

Rigg OCCS

Non Technical Summary

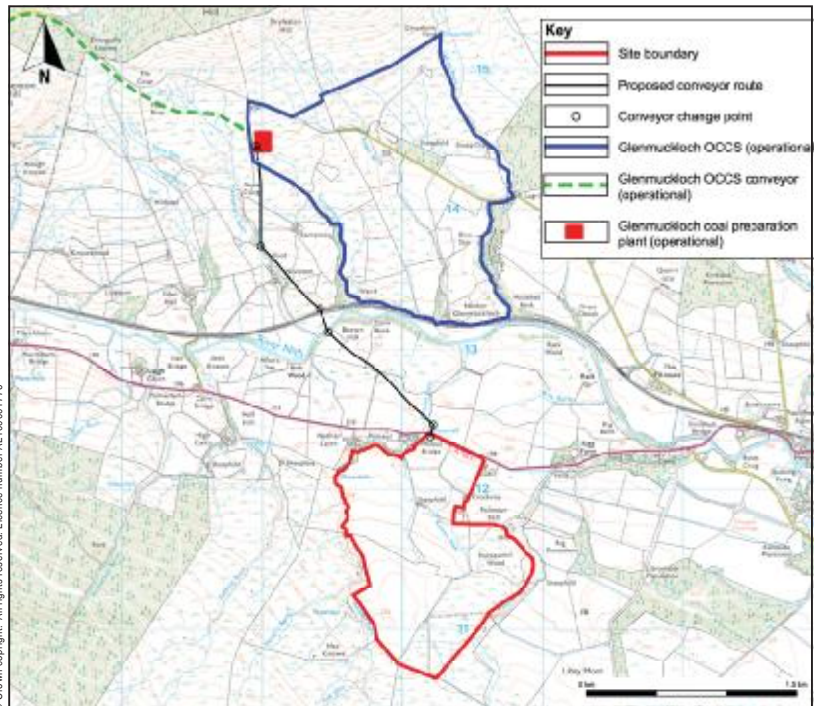
Purpose of this Non-Technical Summary

This report presents, in non-technical language, the findings of a detailed Environmental Impact Assessment that has been undertaken in connection with the proposed Rigg Opencast Coal Site (OCCS). The full report, known as an Environmental Statement, has been submitted with the planning application.

Location

Rigg OCCS is situated within the northern part of Dumfries and Galloway and lies just south of the A76(T). The nearest settlements are the villages of Kirkconnel / Kelloholm and New Cumnock, which are located approximately (~) 2 km to the east and ~6.5 km to the west respectively. Otherwise the nearest properties are a small number of isolated farmsteads and individual houses.

Site Location Plan



The Site and Development Proposals

The proposed scheme is an opencast coal development that will occupy a total site area of about 146 hectares (ha). Rigg OCCS will involve the working of ~1.3 million tonnes of coal at an extraction rate of 565,000 tonnes each year. This means that coal production will last for about 2 years and 4 months, with site establishment and restoration taking approximately 6 months and 24 months respectively. The average coal output from the site will be approximately 12,250 tonnes/week and it is envisaged that this coal will be used to generate electricity in power stations and in other industries.

