



CASE STUDY: Ground Investigation: Wind Farm

The Project

An eight turbine wind farm with associated infrastructure required a pre-construction ground investigation, including:

- 15 drilled boreholes to depths of up to 25 metres
- 76 trial pits to depths of up to 4.5 metres
- 40 DCPs to depths of up to 3.0 metres
- Installation of monitoring wells

The Challenge

Location: A remote location, situated at the top of the Rhondda Valley made access to the site difficult. Traversing mountainous terrain, with overlying soft peat would have been both time-consuming and expensive using conventional access techniques, such as bog matting or roadway construction.

Timescale: Construction of the wind farm was due to start within months so vital ground information had to be obtained as quickly as possible.

Weather Conditions: Horizontal, driving rain and snow, with wind speeds of up to 85mph.

Project Overview

Project Name:

Maerdy Wind Farm, South Wales

Project Type:

Ground Investigation

Client :

Velocita Energy Developments via
Grontmij

Date:

November 2011



Trial Pit Excavation

For further details please contact: Robert Ewens robert.ewens@geoeng.co.uk
Or visit our website www.geoeng.co.uk

The Solution

The project was supervised on site by Geotechnical Engineering Ltd's engineers, with samples being tested in our purpose built, UKAS accredited laboratory.

We used our P60 wide track rig, designed to drill vertical boreholes on slopes and to travel safely and quickly over soft, wet and boggy terrain. Its wider, "soft" tracks spread the weight of the load, creating lower ground bearing pressures.

The Result

A series of trial pits were excavated, using a tracked excavator to determine the thickness of the peat deposits on the site and consequently, the optimum drilling methods to be used.

Our wide track P60 rig travelled more than a mile over soft, undulating terrain to reach the drilling site, without the need for the construction of costly, time – consuming, temporary access roadways. This enabled significant cost savings to be made.

Core samples were transported directly to our in-house soil testing laboratory. Lab technicians were able to liaise directly with our on-site engineers, thereby saving time, cutting out the need for any re-sampling and speeding up the preparation of factual reports.

The contract was completed well within budget and ahead of time. The wind farm is now under construction and is due to be completed by March 2013.



Trial Pit – Detail



Core Sample – logging detail



Footprint left by the P60 rig

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