

Our technical rigour and solution-focused approaches provide clients with high-value remedies at a competitive cost.

Sustainable Solutions. Partner-Level Involvement.

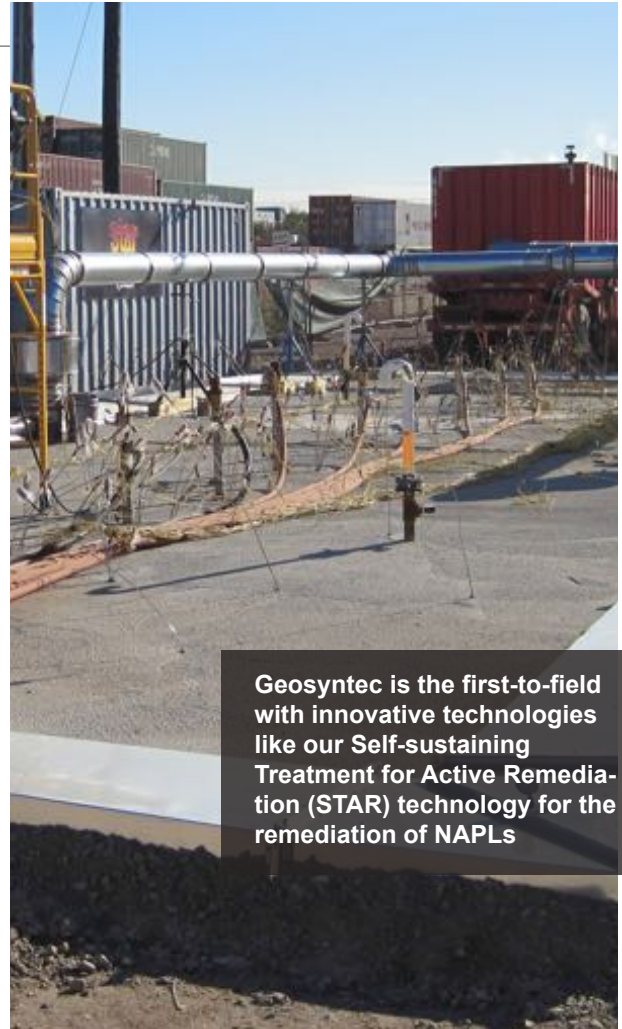
Geosyntec is a preferred partner for creative, cost effective and successful solutions because we approach remediation with technical understanding and creativity. For each client, we develop a clear understanding of how to achieve best-value outcomes using the most appropriate technologies and management strategies for each project.

Innovative Technologies. Practical Applications.

Our professionals set the standard for developing innovative science into novel solutions for environmental remediation. From advanced vapour intrusion evaluation strategies to sophisticated bioaugmentation techniques and beyond. Geosyntec delivers practical environmental management solutions that meet project-specific needs and achieve our clients' objectives.

Research Leaders. First-to-Field.

Geosyntec scientists pioneered the use of bioaugmentation, vapour intrusion assessment and other emerging technologies that have profoundly refashioned the soil and groundwater practice. Our scientists are active in applied research and development with the DOD, ESTCP and SERDP programs, NASA, the University of Western Australia, the University of Toronto, and others institutions on topics such as bioremediation, metals biogeochemistry, reactive metals, chemical oxidation, waste water treatment, vapour intrusion, and the treatment of energetic, recalcitrant compounds and dense nonaqueous phase liquids.



Geosyntec is the first-to-field with innovative technologies like our Self-sustaining Treatment for Active Remediation (STAR) technology for the remediation of NAPLs

Stay Up to Date with Our Services in Australia & New Zealand



<http://practices.geosyntec.com/australia-new-zealand/>

Client Service. Project Solutions.

At Geosyntec, our vision of success builds on a long-held belief that exceptional client service coupled with exceptional project solutions will result in long-term business relationships of mutual reward. We support our client service and project solutions approach through an internal culture of technical excellence and collegial relationships, common commitment to our core values, and the innovation and practical thinking our staff bring to every assignment.

Geosyntec delivers solutions in many areas of environmental studies and cleanup, infrastructure engineering and design, and natural resources assessment and restoration. Since our founding in 1983, Geosyntec has completed thousands of projects worldwide with an outstanding safety record. Our experience delivers on the potential of innovative applications of proven and emerging technologies.

