

**USING GEOGRAPHIC INFORMATION SYSTEMS TO ENHANCE
REMEDICATION AND RESTORATION EFFORTS**

Carla J. Landrum*
Jennifer Busch-Harris
Shoeb Munshi
Eleanor M. Jennings
Kerry Sublette
Bryan Tapp

University of Tulsa
Center for Applied Biogeosciences
600 S. College Avenue
Tulsa, OK 74104
Voice: 918-631-2517
Fax: 918-631-2091
carla-landrum@utulsa.edu

Geographical Information System (GIS) technology can significantly enhance the analysis and approach to remediation and restoration of environments impacted by oil production. GIS is a spatial data engine capable of establishing a relationship between multiple data configurations based on geographically referenced field and laboratory data. The employment of survey grade differential GPS systems, in addition to GIS modeling applications, allows for a comprehensive analysis of contaminant displacement, degradation and residency within a complex impacted environment. The current study focuses on the spatial characterization of contamination gradients in relation to topographic and geographical sequences. Specifically, the ability for GIS technology to aid the analysis and remediation of complex impacted surface and subsurface environments is demonstrated. The purpose of this project is to encourage further investigation and application of GIS technologies to environmental re mediation and restoration studies.