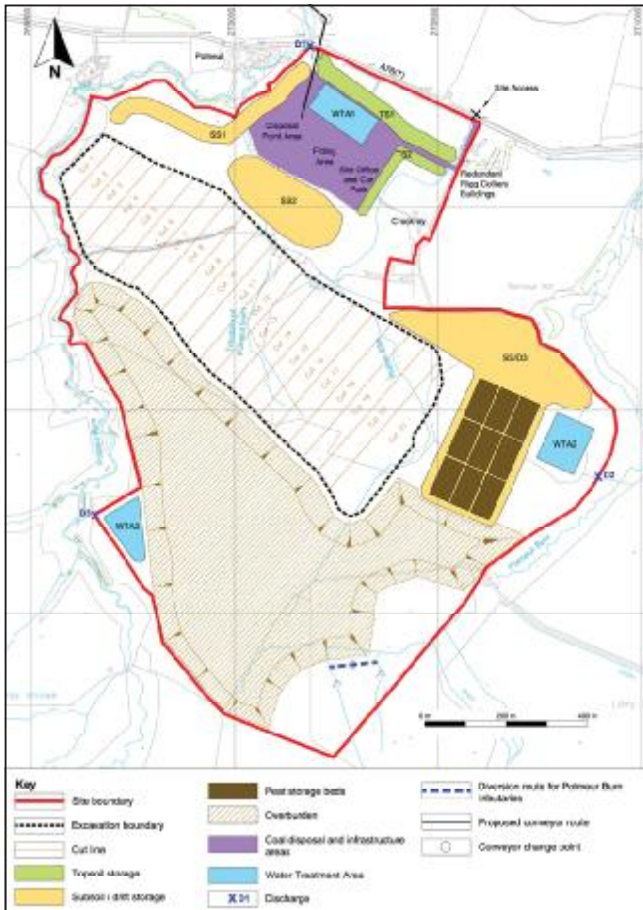
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Site Layout Plan



It is proposed that Rigg OCCS would work from 7am on Monday through to 1pm on Saturdays, although some of the noisier activities such as coal preparation and the despatch of coal from the site will be restricted to normal daytime hours only (7am - 7pm) during weekdays and 7am - 1pm on Saturdays. No operations would take place on Sundays or bank holidays.

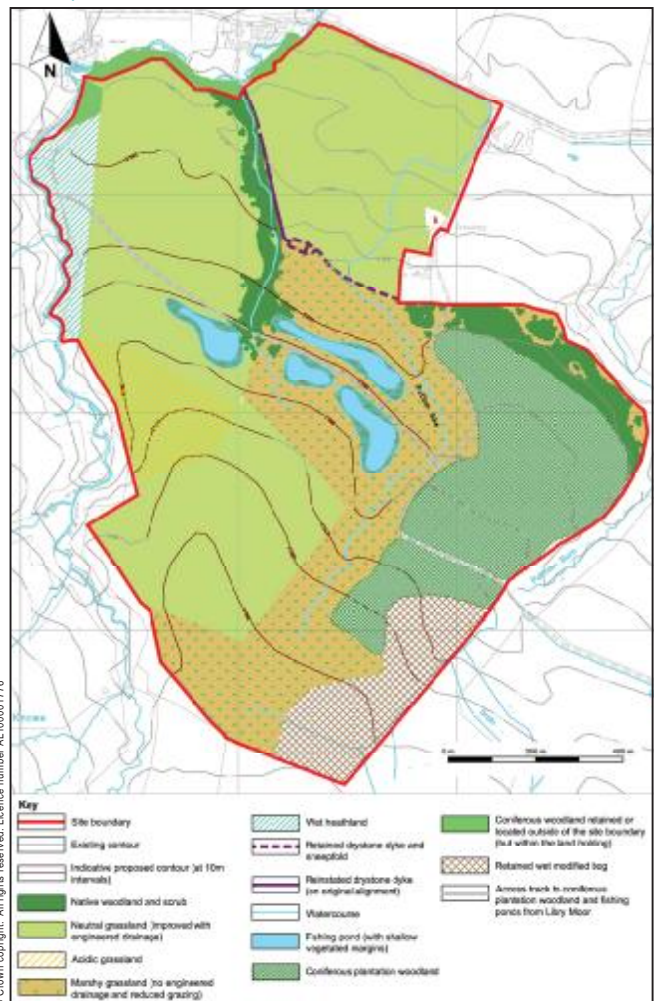
The proposed layout of the site is shown above and includes numerous measures that have been designed to minimise the environmental effects of the development. These include the withdrawal of the subsoil / drift storage mound (SS/D3) to ensure that a length of the Rotton Sike Burn is left undisturbed, thereby facilitating the future reinstatement of this feature; and ensuring that the position of one of the topsoil mounds allows for an existing length of good quality dry stone walling immediately north of the excavation area to remain undisturbed. The overburden mound has also been designed to stand-off from an area of modified bog and more generally, the design of soil and overburden mounds has taken into account the existing topography and likely views of the site.

