



### About Tellus

Tellus is a ground and airborne geoscience mapping programme, collecting chemical and geophysical data that will inform the management of Ireland's environment and natural resources. Tellus is undertaken by the Geological Survey of Ireland and is funded by the Department of Communications, Energy and Natural Resources.

Tellus surveying has been carried out in Northern Ireland (2004–2008), the border region of Ireland (2011–2013) and in the north midlands and east of Ireland (2014–2015). Surveying of the west of Ireland is scheduled for completion in 2017. Tellus aims to complete surveying the entire island of Ireland on a phased basis, completing 50% by the end of 2017.

Download data and interactive maps at [www.tellus.ie](http://www.tellus.ie)



### Geochemical data fact file

Tellus Border geochemical surveys were conducted between August 2011 and June 2012.

Samples of soil, stream sediment and stream water were collected from a region spanning 12,339 km<sup>2</sup> at a typical density of one sample per 4 km<sup>2</sup>.

Two soil samples were taken at each location. Topsoil samples (c.5–20 cm depth) were analysed for 52 elements, pH and loss-on-ignition. Subsoil (c.35–50 cm) samples have been archived.

Stream water and sediment samples were typically collected from first and second order streams. The sieved <150 µm sediment fraction was analysed for 56 elements. Water samples were analysed for a range of physical parameters and 65 chemical elements and ion species.

### Lead (Pb) in topsoil

The map displays the range of lead (Pb) concentrations in 10,335 topsoil samples (c.5–20 cm) determined by the Tellus Border survey in the Republic of Ireland, and the Tellus survey in Northern Ireland.

Lead concentrations were determined by ICP-MS analyses following *aqua regia* digestion. The lower limit of detection is 0.2 mg kg<sup>-1</sup>. Data have been QA/QC'd with respect to a range of certified and secondary reference materials.

The highest Pb concentrations were recorded in topsoil overlying the Ordovician and Silurian metasediments of the Longford-Down inlier, where numerous small lead-zinc occurrences are known. The lowest recorded Pb concentrations are in the *machair* soils along the northwestern coast. The distribution of Pb in topsoil in the region is irregular, characterized by sharp fluctuations in Pb concentration over short distances. Most towns in the region have an associated positive Pb topsoil anomaly that is likely to reflect an anthropogenic source of Pb.