



Water & Wastewater Treatment Services

PLANNING STUDIES | WATER & WASTEWATER TREATMENT
PLANT DESIGN | OPERATIONS ASSISTANCE | PUMP STATION DESIGN



Geosyntec 
consultants

engineers | scientists | innovators



Geosyntec Water & Wastewater Treatment experts provide our clients with access to a broad range of technical expertise and services related to water assessments, feasibility studies, engineering design, permitting, construction oversight, and pre- and post-construction monitoring and operations. The sections that follow provide a brief summary of Geosyntec's capabilities to perform these technical services.

OVERVIEW

Geosyntec provides water and wastewater engineering services to public and private sector clients. We provide the following full range of water and wastewater consulting engineering services:

- Planning Studies
- Pilot and Treatability Studies
- Water & Wastewater Treatment Plant Design
- Corrective Action Plan Implementation
- Operations Assistance
- Wastewater Collection System Design
- Pump Station Design
- Water Distribution System Design
- Collection and Distribution System Studies
- Program and Project Management
- Construction Supervision & Inspection
- Permitting

Geosyntec's in-house staff of engineers, scientists and technicians includes all engineering disciplines necessary to provide comprehensive service solutions for water, wastewater, and environmental management. We also provide complete facilities design for wastewater treatment, water treatment, sludge disposal and solid waste handling facilities, general manufacturing facilities, and basic production facilities.

Geosyntec has designed water and wastewater treatment systems that range from the simple to the complex, and include, among others, constructed wetlands, packaged treatment plants (physical, chemical, biological) and site-specific treatment plants with stringent water quality-based discharge requirements.

Our personnel have evaluated and, where appropriate, implemented treatment and management technologies that include:

- air stripping;
- ion exchange;
- ultrafiltration;
- ammonia oxidation;
- suspended solids removal by flocculation;
- dissolved solids removal by acid precipitation and clarification; and
- sludge dewatering and incineration.

We have also designed constructed wetlands for the treatment of wastewater, as well as biological treatment systems such as:

- activated sludge;
- anaerobic digestion;
- fluidized beds;
- slurry reactors;
- biofilm trickling filter;
- membrane bioreactors;
- thin film bioreactor;
- UV ozonation;
- carbon polishing;
- reverse osmosis; and
- breakpoint chlorine.



Geosyntec has the engineering experience and talent to provide complete water and wastewater treatment engineering services from concept design through detailed design, management of construction, and supervision of operation. We provide consulting, design and turnkey engineering services on projects ranging from feasibility studies to the design and operations of multi-million dollar facilities. Our extensive technological capabilities and applications experience provides clients with high quality single- source engineering solutions to their diverse water and wastewater treatment problems.

With increasingly stringent regulations and shrinking budgets, clients are expected to do more with less. This places a premium on our working partnership to carry out efficient and effective solutions. The flexibility of our staff and our organization enables us to tailor our services to the unique needs of each client. We look forward to working with you to provide you with the most cost effective solutions.



ENGINEERING SERVICES

BFI WASTE SYSTEMS | Buford, Georgia

At the BFI Waste Systems Landfill in Buford, Georgia, Geosyntec conducted a thorough review of the landfill's leachate generation and analytical parameters, as well as a process selection study for treating the leachate prior to discharge. Based on our study, we designed a sequencing batch reactor (SBR) system for treatment of the leachate.

During the bid phase for the project, Geosyntec prepared the contract documents, assisted in procuring the necessary equipment, and reviewed the manufacturer's submittals. During the actual construction phase, we provided:

- Construction management services;
- Construction oversight;
- System start-up and commissioning;
- Operation and training; and
- Preparation of record drawings.

Our client had been paying a significant surcharge due to BOD and ammonia concentrations in their discharge. Geosyntec's design of the new SBR reduced the concentrations of these constituents, eliminating this surcharge.

CSX TRANSPORTATION | Erwin, Tennessee

For CSX Transportation in Erwin, Tennessee, Geosyntec conducted a preliminary engineering study to determine what upgrades were required for an existing wastewater treatment system that was about 30 years old. As part of the preliminary engineering, we reviewed the current industrial activities at the facility and determined that the existing treatment process contained units that were no longer required to treat the waste stream. We then developed a conceptual design for the facility and determined a preliminary budgetary cost estimate, incorporating improvements to the system that included:

- An API oil/water separator;
- Equalization system;
- A PC-based human/machine interface controls system; and
- Solids handling improvements

During the project bid phase, we assisted CSX by preparing the contract documents, assisting in procuring the necessary equipment, and reviewed the manufacturer's submittals. During the actual construction phase, we provided:

- Construction management services;
- Construction oversight;
- System start-up and commissioning;
- Operation and training; and
- Preparation of record drawings.

Geosyntec's design included the processes required to treat the current waste stream, thereby reducing capital costs for unnecessary equipment and reducing future chemical, operations and maintenance costs.



Geosyntec Water & Wastewater Treatment experts provide our clients with access to a broad range of technical expertise



We are
engineers, scientists
and innovators.



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