

Client: Launceston City Council
Project: Heritage Forest Landfill Gas Hazard Assessment

CLIENT

Launceston City Council is located on the Tamar River in north eastern Tasmania. Launceston is Tasmania's second largest city.

PROJECT OBJECTIVES

- ❑ To monitor landfill gas emissions from land on Heritage Forest where food stalls were to be located during a proposed international kite festival.
- ❑ To assess the likelihood of an explosion occurring during the cooking of food at the festival due to fugitive landfill gas emissions.
- ❑ To recommend mitigation measures to minimise the risk of an explosion occurring.

BACKGROUND

Heritage Forest is the site of a former domestic and industrial waste landfill in the northern suburbs of Launceston. Much of the park has now been developed as sports fields and grassed informal recreation areas.

Landfill gas is produced during the decomposition of biodegradable organic waste deposited at landfills. The major constituents of landfill gas generated under anaerobic (oxygen deficient) conditions are methane and carbon dioxide. Methane is flammable when mixed with air in certain concentrations. Landfill gas is an asphyxiant if allowed to accumulate in confined spaces in or near landfills.

The production of significant quantities of methane can typically continue for periods in excess of fifteen years after waste deposition.

All landfill gas produced at Heritage Forest is passively vented to the atmosphere through the ground surface.

KEY ACTIVITIES

- ❑ Detailed site inspection to:
 - identify cracks and fissures in the ground surface where landfill gas may be freely vented; and
 - examine the condition of vegetation and determine whether it may have been affected by gaseous emissions.
- ❑ Installation of 21 shallow gas monitoring probes across the site.
- ❑ Placement of plastic sheeting on the ground surface at various locations across the site.
- ❑ Periodic monitoring of ambient air and landfill gas accumulating within the probes and beneath the plastic sheeting using a landfill gas analyser (methane, carbon dioxide and oxygen) and a Photo-Ionisation Detector (organic and inorganic gases).
- ❑ Detailed analysis and interpretation of monitoring results.

OUTCOMES

The field investigations revealed that landfill gas continues to be generated at the site in appreciable quantities and is being vented through the ground surface. Despite this, it was concluded that the risk of an explosion occurring during the kite festival due to the presence of naked flames from barbeques and other cooking equipment was low.

Several recommendations were provided to Launceston City Council, the festival organisers and the food vendors to reduce the likelihood of an explosion occurring.