
- Evaluation of Data and Report Preparation
- Recommendations for Abatement
- Evaluation of Remediation Costs
- Abatement Contractor Evaluations and Bidding Assistance
- Abatement Oversight and Management
- Clearance Sampling
- Expert Testimony and Litigation Support
- Guidance for Future Monitoring and Preventative Maintenance
- IAQ and Mold Training

### IAQ SERVICES

- Vapor Intrusion Modeling
- Measurement of IAQ Factors (e.g., CO, CO<sub>2</sub>, O<sub>2</sub>, VOCs, temperature, humidity, etc.)
- Legionella Evaluations
- HVAC Assessment and Evaluations

Roux experts are thoroughly knowledgeable about mold and other indoor air contaminants.



# Providing expert testimony and in-depth scientific analyses for litigation

*Roux* litigation support experts have extensive deposition and trial experience—and a solid track record of successes. *Roux Associates* provides consulting, expert witness services, and mediation support on technical issues including: hydrogeology, chemical fate and transport, cause and timing of contaminant releases, human health risk, remedial design and implementation, and remedial costs at hazardous waste sites.

Our success in providing litigation support is based on the strong credentials and depth of experience of our experts, coupled with their ability to present accurate and persuasive testimony of complex technical issues using demonstrative and site-specific graphics.

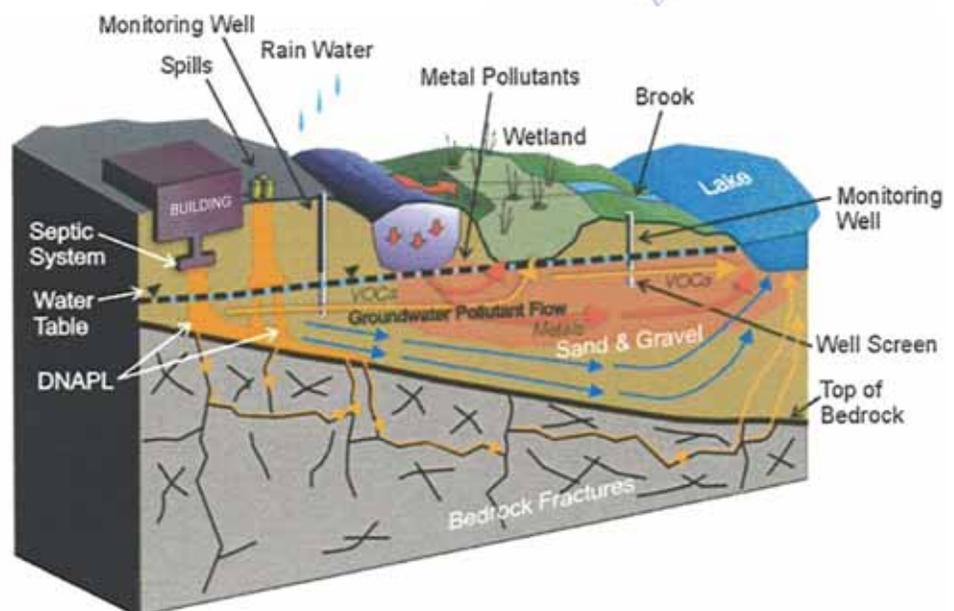
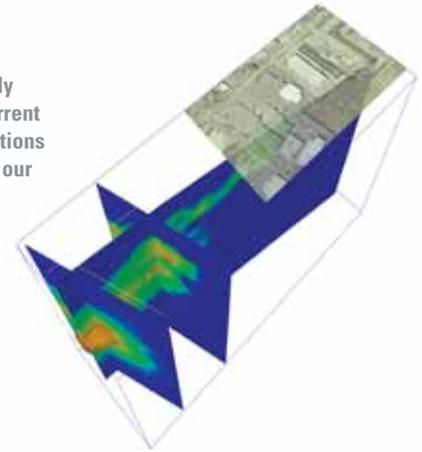
## EXPERT OPINION TOPICS

- Source and Timing of Contaminant Releases (Environmental Forensics)
- Compliance with the National Contingency Plan
- Cost Allocation
- Natural Resource Damages
- Necessity and Appropriateness of Response Actions
- Bankruptcy Evaluations using GAAP and Industry Guidance
- Costs-to-Cure
- Potential Risks Associated with Site Contaminants
- Daubert Witness
- Failure Analyses
- Stormwater Flow Analysis
- Source and Impacts of Air Pollution

“Since the early 1990s I have repeatedly returned to *Roux* in my complex environmental matters for their insightful and thorough analyses. *Roux* is practical, cost-effective, and dependable and it has been my pleasure to stand beside them on major matters for some of my firm’s most important clients.”