BREADTH OF EXPERIENCE

<http://practices.geosyntec.com/remediation>





Our Experience Benefits Your Project Results

BIOREMEDIATION OF MULTI-CONTAMINANT, CHLORINATED SOLVENT PLUME IN GROUNDWATER, BOTANY, NSW

Geosyntec designed and oversaw four pilot trials for a site in Botany, NSW (operation of the pilot trials was completed by URS Australia Pty Ltd), which demonstrated the robustness of EISB for treatment of high concentrations of mixed chlorinated solvents in a complex and challenging environment (groundwater pH between 4.5 to 5.5, high organic content soil and thus high sorbed mass, high mass flux, heterogeneous soil environment). Engineering controls such as mixing and dilution were used to overcome inhibition issues related to high concentrations of certain VOCs (biodegradation was successfully stimulated at concentrations of 1,000 mg/L 1,2-DCA and up to 5 mg/L chloroform). Biodegradation to innocuous end products was achieved and desorption of mass from the soil was enhanced. Estimated mass degraded is somewhere between 3,800 to 11,000 kg of total VOC mass biodegraded over an 18 month period, at rates of up to 60 kg/day. Concentration reductions of up to 99% of influent concentrations were seen and contaminant degradation half-lives on the order of hours to days were achieved. Also demonstrated was the ability to reverse the inhibitory effect of high DCA concentrations and stimulate growth of natural microbial communities in previously inhibitory environments.

DEVELOPMENT OF A NOVEL REACTOR FOR TREATING WASTE OIL AND CONTAMINATED SOIL/SLUDGE, NORTHWEST AUSTRALIA

Geosyntec has been in the process of designing, fabricating and testing a novel reactor system for treatment of waste oils and contaminated soils and sludge materials generated at a facility located on a remote island off the northwest coast of Australia. The reactor treatment process is based on the principals of smouldering combustion (i.e., Geosyntec's STAR technology), which completely destroys oily materials with little to no residual and minimal energy input. Prototype testing has been completed and full-scale design is ongoing, with fabrication targeted for 2014.

ASSESSMENT OF POTENTIAL SUBSURFACE VAPOUR INTRUSION ADJACENT TO A MANUFACTURING PLANT, UNITED KINGDOM

Since 1997, Geosyntec professionals have provided technical direction for one of the most comprehensive studies of subsurface vapour intrusion in the world to date at a former chemical manufacturing plant in the UK. The study consisted of preliminary mathematical modelling, installation of several phases of vapour monitoring wells, multiple rounds of subsurface vapour sampling and analysis for volatile organic compounds and chlorinated butadienes, and multiple rounds of outdoor and indoor air sampling of 145 properties. Detailed studies were conducted to characterize indoor air ventilation, subsurface gas permeabilities, geologic material properties, the influence of weather conditions on subsurface and indoor air concentrations, and spatial, temporal and laboratory variability. Geosyntec demonstrated that vapour intrusion is limited to a small fraction of the properties, mostly located adjacent to the former waste disposal areas and constructed on highly permeable backfill materials over formerly quarried land. The Triassic sandstone bedrock was shown to impose significant resistance to vertical vapour migration because of the tendency for infiltrating water to be retained in fine-grained layers, which act as vapour barriers.

PCE SOURCE ZONE TREATMENT AT A FORMER INDUSTRIAL FACILITY, DENMARK

Electrokinetically-enhanced bioremediation was demonstrated in a PCE source zone located within a clay till at a former industrial site in Denmark. The pilot test successfully confirmed the positive bench-scale testing results, tested the engineering design of the electrodes and electron donor recirculation and delivery systems, measured site-specific electron donor migration rates, and confirmed that the applied voltage field did not adversely impact microbial growth and activity. Migration of the electron donor from injection points to all monitoring wells was observed within days as a result of application of the electrical field. Rapid increases in daughter product concentrations was observed as a result of the enhanced electron donor distribution. Ethene formation was observed in post application monitoring, indicating microbial activity was not adversely impacted and the distribution of the augmented culture was enhanced by the application of the electrical field.

For More Information

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About Geosyntec

Geosyntec Consultants is a consulting firm with engineers, geologists, environmental scientists, and other technical and project staff based in offices in the United States, Australia, Canada, Ireland, Malaysia, and the United Kingdom. We address new ventures and complex problems involving our environment, natural resources, and civil infrastructure.

For more information visit:
<http://www.geosyntec.com>

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