Site Restoration

Rigg OCCS will be progressively restored to minimise effects and return the land to its restored state as soon as possible. The restoration plan has been designed in accordance with the guidelines provided in the Dumfries and Galloway Landscape Assessment and the Dumfries and Galloway Biodiversity Action Plan and it seeks to replicate the best of the existing landscape, whilst also providing significant landscape improvement. The design therefore includes a wide range of vegetation that includes native broadleaf and plantation woodland, marshy grassland and productive agricultural grazing areas.

Specifically, around 70 ha of the site will be restored to neutral grassland, which, with its engineered drainage, will provide much improved grazing land for local livestock farmers. Furthermore, ~31 ha of the southern part of the site will be put back to marshy grassland (with no engineered drainage) and two burns directly affected by the proposed development, the Rotton Sike and a tributary to the Polneul Burn, will be reinstated along a more meandering alignment, resulting in a longer and more natural watercourse. It is intended that these measures will provide enhanced habitat and attract a wider variety of wildlife, especially birds, to the site.

Concept Restoration Plan



Two new areas of woodland will also be created. These will comprise ~23 ha of plantation woodland fringed by native woodland located in the east of the site, and ~2.5 ha 'finger' of native woodland located along the restored Polneul Burn tributary. An area in between these two burns will also accommodate three small fishing ponds (the largest of which will be ~1.5 ha in area), which will be designed not only to provide recreational and tourism opportunities, but also opportunities for wildlife (especially birds). Finally, around 340 m of dry stone walling will be restored in the northern part of the site.

Alternatives

Coal can only be worked where it is found and significant quantities of this high quality, energy resource that could be used for electricity generation, exists at Rigg OCCS. The alternative to the development would involve the extraction of coal from other opencast sites in the UK, the use of coal from the limited number of remaining deep mines located in England or from the importation of coal from a range of sources overseas, with the consequent environmental effects associated with transporting material over long distances as well as effects on the UK's balance of payments.

Planning Context and Environmental Impact Assessment

Because of the scale and nature of the development, an Environmental Impact Assessment (EIA) has been undertaken in respect of Rigg OCCS. The purpose of the EIA is to identify how people and environmental resources (collectively known as receptors) could be affected by the mining proposals and to put forward measures (often referred to as mitigation) that will avoid, minimise or offset any negative effects. To achieve this, an Environmental Statement (ES) has been prepared following a consultation (or scoping) exercise, involving the planning department of Dumfries and Galloway Council and other key organisations. Details of the proposals were widely circulated to these bodies and their responses used to inform the scope and content of the EIA. Experts in a wide range of disciplines

carried out the environmental studies, and the findings are summarised below.

Geology and Groundwaters

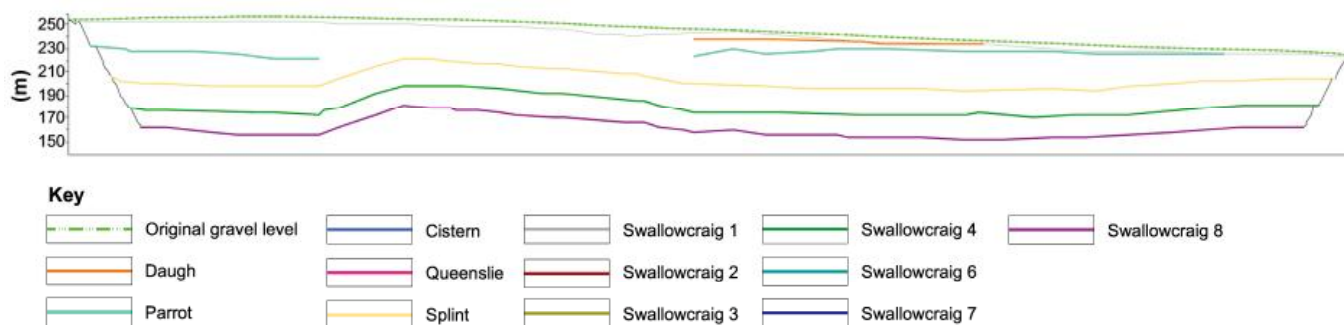
The geology of the site consists of Carboniferous Lower Coal Measures, with twelve named coal seams forming the reserves of the proposed development. These seams are inclined towards the north and northeast and the geology has also been disturbed by the presence of two faults that cross the site.

