STATEMENT OF QUALIFICATIONS

RISK ASSESSMENT LANDFILL SUPPORT



Geosyntec consultants



GEOSYNTEC OVERVIEW

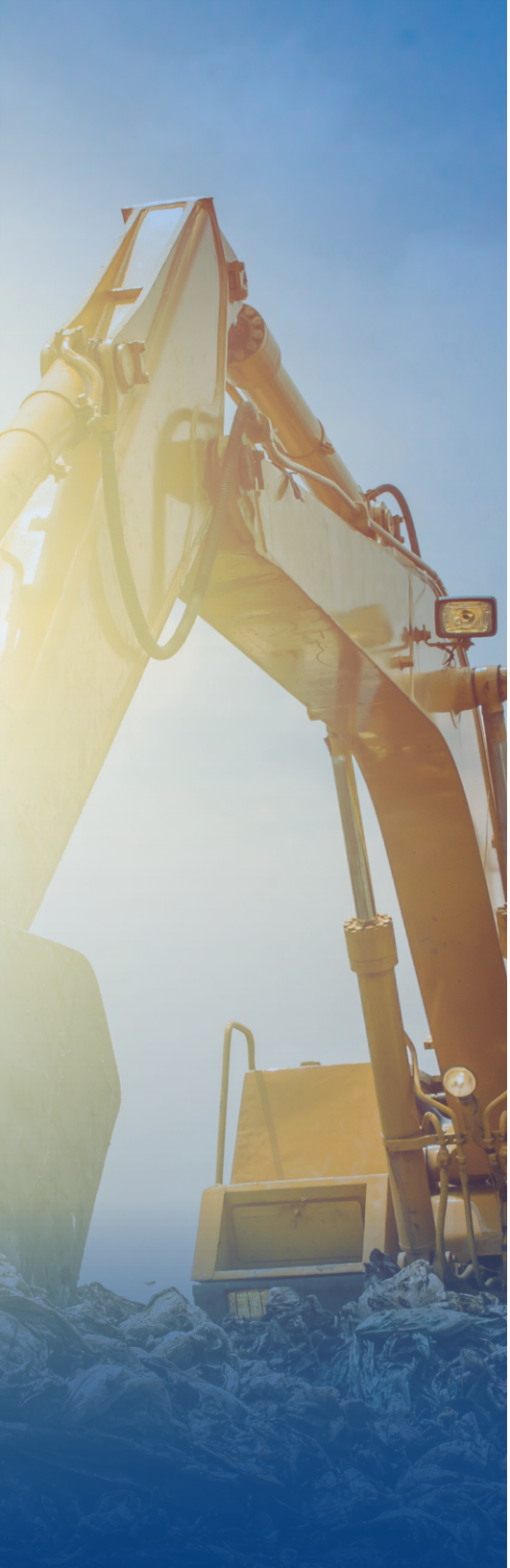
GEOSYNTEC OVERVIEW

Geosyntec is a consulting and engineering firm that works with private- and public-sector clients to address new ventures and complex problems confronting our environment, natural resource, energy, and civil infrastructure. We serve clients from more than 130 offices in the United States, Canada, the United Kingdom, Ireland, Sweden, Spain, Finland, the United Arab Emirates, Saudi Arabia, and Australia. With more than 2,800 scientists, engineers, and other professionals from around the globe, we work each day to forge an inclusive and equitable environment for all our employees, clients, partners, and for the communities we serve.

RELIABLE INNOVATION

Clients turn to us because we deliver reliable, proven solutions. We work with universities, industry, and governmental organizations to develop, test, and commercialize new technologies that save our client money and time and that get them better results. We combine long-tested methods with proven innovative elements to create tailored solutions to their most challenging problems.

Geosyntec's human health and ecological risk assessment services identify best-value approaches to facilitate investigation and prioritize contaminants. Our risk assessment specialists work alongside our remediation practitioners to develop site-specific, pragmatic solutions. Our specialists also provide expert consultation and testimony on environmental exposure issues for legal clients. Our technical specialists in toxicology, risk assessment, biostatistics, epidemiology, information management, contaminant fate and transport modeling, and others characterize risk and hazard and tailor our approach to meet our clients' goals for compliance, financial management, and environmental stewardship. Our practitioners have expertise in addressing complex issues associated with multiparty and high-profile sites and integrating remediation and redevelopment plans with sensitive land use designs, such as residential and environmental justice communities and neighborhoods, schools, recreational facilities, and wildlife habitats.



Geosyntec's risk assessment and toxicology experts have established nationally recognized reputations in applied science consulting and research.

