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# Lithological Influences on the Synthetic Leaching Procedure Test and Implications to Remediation and Assessment at the Southwest Foods Site in Lafayette, Louisiana

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## ABSTRACT

Southwest Foods in Lafayette, Louisiana, has multiple underground storage tanks that leaked petroleum products, releasing numerous toxic constituents of concern (COC) into the surrounding soil and groundwater. The Synthetic Precipitation Leaching Procedure (SPLP) test was used to measure the leaching potential of possibly contaminated soils and lithologies when exposed to acidic rainfall. However, SPLP data produced erratic results that apparently are related to the type of geologic material (“soil”) involved. These erratic results could have major implications for assessment, remediation, and the establishment of Risk Evaluation/Corrective Action Program (RECAP) standards. Incorrectly applied RECAP standards could ultimately mean COC’s could reach points of exposure (POEs), and potentially harm nearby residents and the environment. Previously, lithological composition had not been considered when evaluating the environmental impact of the test.

At the site, numerous geotechnical soil boring logs were completed, and soil samples were sent to laboratories for analysis of contamination. Analytical data from the laboratories along with samples from multiple groundwater monitoring wells provided an in-depth view into the degree of contamination at Southwest Foods and produced the first signs of erratic SPLP test results. The SPLP data were categorized into lithological subgroups for further examination. The lithologies, or soil types (with USCS symbols), that produced erratic results (i.e., some ‘passed’ and some ‘failed’) for the SPLP analyses included ‘clay, high plasticity’ (CH) and ‘clayey silt/sandy silt/silt’ (ML). The results for ‘silty clay/sandy clay’ (CL) were more consistent. The inconsistent SPLP data could result in incorrect application of site-specific RECAP standards and the subsequent cleanup at Southwest Foods and conceivably at other contaminated sites as well.

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## NOTES

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