



Rampion 2

W I N D F A R M

**Onshore Site Investigation Campaign 2a –
Background information on methods to be
used as part of the SI Campaign 2a**

Document Details

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1 SI CAMPAIGN 2A METHODS

This document is provided by way of background to enable the Discharging Authority to understand the activities involved in SI Campaign 2a. No approval or review of this document is sought – it is offered as background information only.

Boreholes, test pits, trial trenches, soil stripping, cone penetration testing and geophysical techniques are proposed across the target area presented in Plan 1 to determine and monitor ground conditions in preparation of the construction of the Rampion 2 Substation.

These site investigations are planned to be conducted between July – October 2026. The duration of onsite presence at the location will be a maximum of 12 weeks - with a standpipe piezometer left in-situ to facilitate on-going groundwater monitoring surveys over a 24 month period. Rampion 2 has committed to measuring soil water levels for a minimum of 12 months at select locations, however the decision has been made to leave the piezometer in situ for 24 months to allow for additional data gathering at discretion of the project.

Land will be restored to its prior condition once works have ceased. Specifically, within the SI Campaign 2a duration for test pits, trial trenches, boreholes, cone penetration tests and soil stripping with no groundwater monitoring; and within the 24 months (and as soon as practicable) at the sites with ground water monitoring equipment.

Electrical Resistivity Testing (ERT) Survey:

The non-intrusive electrical resistivity testing may be undertaken at select locations. The ERT survey will measure the electrical resistance of the soil. This is achieved by placing a number of electrodes in the ground and running a current through them. The data is then processed to determine the resistivity of the soil. The ERT survey is non-intrusive and no reinstatement will be required.



Figure 1 – ERT surveyor

Boreholes for the purpose of ground investigation

Boreholes will be drilled with a dual purpose dynamic sampling and rotary coring rig to a depth of ~25m. Starter pits will be dug to the depth of approximately 1.2m at the site of each borehole. Cores and samples will be retrieved from each borehole, logged and sent to a laboratory for analysis. The cores and samples from the borehole will provide a greater understanding of the composition, structure and properties of the subsurface. A series of tests will also be undertaken to determine soil density, permeability and thermal resistivity.



Figure 2 - Example Drill Rig for geotechnical rotary coring.

Monitoring standpipes

Once the required samples have been retrieved from the borehole and the on-site testing undertaken, select boreholes will be cased and a standpipe piezometer left in-situ to facilitate on-going groundwater, gas and porewater pressure = monitoring surveys. The standpipe casing shall have a raised metal top-hat cover between 450mm and 600mm high and will be protected by 1.2m high post and rail fence in a 1m x 1m square.



Figure 3 - Example Standpipe of GW survey borehole.



Figure 3b – Example of post and rail fence

The duration of the groundwater monitoring is specified to cover a 12 month period (all four seasons). In person groundwater and gas readings will be undertaken monthly for a period 12 month period. Monitoring – is using a Sond, a pump and a power pack. Water gets pumped out until the water stabilises – this would be typically 25-30L per borehole so the proposal would be to discharge this on site (further to checks on contamination risk). The standpipe will remain in place for a further 12 months to facilitate any additional monitoring which may be required. The Contactor will ensure that arrangements for post-fieldwork monitoring visits and borehole decommissioning are in line with Environment Agency guidelines. Upon completion of the groundwater monitoring survey, the standpipe will be removed, the borehole backfilled and the ground reinstated. The protective fencing will also be removed and the ground reinstated.

Trial pits / trial trenches

Trial pits are required to assess shallow ground conditions, which is achieved by undertaking a series of sampling and testing as the trial pit is excavated. An excavator will be used to excavate trial pits to a depth of 4.5m below ground level. Overall the trial pit will typically be approximately 0.5m wide x 4m length x 4.5m depth; and there are two trial trenches proposed of approximately 2m wide x 10m length x 3m depth. Overburden soil from the excavation will be stored carefully to the side. Trial pits and trenches will be re-instated immediately after completion of the trial pit and surveys. Excavated soil will be returned in the original sequence and will be compacted to limit future settlement. Typically, a trial pit will be completed within a couple of hours; however, trial trenches are expected to take longer. All trial pits shall be backfilled on the same day of excavation and no open excavations shall be left unattended unless fully, securely and safely fenced with adequate signage installed to notify of an open excavation.

Cone Penetration Testing (CPT)

Cone Penetration Testing (CPT) involves pushing a narrow, instrumented rod vertically into the ground at a constant rate to obtain continuous measurements of tip resistance, sleeve friction, and pore pressure, allowing detailed interpretation of soil layering and geotechnical properties. When carried out to a depth of 25m, CPT provides a high resolution profile of subsurface conditions that can be used to assess soil behaviour, estimate strength and density, and support foundation and ground engineering design.



Figure 4 - Example Test Pitting

2 OUTLINE SCOPE OF THE SI CAMPAIGN 2A:

As part of SI Campaign 2a the project will undertake the following SI surveys using the methods that have been described above:

- **Circa 10x Geotechnical Survey Borehole** to target depth ~25m
- **Circa 20x Trial Pit** (0.5m wide x 4m length x 4.5m depth) ~8m³ of soil to be removed and reinstated
- **Circa 2 x Trial Trenches** (2m wide x 10m length x 3m depth)
- **Circa 10x CPTs to target depth ~25m**
- **Non-intrusive geophysical surveys** Electrical Resistivity Testing (ERT) Survey. These are undertaken to measure the electrical resistance of the soil.
- **Access** – A mixed fleet of Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) will be involved in these site preparation works. An existing means of access to a highway will be used with no modifications required to the junction. This access to the Onshore SI Campaign 2a site is proposed via the A272 trunk road using the junction referred to as Access 62 (A-62) in the DCO. Once on site, access to the SI target locations has been secured by the DCO and with the consent of the relevant land owner.
- **Temporary Welfare**
Some temporary – mobile welfare facilities: a container unit towed by a vehicle or a welfare van will be required to be located on site while site investigation activities are ongoing. This will be located with input from and Ecological Clerk of Works and with the agreement of the land owner in a suitable location taking into consideration local environmental receptors. Existing or temporary hardstanding will be set up for the welfare facility for the short onsite duration of activities. There is scope for using matting to protect the ground based on site specific conditions.



Figure 5: Typical mobile welfare unit examples

Required Hardstanding in vicinity

For broader awareness, a temporary hardstanding area to facilitate the SI Campaign Phase 2a activities will be sought after in the area. The location and size of this is to be confirmed by the appointed Principal Contractor and any associated permits and consents are to be secured by the Principal Contractor if necessary.