The underground water system (hydrogeology) of the site and the surrounding area is influenced by the River Nith, which is located ~ 1 km north of Rigg OCCS. This forms the divide between groundwater flowing northwards from Rigg OCCS and southwards from land located to the north of the river.

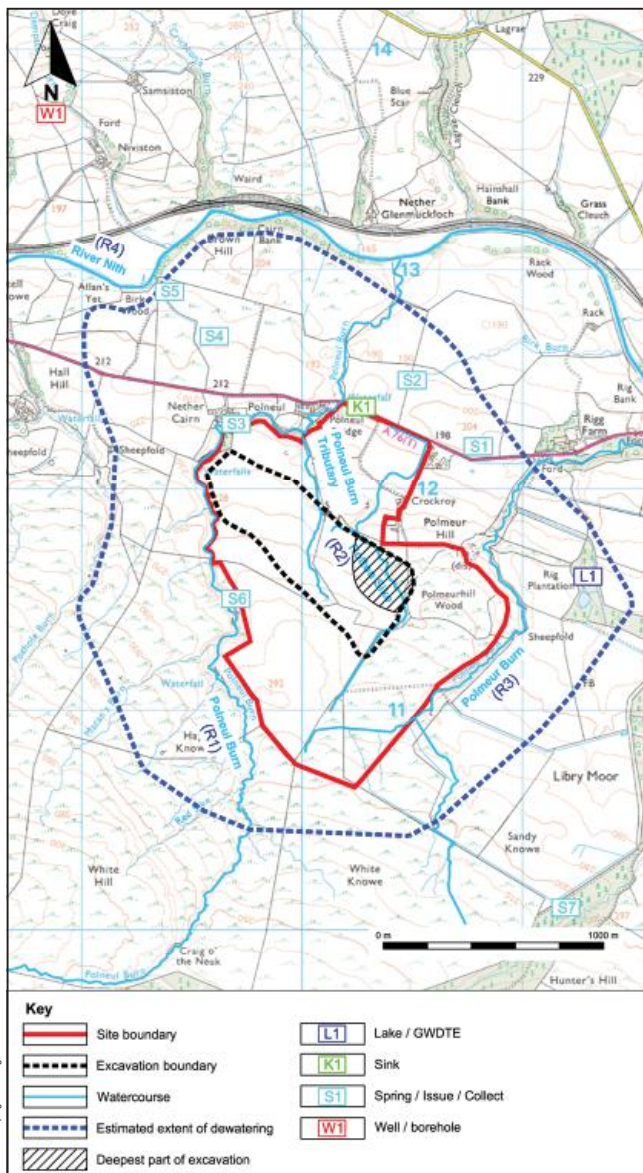
The assessment of hydrogeological effects has looked at the risks to other groundwater receptors from a potential temporary lowering of groundwater levels. Such receptors included the many springs and watercourses in the vicinity of the site, together with wetlands and lakes. However, the assessment concluded that none of these features would be significantly adversely affected by the proposed Rigg OCCS.

Consideration has also been given to likely effects on groundwater quality following the backfilling and restoration of the site. It has been concluded that a number of horizons of rock have the potential to generate poorer quality water, but that the majority of the backfilled rock will be able to neutralise the small quantities of acidic water that might be generated. A detailed backfilling strategy will be undertaken to confirm the proposed approach and submitted to the planning authority as a condition of any planning permissions for confirmation by the Scottish Environmental Protection Agency (SEPA). It is therefore considered that any potential hydrological effects on groundwater from opencast backfill will not be significant (see map over the page).

Geological Cross Section from North-West to South-East through Rigg OCCS



Estimated Maximum Extent of Dewatering



Surface Waters

The site is bordered by two named watercourses – the Polmeur Burn and the Polneul Burn – both of which feed into the River Nith, which is an important salmon fishery. These watercourses though would be largely unaffected by the development proposals. However, a small tributary of the Polmeur Burn will need to be diverted during site operations and both watercourses will receive treated surface water runoff under controlled conditions. Furthermore, a 1 km length of the existing Rotton Sike Burn, together with a tributary of the Polneul Burn will be removed by site operations, with any flows from their original catchments effectively being transferred via site drainage to one (or more) of the three site water treatment areas.