- Reed Oslan, Partner, Kirkland & Ellis.

Knowing how to clearly and simply explain current and historic site conditions is an essential skill of our expert witness teams.



## Fair evaluations of insurance liabilities and costs for environmental projects

Over past 15 years we've supported more than 30 national and regional insurance carriers in their efforts to fairly evaluate liabilities and costs for environmental investigations and remediation projects. Our opinions are valued by our carrier clients because we actually perform these investigations and clean-ups for both Fortune 100 clients and "Main Street" clients. Our projects range from cleaning up groundwater at oil refineries and chemical plants, to capping Superfund sites, to remediating soil and groundwater at local dry cleaners and gas stations. We use the experience and knowledge we gain from competitively bidding these projects to fully understand the cost implications associated with an environmental insurance claim.

All our environmental work, whether for a major oil company, a Mom-and-Pop dry cleaner, or an insurance company, is focused on one goal: obtain regulatory closure for the site as quickly and cost-effectively as possible. As a result of this thinking, more than 25 policyholders have hired *Roux Associates* as their own consultant after we reviewed data submitted as part of an insurance claim. These policyholders, as well as their insurance carriers, recognized our service as cutting-edge, fair, and focused on resolving their environmental liabilities.

### OUR AREAS OF SERVICE FOR INSURANCE CARRIERS INCLUDE:

- Expert witness services for both coverage and defense litigation
  - Evaluation of source and timing of releases
  - Analysis of nature and extent of contamination
  - Exposure analysis for toxic torts
  - Estimation of past and future environmental costs
  - Evaluation of reasonableness of costs
  - BNSF-style allocations of costs amongst parties
- Allocation analysis based on policy data
- Environmental Claims Evaluation
- International Claims Evaluation
- Environmental Underwriting Support
- Remediation Oversight
- "Take Over" of Remediation Projects
  - Home Heating Oil Tanks
  - Dry Cleaners
  - Gas Stations
  - Mine Tailing Piles
  - Chemical Plants
  - Manufacturing Facilities
  - Manufacturing Gas Plants



*Roux* has worked with more than 30 insurers on claims from Maine to California. Our insight and expertise have helped insurers save millions of dollars.

# Environmental services for the oil and gas industry

*Roux personnel undergo background checks and meet the stringent work permit requirements of active refinery and terminal facilities.*



Our extensive experience at a wide variety of oil and gas industry sites enable us to focus in on the approaches with the greatest potential for success.



*Roux Associates* has successfully completed 100's of projects in the exploration, production, refining, pipelines/distribution, and marketing segments of the oil and gas industry. With more than 25 years of experience at petroleum sites, we apply a broad array of technical disciplines to meet the environmental challenges facing this industry. The types of services we provide are described throughout this brochure, but the challenges facing the petroleum industry are unique given the scope and scale of the industry, inherent safety hazards at operational petroleum facilities, and the corresponding degree of regulatory and public scrutiny.

*Roux Associates* has practical experience in the evaluation and implementation of various new and/or innovative in situ technologies for remediation of petroleum impacted sites, including: chemical oxidation, enhanced bioremediation, and surfactant flooding, among others. There is no one magic bullet to remediation of petroleum contamination. In most cases, the correct approach is based upon a combination of technical factors, such as the type and amount of petroleum product and subsurface geology, as well as business factors, such as schedules or the need to minimize impacts to site business operations.

**Non-Aqueous Phase Liquid (NAPL) Remediation:** One common challenge at oil and gas industry sites is the presence of NAPL due to historical releases from tanks and pipelines. *Roux Associates* has demonstrated expertise in all facets of NAPL remediation, including characterizing the type, extent, and mobility of the NAPL; assessing whether recovery of the NAPL is feasible and what technologies are most applicable; and, when appropriate, design and implementation of recovery and treatment systems. *Roux Associates* has extensive experience using state of the science modeling approaches to evaluate the potential effectiveness and limitations of various remedial options, and the practical experience gained from implementing the array of NAPL remediation options at numerous sites. Our combination of scientific expertise and practical hands-on experience results in cost-effective NAPL remediation solutions for our clients.

