

# How long-range, wireless technology helps monitor groundwater for a landfill project in LA

**Country**

United States

**Project type:**

Landfill monitoring

**Sector:**

Construction

**Main product:**

Monitoring Solution

## Challenge

Without proper engineering controls and containment infrastructure, municipal solid waste landfills have the potential to introduce contaminants to soil and groundwater surrounding the site. If not contained, these contaminants could potentially affect groundwater quality and its use for domestic water supplies.

Worldsensing partner Sixsense USA was tasked with monitoring excavation deformation during construction of the project at a landfill in Los Angeles. The landfill is committed to operating with environmental practices and policies that are good for their customers, local businesses and residents. Their local team of environmental managers, engineers and scientists ensure that the long-term management of the landfill materials are protective of the environment.



Worldsensing's wireless data logger

## Solution

Sixsense deployed a wireless, real-time excavation deformation monitoring solution during the project to monitor for potential deformation of the stability buttress subgrade excavation. The solution features Worldsensing wireless data loggers connected to existing piezometers to monitor groundwater pressure, inclinometers to monitor subsurface deflections, and tiltmeter deformation to monitor foundation movement at discrete locations across the construction area.

The purpose of the project was to construct a stabilization buttress in an area of the site that is prone to landslides and related geologic instability before site development as a landfill. The buttress construction involved excavation into the geologically sensitive terrain composed of interbedded siltstone, sandstone, and claystone that had been fractured by now-inactive faults.



Worldsensing wireless data loggers connected to existing piezometers to monitor groundwater pressure

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“The Worldsensing solution is robust and reliable in a challenging construction environment. Thanks to its simple installation and low maintenance, it reduces the time and cost necessary to obtain key data for environmental risk control.”

**Zhangwei Ning, PhD**

Technical Manager  
Sixense Inc.

## Benefits

The remote solution was deployed in a difficult-to-access, changing construction site enabling the team to obtain real-time data wirelessly without having to frequently send a technician to the site.

The use of wireless monitoring generates a real-time view and time series of pore water pressure, horizontal displacement at depth, and angular distortion of foundations during the construction.

### About Sixense Inc.

Sixense is an international company offering services in the field of soil, environment and assets. The company offers a unique and complete range of consulting, technologies, services and data management for construction and infrastructure. With 25 years of experience and 450 specialized engineers, Sixsense is a guarantee of credibility and trust for their clients.

Founded in 2016, Sixense group was built around 9 companies. Since then, two more companies have joined. These 11 companies have come together and combined their activities around specialized engineering, instrumentation and monitoring, digitization of existing structures and software and process digitisation solutions.

## Advantages

- Enhanced environmental risk control through real-time, long-range wireless monitoring.
- Low installation and maintenance costs for most parts of the landfill structure.
- Reduced failure risk from not having cabling that's prone to damage.



Worldsensing's wireless data logger at a landfill in Los Angeles