Document B

Department of the Environment for Northern Ireland

ENVIRONMENT AND HERITAGE SERVICE

DEPARTMENT OF THE ENVIRONMENT FOR NORTHERN IRELAND

DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT WHITESPOTS, COUNTY DOWN. ARTICLE 24 OF THE NATURE CONSERVATION AND AMENITY LANDS (NORTHERN IRELAND) ORDER 1985

The Department of the Environment for Northern Ireland (the Department), having consulted the Council for Nature Conservation and the Countryside and being satisfied that the area described and delineated on the attached map (the area) is of special scientific interest by reason of the geological and other features and accordingly needs to be specially protected, hereby declares the area to be an area of special scientific interest to be known as the 'Whitespots Area of Special Scientific Interest'.

Whitespots is of geological interest on account of its mineralogy, including a range of commercially worked metallic ores. The mine spoil contains a suite of minerals including galena, sphalerite, chalcopyrite, baryte, dolomite, calcite and chalcedony. This site is the only occurrence in Northern Ireland of the unusual barium zeolite, harmotone.

Whitespots is the site of the former Whitespots and Conlig Lead Mines. Production of lead ore began in 1780, while more extensive working took place in the early and mid - nineteenth century. A total of 23,000 tons of ore were produced during the main period of mining, which ended in 1865. Although the mines are now flooded, the course of the mineral-bearing vein is clearly marked by surface features including shafts, topographical hollows and spoil heaps. A number of the old mine buildings are still present, although now derelict.

The mineralised vein deposit occurs along a northerly fault as a breccia zone comprising fragmented country rocks of Silurian age, some 430 million years old. Minerals were deposited within the fault by hot, mineral rich fluids and studies indicate that at least four of these hydrothermal events occurred here.

The earliest phase produced milky quartz veins. During the next phase, earth movements fragmented or brecciated the host rocks and silica-rich fluids in the fault deposited chalcedony, a form of silica. The main phase of mineralisation occurred during the Carboniferous period, some 330 million years ago, when moderate salinity fluids deposited sulphides of lead, zinc and copper along with baryte and dolomite into cavities within the breccia. This was followed by another minor period of brecciation. The final stage of mineral deposition, which was associated with Tertiary dyke intrusion some 60 million years ago, filled cavities with a pyrite-calcite-zeolite assemblage.

The most abundant hydrothermal mineral is dolomite (calcium - magnesium carbonate) which forms sugary to coarsely crystalline aggregates incorporating angular fragments of country rock. Baryte (barium sulphate), another abundant mineral, forms white, platy aggregates and occasionally well-developed colourless crystals on dolomite. Galena (lead sulphide) and chalcopyrite (copper - iron sulphide) are the principal metallic minerals, with some sphalerite (zinc sulphide) and minor pyrite (iron sulphide). Galena occurs as crystalline masses within the dolomite-matrix breccia and occasionally as well-formed cubic crystals in cavities. Chalcopyrite occurs as well-formed crystals on dolomite, while calcite fills cavities and veins. Sphalerite forms dark-brown crystals enclosed within baryte or perched on dolomite. The barium zeolite harmotone is a rare component of the mineralisation.

The mine spoil heaps and adjoining ground also support a notable range of plant species. Soil conditions here vary from those that are well drained and generally base-rich on the spoil heaps to more wet types on lower lying ground. Areas of stable spoil support a rich flora dominated by Common Bird's-foot-trefoil *Lotus corniculatus*, Mouse-ear-hawkweed *Pilosella officinarum*, Common Knapweed *Centaurea nigra*, Glaucous Sedge *Carex flacca* and Red Fescue *Festuca rubra*. More notable species include high densities of Fragrant Orchid *Gymnadenia conopsea*. Damper ground adjoining the spoil heap supports Devil's-bit Scabious *Succisa pratensis* and frequent Northern Marsh-orchid *Dactylorhiza purpurella* and Common Twayblade *Listera ovata*.

A number of small, permanently wet areas typically have Sharp-flowered Rush *Juncus acutiflorus* and Water Horsetail *Equisetum fluviatile* and, again, frequent Northern Marsh-orchid *Dactylorhiza purpurella*.

SCHEDULE

The following operations and activities appear to the Department to be likely to damage the geological and other features of the area:

1. Any activity or operation which involves the damage or disturbance by any means of the surface and subsurface of the land, including reclamation and extraction of minerals, including rock, sand and gravel.

2. The storage or dumping, spreading or discharge of any material.

3. Changes in woodland management, including afforestation, planting, clearing and selective felling.

4. Construction, removal or disturbance of any permanent or temporary structure including building, engineering or other operations.

5. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.

6. The following activities undertaken in a manner likely to damage the interest of the area:

   i. educational activities;

   ii. research activities;

   iii. recreational activities.

7. Sampling of rocks, minerals, fossils or any other material forming a part of the site, undertaken in a manner likely to damage the scientific interest.

8. Use of vehicles or craft likely to damage the geological features of the area.

Sealed with the Official Seal of the
Department of the Environment for
Northern Ireland on 25 AUGUST 1998

Robert C Martin

ROBERT C MARTIN
Chief Executive

FOOTNOTES

(a) Please note that consent by the Department to any of the operations or activities listed in the Schedule does not constitute planning permission. Where required, planning permission must be applied for in the usual manner to the Department under Part IV of the Planning (Northern Ireland) Order 1991. Operations or activities covered by planning permission are not normally covered in the list of Notifiable Operations.

(b) Also note that many of the operations and activities listed in the Schedule are capable of being carried out either on a large scale or in a very small way. While it is impossible to define exactly what is "large" and what is "small", the Department would intend to approach each case in a common sense and practical way. It is very unlikely that small scale operations would give rise for concern and if this was the case the Department would normally give consent, particularly if there is a long history of the operation being undertaken in that precise location.