

# Geomembrane Electrical Leak Location Testing

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# Introduction

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- ❖ Background
- ❖ Current Methods/Technology
- ❖ Why Use Electrical Leak Location Testing
- ❖ Conclusions

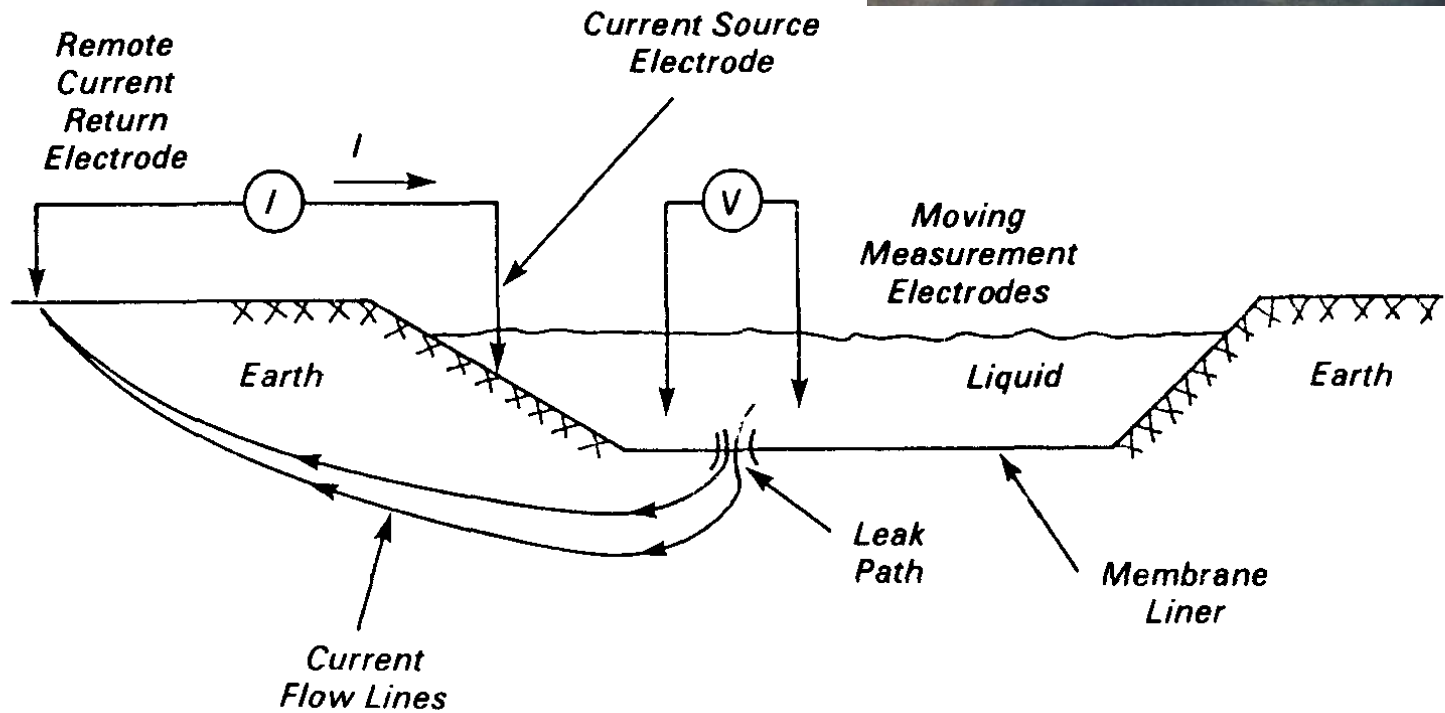


# Background

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- ❖ Electrical Leak Location Testing is 30!
- ❖ Started in early 1980's as a better way to minimize leaks in geomembranes
- ❖ Geomembranes can have from 2 to 22 leaks per acre even with good CQA
- ❖ Most leaks result from cover over the geomembrane
- ❖ System developed based on current flow

# Background



# Current Methods/Technologies

## ❖ Bare liner surveys

- ▶ Use a squeegee or spray device for conductive media
- ▶ Water transmits current
- ▶ Effective at finding holes
- ▶ Time consuming test to conduct





# Bare Liner Survey



# Landfill Liner Surveys

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- ❖ Can be conducted with cover in place
- ❖ Use a high voltage (+1000v) and current regulated power supply to find leaks
- ❖ Is effective at finding even small leaks
- ❖ Sensitivity is calibrated on site



