

MINERAL EXPLORATION – METHODS AND REGULATIONS EXPLAINED



A drill rig set up on a bog mat



Restored Drill Site

There are a range of ways of exploring a landscape to look for natural resources. These exploration methods, most of which have been used for decades, are rigorously regulated and clearly outlined by government. Any company looking for natural resources is expected to adhere to these regulations, and Dalradian is deeply committed to ensuring that our methods of exploration conform to the highest standards. In every case, when we are exploring a landscape for its mineral capacity, we ensure that we do so with the full permission and knowledge of the land owner and within the regulations.

Dalradian currently holds prospecting licenses for a number of areas. The licences are issued by the Department for Economy (DFE) and run for a period of 6 years. Under the terms of these licences, our company can search for a range of different minerals using a variety of exploration methods. Each year, we must submit a plan to the government outlining work to be done in the coming year and then at the end of the year, we report back on the actual work done and results. All of this reporting and oversight is required to keep the licences in good standing. Many of the current licence holdings are a result of promotion by the Northern Ireland government of a geographical survey called the Tellus Project. The project was run from 2004-2007 across NI to promote investment in mineral development and exploration.

Below are a range of common prospecting methods, which are and have been utilised by Dalradian and at the end of this article is a link to the relevant government guidance. In all cases, the prospecting is carried out under DfE licence and with the consent of the landowner. Landowners are invited to be present when drilling is taking place.

Stream sediment sampling – Samples of fine sediment are collected from streams, and placed into a sieve over a bucket, the fine sediment is then sent to the laboratory to be analysed for a range of separate elements including precious and base metals. Nitrates, phosphates, etc. are not tested for.

Soil Sampling – this is carried out under a DfE prospecting licence and with the permission of landowners. The soil is collected using a handheld auger, a corkscrew like device that reaches down around 1.5 – 2 metres into the earth. A very small sample of the soil is then sent away for analysis. An auger is a simple device, gardeners use a version to plant out seedlings.

Deep over burden sampling – this is very similar to soil sampling, the main difference being that a hand-held petrol-driven auger is used to drill down deeper into the subsoil and gravel that lies just above bedrock. Small samples are collected and analysed. Petrol augers are sometimes used by ice fishermen

or climatologists to drill small holes into permanent ice.

Drilling – This method allows DGL to collect the deepest samples of rock, typically creating boreholes around 400 metres deep. The diameter of the holes are around 5cm to 10cm. The material produced from drilling, rock core, is logged and sent for analysis of the elements that are present in the rock. The rigs used by our contractors are very similar to those used by farmers drilling borehole water wells. The drilling compound has a footprint of about 10 metres by 10 metres. Water used to help lubricate the drill is contained within a closed-loop system, capturing all fluids and requiring no discharge into the local waterways. Water is either recycled within the closed-loop or sent to a treatment plant by tanker.

Prior to drilling, an environmental review is undertaken, by competent persons, to ensure that all relevant environmental matters are considered. This is documented and submitted to the local council as part of the Permitted Development Regulations. The council will typically share this documentation with the Northern Ireland Environment Agency to ensure that all appropriate environmental regulations and designations are respected. The company also notify both the DfE and Health and Safety Executive of the drill hole locations, direction and depth.

The drill sites and access tracks are constructed from large wooden planks or alternatively stone is laid

down upon a non-permeable liner. All of these materials are removed and the land restored once drilling has been completed. The drill holes are also closed or “plugged” after the core has been removed.

Most exploration has a tiny environmental footprint. Drilling is the only method commonly used by Dalradian that uses equipment that is not hand-held. We are proud of our drilling record, having drilled over 500 holes, removing some 150 kilometres of rock core. This work has allowed us to determine the amount of gold and silver in the Curraghinalt deposit and to grow the resource to over 6,000,000 ounces of gold. Last week we celebrated a milestone in the company’s history, when we reached three years Lost Time Incidents (LTI) free.

Dalradian, as we have made clear throughout all of our presentations, publications and advertorials is deeply committed to ensuring that we can deliver and develop our mining project with the absolute minimum disruption to the local and regional population, to the highest environmental and regulatory standards. If you want to see for yourself, come and visit us, like more than 1,200 people have so far. You can also read a summary of the regulations and exploration methods for yourself by using the links below from DfE publications.

www.economy-ni.gov.uk/sites/default/files/publications/economy/Common-Exploration-Methods-2017-Update.pdf

www.economy-ni.gov.uk/sites/default/files/publications/economy/minerals-prospecting-licence-faqs.pdf

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