

TR-335

Thermal Imaging of Canals for Remote Detection of Leaks: Evaluation in the United Irrigation District

Y. Huang, G. Fipps

- [Full Text](#)

This report summarizes our initial analysis of the potential of thermal imaging for detecting leaking canals and pipelines. Thermal imagery (video format) was obtained during a fly over of a portion of the main canal of United Irrigation District. The video was processed to produce individual images, and 45 potential sites were identified as having possible canal leakage problems (see Appendix I for all 45 thermal images).

District Management System Team personnel traveled to 11 of the 45 sites to determine if canal leakage was actually occurring. Of the 11 sites, 10 had leakage problems. Thus, thermal image analysis had a success rate of 91% for leak detection. Two sites had leaks classified as “severe” by the DMS Team.

This report also provides a detailed analysis of 4 sites, 3 with leaks and 1 without. For each site, photographs are included showing the source of the leak and/or condition of the canal segment. A literature review of thermal imagery for leak detection is included in Appendix II. Our findings and recommendations are as following:

1. thermal imaging is a promising technique for evaluation of canal conditions and leak detection;
2. the district provide should provide personnel to help the DMS Team verify the remaining 34 sites; and
3. the district should consider correcting the problems identified at sites 7 and 8.

Email:

twri@tamu.edu



[Compact with Texans](#) | [Privacy and Security](#) | [Accessibility Policy](#) | [State Link Policy](#) | [Statewide Search](#) | [Plug-ins](#) | [Veterans Benefits](#)

[Military Families](#) | [Texas Homeland Security](#) | [Open Records/Public Information](#) | [Equal Opportunity Statement](#) | [Risk, Fraud & Misconduct Hotline](#)

© 2013 All rights reserved. Problem with this page? Contact: twri-webmaster@tamu.edu



[SSO](#) |

[CANOPY](#)