

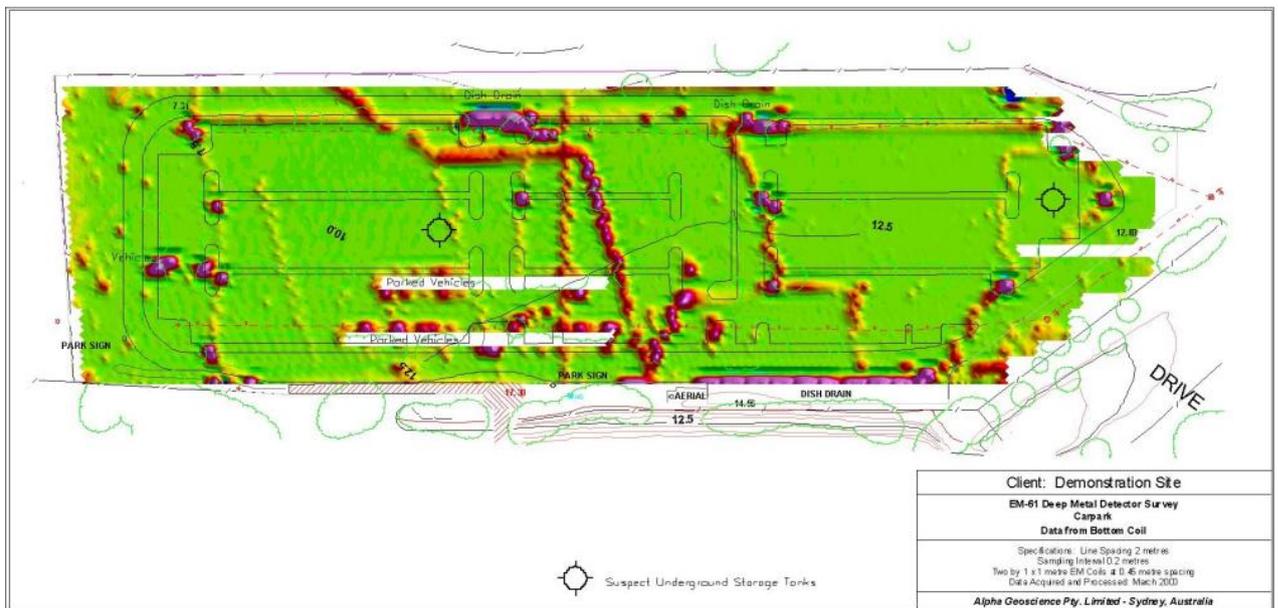
EM61 for the Location of Underground Storage Tanks

Introduction

Due to the difficulties in locating Underground Storage Tanks (UST) without undertaking a major excavation, geophysics is a non-intrusive approach to locating these tanks. The image above shows a car park where there were two suspected UST's buried in the positions indicated on the image. As it can be seen, this was an active car park with the survey being undertaken on a Sunday to reduce the number of cars present.

Survey Specifications

This survey used an EM61 Deep Metal Detector from Geonics in Canada; this unit is a time domain EM system. It has a digital recording system for downloading and processing in the office. The data was collected in distance based sampling mode with a sample interval along line of 0.2 metres. The line spacing on this survey was 2.0 metres. The photograph on the next pages shows the system being operated on a survey.



Data Acquisition

The data was acquired using a wheel odometer to measure distance down the line and control lines were established every 100 metres taken off a surveyed grid. The line spacing was two metres and road markers were used to indicate the position on the control line of the line to be walked.

Data Processing

The data was processed using the Geosoft Montaj Mapping Software Package from Geosoft in Canada, which is particularly well suited to the data processing and imaging of the EM61 data. No filtering was applied to the data. The client for this project supplied an AutoCad drawing of the site and this was added to the colour image of the EM data.



Summary

The EM61 is very well suited to cover a large amount of ground in a short period of time to determine the presence or otherwise of UST's. In this particular example, the two UST's must have been removed before the installation of the car park. It should be noted that the data indicated a number of buried services including stormwater drains, water mains and reinforcing in the spoon drains. The EM61 data is not affected by geology to any extent and thus can be used to investigate areas of high geological noise on the magnetics data, for small discrete objects such as UXO's.

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