EXPERTISE

Geosyntec's risk assessment and toxicology experts have established nationally recognized reputations in applied science consulting and research. The high quality of our work and contributions as thought leaders in our fields allow us to foster positive working relationships with stakeholders, decision-makers, and the administrative authorities, maximizing the effectiveness of our efforts. Our technical expertise includes, but is not limited to, the following:

EXPOSURE AND RISK ASSESSMENTS

- Human health risk assessments for indoor and outdoor exposures for onsite and offsite receptors
- Exposure point concentration estimation
- Blood-lead-risk assessments
- Third-party risk assessment oversight
- Ecological risk assessments for surface water, sediments, wetlands and uplands
- Odor assessment, modeling, and potential offsite exposures

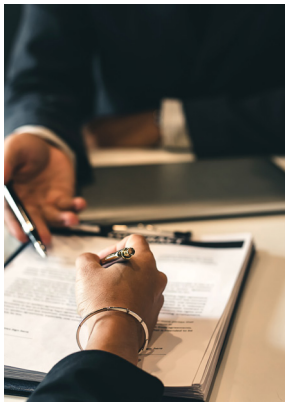
TOXICOLOGY AND DATA EVALUATION

- Landfill gas fugitive emissions, dispersion modeling and community-level exposure assessment
- Lead Integrated Exposure Uptake Biokinetic (IEUBK) modeling (child exposure) for residential settings and USEPA's All Ages Model to assess worker and fetal blood lead contributions
- Metal speciation for risk assessment, including in vitro and in vivo bioavailability studies
- Groundwater geochemistry and fate and transport migration modeling
- Data management and statistical analysis
- Assessment of background based on geology and statistics

LITIGATION SUPPORT

- Forensic studies
- Expert testimony
- Technical and community relations support, including public risk communication, during class action lawsuits









PROJECT HIGHLIGHTS

Geosyntec risk assessment and toxicology practitioners have extensive experience with evaluating toxicity, exposure, and risk at landfill sites under federal-led, state-led, and international programs. Our technical experts help our clients navigate risk communication challenges, advocate for fairly allocated site cleanup costs, and gain acceptance from regulators for novel site remedies. They have provided community outreach and support to state regulatory agencies and are prepared to help address concerns from regulators and the public regarding uncertainties and the implication of perceived data gaps.

LANDFILL AFTER CARE RISK ASSESSMENT

UNITED KINGDOM

Since 2007, Geosyntec has provided detailed risk assessment services for a legacy chemical waste landfill in the north of the United Kingdom. The landfill is on the outskirts of a city with a complicated hydrogeological conceptual site model. Detailed risk assessment modeling along with annual assessment of data have been the key to assessing risks to groundwater and surface-water (river) receptors, considering groundwater migration in infilled former industrial features, and understanding the potential for dissolution of the chemical waste causing small voids which could subsequently cave in. Geosyntec's assessments have informed the design of capping and stabilizing the landfill, which has reduced the impact of landfill leachate on groundwater.

PETROLEUM DISPOSAL SITE

CONFIDENTIAL CLIENT, CALIFORNIA

Geosyntec has provided recent odor assessment services for a petroleum disposal site. The assessment included the following:

- Continuous air monitoring and pilot studies to evaluate soil vapor extraction (SVE) pretreatment and misting
- Odor assessment modeling and monitoring results used to identify locations and volumes of soil to mitigate releases from prioritized material proposed for excavation
- Refinement of chemical and risk parameters to assess potential off-site exposures, demonstrating compliance with air standards (health and aesthetic standard-based) to address various stakeholder concerns

ROLLING KNOLLS LANDFILL SUPERFUND SITE

CONFIDENTIAL POTENTIALLY RESPONSIBLE PARTIES GROUP, CHATHAM, NEW JERSEY

Geosyntec is conducting a remedial investigation/feasibility study, including human health and ecological risk assessments, together with fish and wildlife impact assessments, at a former 179-acre municipal landfill surrounded by wetlands with a nearby residential area in Northern New Jersey. Highlights include the following:

- We developed strong trust and confidence with Region 2 USEPA staff to help resolve strategy and implementation issues, especially where site-specific characterization and risk management strategies could be used to simplify compliance and the need for active response.
- The groundwater constituents of concern are primarily metals and volatile organic compounds (VOCs), including benzene, 1,4-dioxane, and chlorofluorocarbons. Metals concentrations appear to be elevated at least in part due to changes in groundwater geochemistry related to organic matter disposed of in the landfill.
- As part of the remedy evaluation, Geosyntec analyzed the aquifer matrix and groundwater geochemistry to support monitored natural attenuation as the preferred remedy for groundwater rather than a more complex and expensive pump-and-treat system.
- Client support included helping resolve competing interests among potentially responsible parties, regulators, and property owners to develop reasonable remedial approaches that addressed each party's concerns.

RIVER BIRCH LLC, AVONDALE

LOUISIANA CLIMATE-CHANGE RESPONSE

Geosyntec is providing air quality services, including permitting, compliance, greenhouse gas (GHG) quantification and reporting, and regulatory evaluations at this site which is a high British thermal unit (BTU) landfill gas treatment plant that excepts household, commercial, and industrial waste. The assessment included the following:

- Completing ongoing Title V semiannual and annual compliance reports and GHG reporting under USEPA's Mandatory Reporting Rule and conducting annual emissions inventories
- Supporting corporate environmental, health, and safety; interpreting regulatory impact of planned facility changes, resolving compliance issues; and responding to state administrative authorities

GEORGIA POWER

DEKALB COUNTY, GEORGIA

Geosyntec provided services for the landfill-gas-to-energy methane capture for a 3.2-megawatt project, Georgia Power's Green Power Portfolio. The services included the following:

- Increased vacuum throughout gas collection and control system (GCCS) and a gas perimeter collection system (PCS)
- Increased pumping for selected high-liquid-level extraction wells
- Restored horizontal collectors
- Designed new gas extraction programs
- Upgraded condensate sumps
- Supported Georgia Environmental Protection Division Permit resolutions

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Find solutions at geosyntec.com