National Apprenticeship - Occupational Profile

Apprenticeship Title	Geo-Driller Apprenticeship
NFQ Level	6
Duration	Two Years (20% Desk Based, 80% 'on-the-job')
Typical tasks/ responsibilities	A Geo-Driller is a skilled worker who uses heavy mechanical plant called drill rigs to advance holes in the ground that are used to investigate subsurface strata (soil and bedrock) to provide detailed information in the evaluation of economic potential for industries such as aggregates, minerals, water supplies and to assist in planning, design and construction of infrastructure development. The work of a Geo-Driller also involves extracting samples, installing monitoring equipment, undertaking in-situ testing, assessing and developing water supplies and allowing the passage of services under sensitive structures such as roads, railways and canals, and facilitating the installation of ground support and preparing holes to be charged with explosives for blasting. Soil and rock are extremely variable and competent drilling requires care, attention to detail and the ability to record accurately the variations encountered below ground either by sampling, written documentation or a combination of both.

On successful completion, the Geo Driller will have:

Knowledge

- Computer Aided Design
- Surveying – EDM, GPS
- Soil and rock sampling
- Soil and rock description
- Monitoring equipment installation
- In-situ testing
- Pump and permeability testing
- Laboratory testing
- Site monitoring

Skills

- Site practice including - safe use/maintenance of tools and equipment, setting out, drilling, testing and sampling, installing and logging
- Understanding engineering drawings including plans and sections
- Safety: Hazard avoidance and risk assessment, good workshop practices, basic first aid, fire extinguishers, pattern development, materials, manual and mechanical handling, light fabrication, environmental protection of sub-surface and groundwater resources

Reading and applying technical documentation

- Choosing the appropriate equipment to bring to site for the anticipated ground conditions and project requirements
- Determining work and methods
- Accurately setting out drilling locations and recording same

Skills (cont'd.)

- Making and repairing drilling equipment, water pumps, drill rigs etc.
- Fitting and assembling the necessary parts
- Using appropriate hand tools and machine tools
- Accurately documenting and communicating sub-surface variations to designers
- Servicing and maintaining relevant equipment
- Understanding pricing and use of Bills of Quantities and accurately recording quantities

Competencies

Transport of heavy equipment

- Moving drill rig to site – competent in transportation of heavy equipment
- Assessing ground conditions for set up of a rig
- Setting up a drill rig at predetermined locations – uneven ground, sloping ground, soft ground, under ground
- Safe and productive drilling in varied ground conditions – competent in the areas of health and safety and manual handling
- Sampling and recording (logging) the investigation/drilling findings accurately for use by designers – engineers, geologists, hydrogeologists
- Communicating drilling findings

Industry/industries served by the apprenticeship

- Mining
- Mineral Exploration
- Quarrying
- Groundwater
- Geothermal Energy
- Site Investigation (Infrastructure)
- Directional Drilling

Proposed minimum entry requirements for apprentices on the programme

Applicants under the age of 23 must meet the following entry criteria:

- A pass in the Leaving Certificate; 5 grade O6/H7 including English or Irish and Mathematics.

Applicants over the age of 23 years are classed as mature students and can apply on a case by case basis. Such applicants will be assessed with reference to the Recognition of Prior