Electricity Transmission

Intrusive Surveys Factsheet

Version 1

This factsheet provides details of the most common intrusive surveys undertaken by National Grid Electricity Transmission (NGET) when constructing new electricity assets.

Advance compensation payments for these surveys are outlined in the *Land Rights Strategy and Payment Schedule for Assets.*

Boreholes

Boreholes are typically carried out to undertake in-situ testing and obtain earth (soil and rock) samples for laboratory testing.

Work typically takes **2 - 4 days** and each borehole is anticipated to be to a depth of **10m to 50m** with a diameter of approximately **150 - 300mm**. A hand dug trial pit (typically using post hole diggers) may be dug to approximately **1.2m** to check for utilities, before equipment, usually a cable percussion or rotary drilling rig which is transported to site on a flatbed truck or towed behind a 4x4 vehicle digs the main borehole. Support vans transporting rods, additional equipment (including a towable water bowser) may also be required.

Groundwater and gas monitoring wells

Following the completion of boreholes, groundwater monitor equipment may be installed in/above the borehole and left in situ. The purpose is to take measurements of the type and quantity of water, gas and vapour over a period of time. The equipment normally constitutes a pipe inserted into the borehole and wooden formwork to protect the equipment, approximately **400mm wide and 1.5 high**. These boreholes will require return visits to record the measurements.

Upon completion of the monitoring program the formwork and any above ground equipment will be removed to a depth of **1.2m** below ground level and filled with bentonite grout (or similar) and made good.

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Trial pits / infiltration pit

Trial pits are required to gain a better understanding of shallow ground conditions and typically consist of a trench approximately **1.2m wide, 1 - 3m long and 1 - 3m deep** dug with an excavator. In very specific circumstances such as access difficulties or safety concerns the pits may be hand dug. The pits are often backfilled the same day, although some need to be left open for a period of time to allow detailed assessment.

Window sampling boreholes

These boreholes are used for detailed soil and sand analysis. A hand dug trial pit (typically using post hole diggers) is often dug to approximately **1.2m** to check for utilities, before work is undertaken with a tracker terrier drilling rig (or similar apparatus).

The activity involves driving a steel tube with an approximate diameter of **35 - 80mm** (typically through soft deposits) to an estimated depth of **6m** or until competent ground is encountered. The rig is transported with a 4x4 van, then tracks itself into position with minimal disturbance. A borehole typically takes **half a day**, and upon completion the borehole is backfilled with a bentonite grout (or similar).

Cone penetration tests (CPT's)

Similar to window sample boreholes, but predominantly to test soil properties such as load bearing capacity. Commonly carried out using a tracked CPT rig.

The test involves an instrumented cone with a diameter of **30 - 40mm,** attached to a string of rods, being pushed into the ground at a controlled rate, to a depth of 5-50m, then removed. The activity can be expected to complete within 1 day.

Other information

Other methodologies or surveys may be undertaken, and timescales and methods may be influenced by specific weather, ground conditions or other factors. However, this factsheet provides the typical surveys and methodologies applied.

To ensure safety and effective planning, we kindly request all known held available records and/or plans relating to any buried utilities, land drainage or irrigations systems in affected areas be shared by landowners/occupiers.

Any damages or losses will be considered in line with the *Land Rights Strategy and Payment Schedule for Assets.*