The risk of contamination from surface water run-off mainly relates to the erosion of fine soil particles, which can

discolour or cloud the water. During times of heavy rainfall this effect can be dramatic and without control, and this water can wash into downstream watercourses and deposit quantities of sediment along the riverbed, thereby affecting the appearance and ecology of the river. To deal with this problem, each water treatment area will be equipped with *flow balancing*, designed to prevent downstream flooding. The run-off is then directed to a system of settlement lagoons, where the fine particles have time to settle, before the clean treated water is discharged to either the Polneul or Polmeur Burn in accordance with limits laid down by SEPA. Fuel storage on the site will also be carefully controlled and each treatment area will be equipped with oil traps to provide additional protection of downstream contamination from chemicals. Flow balancing installed to hold large volumes of runoff during storm conditions until the water can be effectively treated through lagoon systems will also reduce the risks of downstream flooding of watercourses.

As part of the site restoration, the diversion of the Polmeur Burn tributary will be reinstated and the Rotton Sike Burn and the Polneul Burn tributary will be replaced by new watercourses. These new burns will be more meandering and natural looking than they are at present. In this context, any adverse effects that arise from the temporary loss or diversion of the on-site watercourses will be offset by the benefits that would be realised following restoration.

Soils

The Scottish Agricultural College carried out a soil survey in 2006 and this revealed that the site consists of a mixture of five main agricultural soil types, including large quantities of peaty material. These include the normal divisions of topsoil and subsoil, but also incorporate other differences including soils of varying quality. The land has also been classified in terms of its suitability for agricultural use, with none of the site area being designated as prime agricultural land.

The design of the site includes provision for the separate stripping and storage of the various soil types and this, together with handling the respective soils in their optimum condition (normally dry for mineral soils, but wet for peaty soils and peat), will both preserve quality and enable the site to be restored to an appropriate after use. Soils will also be stripped from some areas without the need for them to be temporarily stored and instead they will be placed straight upon areas that are being restored as the site progresses.

In terms of restoration, the design includes provision for restoring an increased amount of improved agricultural land (for grazing purposes), whilst including other benefits such as a new marshy grassland, wetland and increased forestry land. Taking all of these factors into account, it has been concluded that the site could be developed without causing any significant effects on soil quality.



Biodiversity

The assessment of biodiversity at the site has involved consultation with all of the key organisations, including Scottish Natural Heritage (SNH), the Scottish Executive Environment and Rural Affairs Department (SEERAD), the Royal Society for the Protection of Birds (RSPB), the Scottish Wildlife Trust, the Nith and District Salmon Fishery Board and the Dumfries and Galloway Environmental Resources Centre. The Dumfries and Galloway Local Biodiversity Action Plan was also consulted for details of priority habitats, protected species and locally designated wildlife sites. As a result of these consultations, it has been confirmed by SNH that there are no important nature conservation sites within the boundary of Rigg OCCS. Moreover, whilst there are three Sites of Special Scientific Interest (SSSI) located within 2 km of Rigg OCCS (Polneul Burn SSSI; Polhote Burn SSSI; and Lagrae Burn SSSI), as these are designated for the geological rather than biological interest, in ecological terms, none of these are predicted to be significantly adversely affected by the development. Furthermore, although the internationally important Muirkirk and Lowther Uplands Special Protection Area (SPA) is located ~3 km north-east of Rigg OCCS, it is sufficiently far enough away from the proposed development such that no adverse effects resulting from the dewatering of groundwaters and dust deposition are predicted.



Short-Eared Owls

Several ecological surveys have also been carried out at Rigg throughout 2006 and 2007. These commenced with an overall survey, known as a Phase 1 Habitat survey. This was subsequently followed by a detailed breeding birds survey, which focussed on moorland birds – especially black grouse - and birds of prey such as merlins and short-eared owls. A wintering bird survey was also carried out along with other detailed surveys including a bat survey, a great crested newt survey and badger, otter and water vole surveys. The surveys have been used to describe the existing situation within the site and to identify the potential sensitive ecological receptors, both in terms of plant (flora) and animal (fauna) life.

