

## Resistivity monitoring for leachate detection in a livestock disposal site

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Generally, livestock carcass disposal sites can become a significant environmental threat as there is a risk of the leachate leakage if the high density polyethylene film is damaged when livestock carcass is buried. It is very important to monitor soil and groundwater in order prevent possible contamination by leachate after disposal. This paper presents a resistivity monitoring technique for detecting leachate from a livestock carcass burial site. To detect possible leachate flow we have conducted a repeated geoelectrical field survey three times. As a result of the resistivity monitoring, we can interpret the range of soil contamination and leachate leakage points of the field site due to drainage of the leachate during the rainy season. To further support the field findings, we conducted laboratory scale experiments to measure resistivity by injecting artificial leachate into soil samples. Through the experimental results, an improved soil contamination evaluation can be achieved by using the obtaining empirical relations between the volume of the injected leachate and the measured resistivity of the soil sample. The resistivity measurement could be useful to select observation points for groundwater contamination assessment and is an effective method for detecting leachate in livestock carcass burial sites.

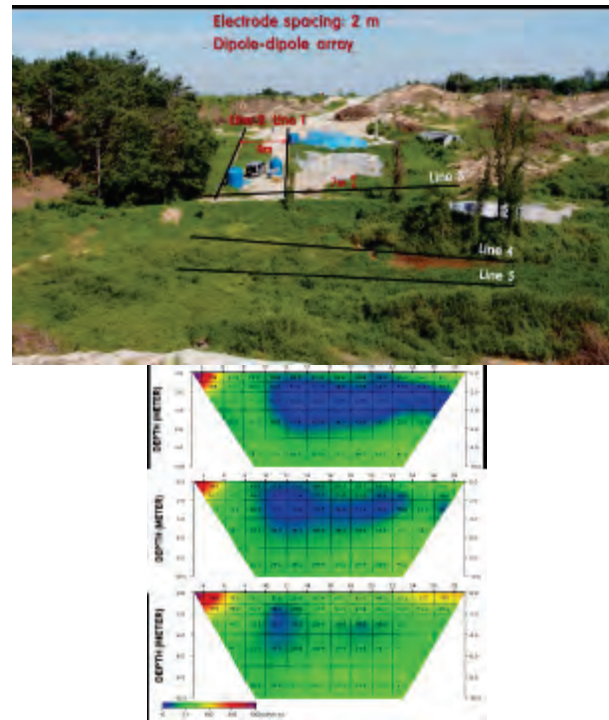


Figure: Field site view and arrangement of survey lines for resistivity monitoring (left). Time lapse resistivity sections of the survey line 3 (right).