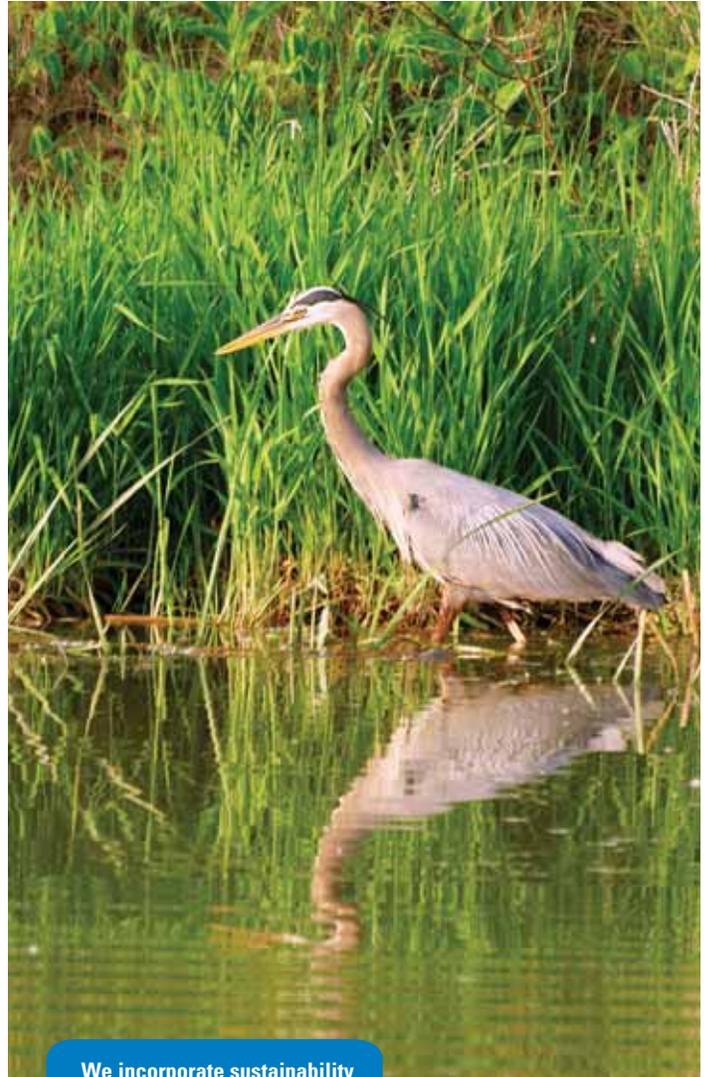
## Sustainable solutions for environmental problems

*Roux Associates* believes that tomorrow's most important environmental issues will focus on the conservation of precious water and energy resources and the reduction of greenhouse gas emissions. Whenever possible, we incorporate these sustainability goals into the solution of environmental problems for our clients.

We recognize that conventional site remediation technologies are not always environmentally sustainable. Our engineers evaluate the net environmental benefit, as well as the economic cost of site remediation projects. We look at energy savings, waste minimization, and protection of natural resources alternatives as part of our site remediation feasibility studies. We also evaluate the water usage (water footprint) and carbon emissions (carbon footprint) of various remedial alternatives as a metric for comparison purposes. Finally, we are experienced at evaluating the overall impact, or the so called "Triple Bottom Line" of economic, environmental, and social impacts of various remedial actions or approaches.

Our Engineered Natural Systems (ENS<sup>®</sup>) Group has developed and employed industry leading "Green" technologies for many of our site remediation projects, including Constructed Treatment Wetlands, phytoremediation plots, and natural media filters for over 20 years. We have also developed Green technologies for the treatment of stormwater and various wastewater streams at active manufacturing facilities, saving our clients money while improving their overall Sustainability record.

Our Compliance and Corporate Services Group typically provides water use, energy use, and carbon footprint as part of our facility audits. *Roux Associates* can also provide greenhouse gas assessment and reporting support, and we can explore the potential value of emission reduction projects in the context of potentially applicable regulatory programs.



**We incorporate sustainability goals into the solution of environmental problems.**



Environmental Consulting & Management  
[www.rouxinc.com](http://www.rouxinc.com)

## **SERVING THE UNITED STATES AND GLOBAL COMMUNITIES**

*Roux Associates* has provided professional services on projects in 44 states and over a dozen countries. Our professional staff can communicate in more than 15 languages.

### **OFFICE LOCATIONS**

#### **NEW YORK (Headquarters Office)**

Islandia, NY  
(631) 232-2600

#### **CALIFORNIA**

Los Angeles, CA  
(310) 879-4900

San Francisco, CA  
(415) 967-6000

#### **ILLINOIS**

Oak Brook, IL  
(630) 572-3300

#### **MASSACHUSETTS**

Woburn, MA  
(781) 569-4000

#### **NEW JERSEY**

Logan Township, NJ  
(856) 423-8800

For all office locations visit [www.rouxinc.com](http://www.rouxinc.com)  
Or call (800) 322-ROUX (7689)