

Impact of Landfill Leachate on Iron Release from Northwest Florida Iron Rich Soils

(2007 Second Update)

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Summary:

For this part of our research, we surveyed and sampled soil and leachate samples from landfill sites in 12 counties of Northwest Florida. We conducted laboratory batch experiments to simulate iron transformation processes. Specifically, we reacted soil samples collected from landfill sites with corresponding leachate in the presence of cultured iron reducing bacteria. We monitored iron transformation in these reactors on a daily basis.

We found that iron release was most pronounced for soil samples collected from Walton County Central landfill reacting with the corresponding landfill leachate. The iron release for this site can be as high as 275 mg/L within 5 days. Following Walton County are soil samples collected from Spring Hill South Landfill, Jackson County, Santa Rosa Holley Landfill, and Lower Ridge Landfill, Wakulla County, which produced iron release at concentrations around 240 mg/L, 150 mg/L, and 120 mg/L, respectively within 5 days of reaction. All the other samples produced less than 100 mg/L of iron release. Since these results were from batch experiments, iron release decreased to lower than 50 mg/L after 50 days (except for Walton County Central Landfill, which was around 100 mg/L).

Soil and Leachate Sampling

Soil and leachate sampled from following landfills:



Santa Rosa Central Landfill



Holmes County Landfill

Soil and Leachate Sampling

Soil and leachate sampled from following landfills:



Franklin County Central



Steelfield Landfill, Bay County

Soil and Leachate Sampling

Soil and leachate sampled from following landfills:

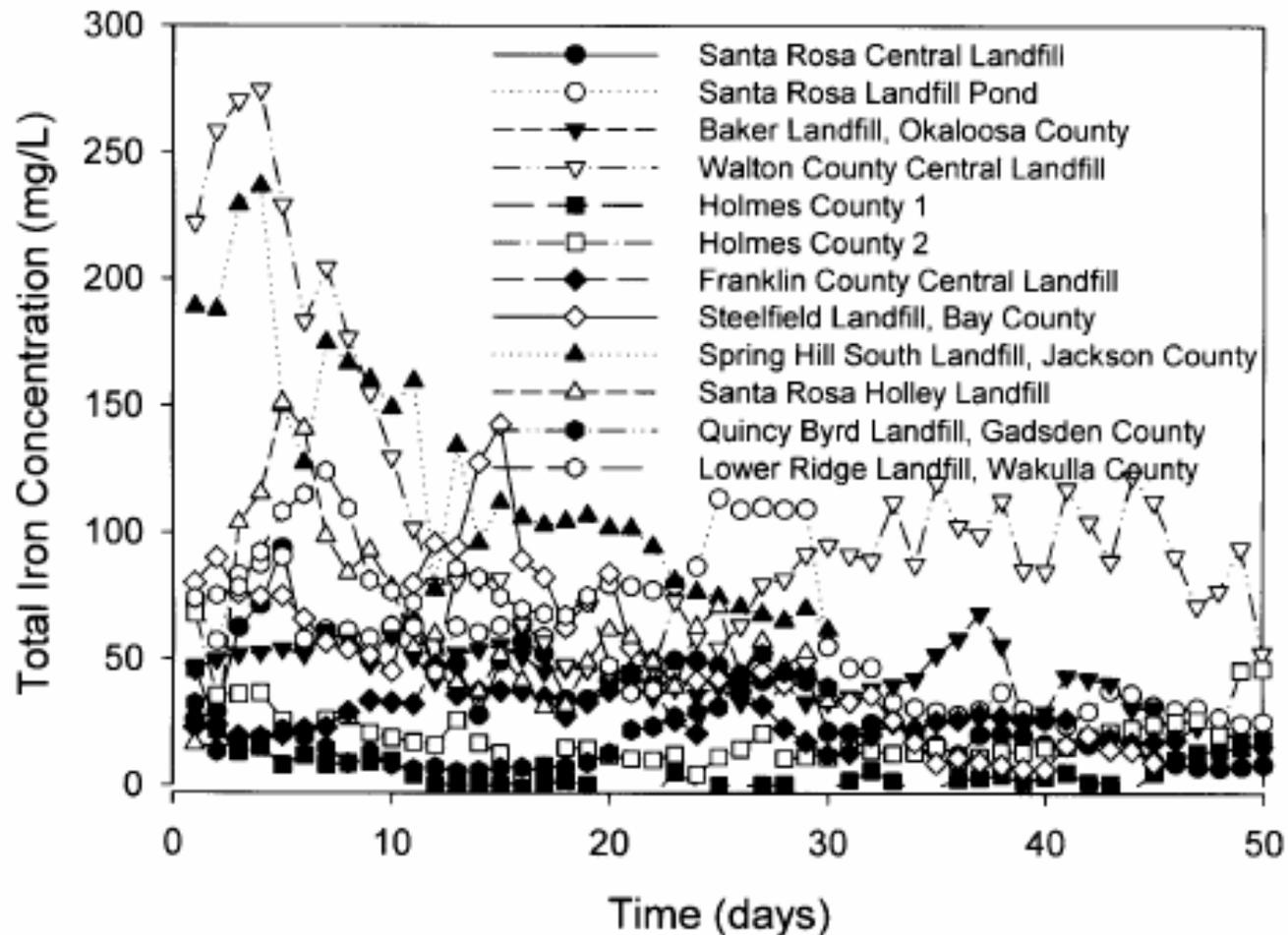


**Spring Hill South landfill
Jackson County**



Leon County Landfill

Laboratory Experiment Results



Laboratory Experiment Results