# Landfill Leak Detection





# Landfill Liner Leak Test



# Why?



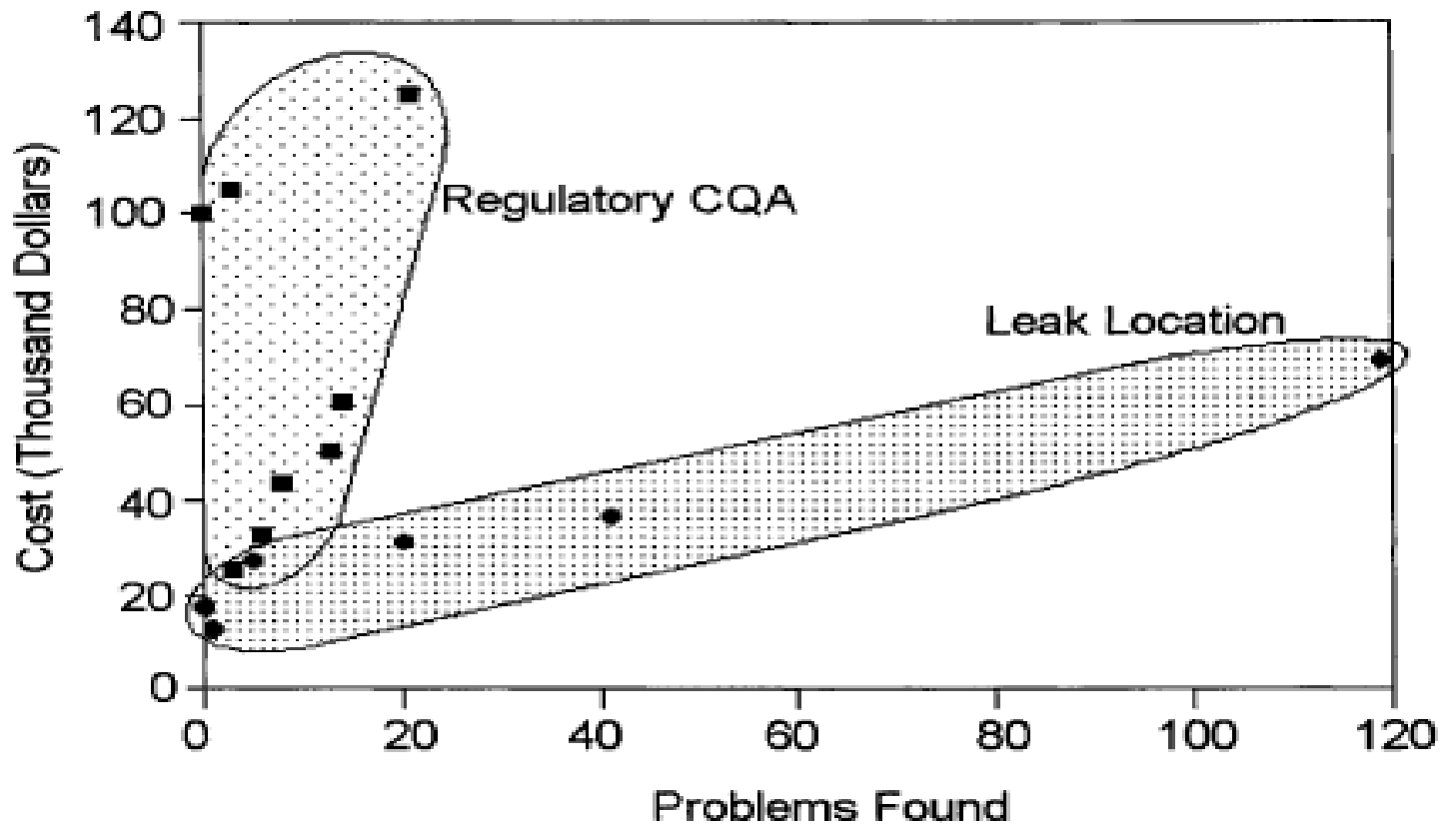
- ❖ Leaks versus groundwater impacts
- ❖ Minimize leak pathways from geomembranes
- ❖ Increased environmental protection
- ❖ Peace of mind
- ❖ Minimal cost/maximum savings
- ❖ Does not eliminate standard QA/QC

# Why?

- ❖ Several states considering leak location testing as standard requirement for MSW landfills
- ❖ Will become more important in leachate recirculation and bioreactor landfills
- ❖ Public perception



# Leak Detection Costs



# Conclusion

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- ❖ Leak location testing technology is proven to detect leaks in geomembranes
- ❖ ASTM standardized practice
- ❖ Recommended for Subtitle D landfills
- ❖ Addition to CQA services
- ❖ Experience in leak testing is important

# Leak Location Testing

❖ Questions?

