



## TECHNICAL SERVICES



### Project List

- **Groundwater System Design Construction and Operation**  
Fullerton, CA
- **Assessment and Remediation of Multiple Sites**  
Cape Canaveral Air Station, FL
- **Assessment and Remediation of Arsenic from a Railyard**  
Lakeland, FL
- **Remediation of Soil and Groundwater Contamination**  
Escondido, CA
- **Superfund Site Remediation**  
St. David, AZ
- **Closure of Chromium**  
Elizabeth, NJ
- **Chlorinated Solvent Assessment and Remediation**  
Orlando, FL

### Clients

- **Hughes Aircraft Company**
- **United States Air Force**
- **CSX Transportation**
- **Chatham Brothers PRP Group**
- **Apache**

We provide low-cost, risk-based solutions for rehabilitating contaminated properties.

## GEOENVIRONMENTAL SITE ASSESSMENT & REMEDIATION

Engineering Analytics, Inc. (EA) staff has broad-based technical expertise covering all phases of geoenvironmental site assessment and remediation. Our environmental engineers and geologists have over 100 years of collective experience at project sites being regulated under both Federal (RCRA, CERCLA) and State programs. Our senior staff have very diverse backgrounds with expertise in assessment, feasibility analysis, permitting, remedial design and construction, and compliance.

Specialty services offered by EA in the area of Site Assessment and Remediation include:

- site characterization and contamination assessment,
- groundwater and surface water impact modeling,
- geochemical analysis,
- remediation system design, implementation, and operation, and
- brownfields redevelopment.

Engineering Analytics project managers believe in using a streamlined approach focused on determining the “real” risks posed by contaminated media, and negotiating with the regulatory community to prioritize capital expenditures in areas where they will have the biggest environmental benefit.

### Site Characterization and Contamination Assessment

Engineering Analytics takes a “begin with the end in mind” approach to site assessment. From the very beginning, our focus is on obtaining the necessary data to efficiently resolve the contamination issues. This streamlined approach may include one or more of the following:

- soil, water and air sampling at statistically significant locations,
- borehole logging and monitoring well construction,
- focused hydrogeologic and geophysical testing to minimize the number of wells,
- collection of geochemical data for remedy evaluation, and
- use of temporary sampling devices to minimize well construction and sampling costs.

### Groundwater and Surface Water Impact Modeling

Engineering Analytics has extensive experience in modeling contaminant conditions for soil, groundwater and surface water. This experience has taught us that it is important to match model selection and strategy with the goals of the modeling effort up front. Often, simple models can achieve the objectives with substantial cost savings. When more complex models are necessary, EA has practitioners experienced in a number of model types, including:

- analytical solution (spreadsheet) transport models (e.g., Domenico),
- unsaturated zone transport models (e.g., HYDRUS2D, SESOIL),
- coupled groundwater fate and transport models (e.g., MODFLOW/RT3D, MODFLOW-SURFACT)
- geochemical models (e.g., PHREEQC, MINTEQA2), and
- risk-based statistical models (e.g., ProUCL).



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### GEOENVIRONMENTAL SITE ASSESSMENT & REMEDIATION

#### Geochemical Analysis

Engineering Analytics, Inc. (EA) has specialized expertise in the application of geochemical analyses to solving environmental problems. Often, the entire focus is on the contaminant of concern, however, an understanding of the geochemical environment in which the contaminant exists can often result in a cost-effective solution. Some of the techniques that EA staff have used to optimize remediation:

- fixation/stabilization – binds contaminants to other stable materials,
- oxidation/reduction – transforms contaminant to a less harmful or mobile state,
- surfactant addition – makes contaminant easier to remove,
- nutrient addition – stimulates existing or non-native biota to break down contaminant, and
- bacterial augmentation addition of specially engineered bacteria designed to break down contaminants.



#### Remediation System Design and Implementation

Engineering Analytics staff have designed and implemented more than 75 remediation systems ranging in scale from small retail petroleum sites to large multi-plume manufacturing facilities. Unlike many consultants, EA can provide turnkey services in the area of remediation system design and implementation, including operation of the system, if desired. EA's experience includes the following remediation project types:

- excavation, treatment and disposal of contaminated soils,
- in-situ fixation/stabilization of contaminated soils,
- groundwater extraction and treatment,
- in-situ biological and chemical treatment of groundwater,
- capping/risk reduction remediation for Brownfields redevelopment,
- in-situ remediation of NAPL compounds, and
- natural attenuation demonstrations.



Geotechnical &  
Geoenvironmental  
Engineering Consultants

#### Brownfields Redevelopment

Over the last 10 years, redevelopment of older, environmentally-impacted properties (Brownfields) has grown in importance as urban revitalization initiatives have been implemented throughout the country. Remediation of these properties often involve a risk-based approach, with the remedy being integrated with final development plans. EA staff have been involved in a number of Brownfields re-development projects including:

- conversion of an old railyard into a multi-modal transportation hub,
- development of a BMX motocross course over a closed landfill, and
- conversion of a Base firing range into housing for college students.

