QUARTERLY PROGRESS REPORT

April 1st, 2006 – July 31st, 2006

PROJECT TITLE: The feasibility of removing inorganic arsenic from landfill leachate via sorption to mineral oxide surfaces.

PRINCIPAL INVESTIGATOR(S): Dr. Maya Trotz
AFFILIATION: Department of Civil and Environmental Engineering, University of South Florida

COMPLETION DATE: 9/6/06 PHONE NUMBER: 813-974-3172

Work accomplished during this reporting period:

1. Solids characterization is 100% complete. This includes surface Area (BET Multi point N_2 sorption isotherm with NOVA 2200 Surface Analyzer at 77° Kelvin), Porosity (Mercury Intrusion Porosimetry by Micromeritics), XRD (Philips MRD PW3060/20 X-Ray Diffractometer), SEM with EDS (Hitachi S-800 Scanning electron Microscope) on Kemiron, Lanxess Bayoxide E33 and Adsorbsia GTO.

2. Batch adsorption experiments have continued. Experiments with Kemiron and various loadings of arsenic as a function of pH and ionic strength have been completed. A reverse ionic strength effect has been observed with increased sorption of arsenic as a function of ionic strength. Further studies on removal of arsenic in leachate using Kemiron have been done and continue to date. Batch adsorption experiments using Bayoxide and GTO just started.

3. Historical leachate concentration records were obtained from the solid waste directors for landfills identified in Task 1 as potential users of this treatment process.

Information Dissemination Activities: Project information has been updated on landfillinfo.net. An oral presentation was given by Dr. Trotz at the American chemical society, Florida Section (FAME) 2006 Environmental Chemistry symposium in Orlando. Title of Talk: Arsenic Removal from Drinking Water and Landfill Leachate via Sorption to Commercially Available Activated Alumina. Web address: http://membership.acs.org/F/Florida

TAG meetings: There were no TAG meetings during this time period.