At Rigg it became apparent that birds were one of the most important ecological receptors. The moorland nature of the on-site habitat makes it potentially suitable for black grouse. Indeed, a single male black grouse was observed during the detailed survey work. Furthermore, the nature of the vegetation and the on-site fauna at Rigg makes it suitable feeding ground for owls, including short-eared owls. This was confirmed by the presence of nesting barn owls in redundant colliery buildings immediately outside the site boundary and short-eared owls hunting over the site. The site is not, however, considered to offer a good feeding ground for other protected birds of prey such as merlins. Moreover, its importance for other birds, including wintering birds is considered to be no more of local value.

A mitigation strategy has therefore been devised to protect black grouse and short-eared owls. Specific measures are also proposed to minimise disturbance to barn owls nesting in derelict colliery buildings adjacent to the site entrance. These include an entry system to the operational site that would minimise the need for workers to exit their vehicles and fencing to ensure that workers do not inadvertently stray into this area. During the site's operational phases, compensatory measures are also proposed to offset the effects to black grouse on the site. This will involve a financial contribution to the Dumfries and Galloway Black Grouse Recovery Project to the equivalent value of managing a proportion of the grassland for this species. In the longer term, the restoration plan for the site includes measures that will benefit black grouse, including the creation of native woodland and woodland edge habitat bordering marshy grassland, such that the site will provide considerably better habitat for this species in the long term.

Detailed survey work has also confirmed that whilst bats were not found to roost on site, a small number of common, pipistrelle and Daubenton bats were recorded foraging over the site. In this context, the site was assessed to be of only local value for bats. Notwithstanding this, the restoration plan for the site seeks to improve on-site foraging habitat and to encourage bat presence on the site through the provision of bat boxes.

The survey work also confirmed that, although the site provided suitable habitat for water voles there was very limited evidence of their presence (probably because of the presence of mink which feed off water voles). As a precaution though, the site will be surveyed further for signs of water vole activity prior to site works taking place. The majority of the on-site habitat was also considered to be unsuitable for badgers and no setts were found. Furthermore, with the exception of the River Nith, no signs of otter were found along the burns within or immediately adjacent to Rigg OCCS. In terms of other species such as amphibians, reptiles and invertebrates, the site is considered to be of little value. Although there are small



ponds located within 500 m of the site boundary (there are none within the site boundary), detailed surveys have found no evidence that they are used by great crested newts.

Pipistrelle Bat



In terms of the on-site habitats that will be lost to site operations, these predominantly comprise semi improved and improved grassland that are common and widespread throughout Dumfries and Galloway and Scotland and as such are considered to be of low conservation value. Restoration measures will ensure that the restored habitats will be of greater value than those currently existing and it is therefore predicted that overall impacts to habitats will be positive. Very small areas of semi natural woodland will also be lost, but due to the small area and the plans to restore habitats following site operation these effects are also predicted to be not significant. Finally, one small area of modified bog will be lost and whilst this habitat type is identified as a priority habitat in the Habitats Directive and the UKBAP, due to its degraded nature, it has been considered of local value only and predicted effects are not significant.

Cultural Heritage

Whilst no designated features lie within the application boundary or the immediate vicinity, there are a number of recorded features of cultural heritage interest within the site. With the exception of Deil's Dyke - a medieval earthwork bank - these features are only of regional and local importance and with this in mind, and given the potential for previously unrecorded remains to exist within small areas of the site, development would be preceded by a programme of archaeological investigation and recording. This will comprise the monitoring of topsoil stripping and the preservation by record of those features affected and will ensure that any adverse effects would not be significant.

An approximate 800 m length of the surviving medieval earthwork of Deil's Dyke lies within the proposed excavation area and will be removed by site excavations. Although the Dyke is recorded as being of national importance

on the Dumfries and Galloway Sites and Monuments Record (SMR), this has not been recognised by statutory designation. Whilst a significant adverse 'combined' effect is predicted in terms of the physical loss of the earthwork remains of Deil's Dyke, a programme of survey, excavation and recording of the feature will be used to preserve the remains of Deil's Dyke by record.

Landscape

Landscape is defined as *'the whole of our external environment'*, and for the purposes of the assessment of its effects, it has been related to three kinds of receptors. The first of these relates to landscape character, which is determined by experts through the allocation of geographical areas at a regional or local level. In respect of Rigg OCCS the assessment has focussed at a regional level on the landscape character type known as *"Upper Dale (Valley) Landscape Type"*. The other receptors include local landscape designations, in this case the nearby *"Sensitive Landscape Character Area"*, located ~2.5 km west of the site, and the physical landscape features that exist within (or in close proximity to) the site. Eight landscape features have been identified as receptors and these include watercourses, woodland, historical features (i.e. Deil's Dyke) and manmade features such as dry stone walls (or dykes).

The assessment has concluded that none of the identified receptors would sustain short-term or long-term significant adverse effects. There are a number of receptors that would be moderately affected by the Rigg OCCS including many of the identified elements located within the site boundary such as the Rotton Sike Burn and features such as the dry stone dykes and Deil's Dyke, although the effects on these are considered to be not significant. However, all losses as a result of the Rigg OCCS would be compensated for by the implementation of the restoration plan, which would lead to landscape enhancement over time.

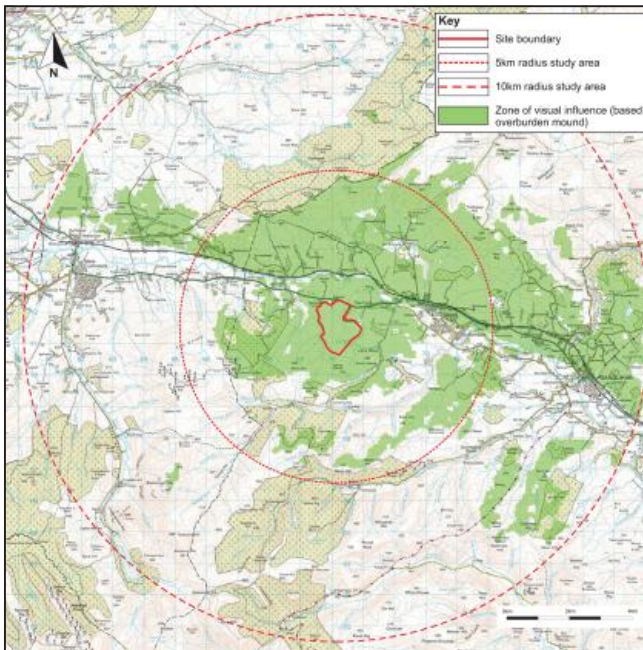
Views of the Site

An assessment of where the proposed development can be seen from within a maximum radius of 10 km from the site (based on existing and predicted features such as overburden mounds) has been carried out. This is known as the Zone of Visual Influence (ZVI) and is shown shaded green on the plan opposite, which is based on the situation when the extent and scale of overburden storage is at its greatest.

A total of ten viewpoints have been selected and discussed with Dumfries and Galloway Council, East Ayrshire Council and SNH and these are also highlighted on the plan. These have been chosen to be representative of the residential receptors and public places which are most likely to experience negative visual effects. However, because of the topography and design of the site, it is predicted that



10km Theoretical Zone of Visual Influence



only one property (Niviston) would be significantly visually affected by the development.

In addition, the assessment has taken into account views from two settlements (Kirkconnel/Kelloholm and Sanquhar), two transport routes (the A76 and the Dumfries to Kilmarnock railway line), one recreational or tourist destination (the Southern Upland Way) and fourteen individual properties. None of these were predicted to be significantly adversely affected by the proposed development.

Noise

The assessment at Rigg OCCS has focussed on seven representative residential properties in the immediate vicinity of the development, but has also been extended to cover nearby properties, with fourteen locations being considered in total. These, together with the basis of the assessment, have been agreed with Dumfries and Galloway Council's Environmental Health Department (DGCEHD).

As Rigg OCCS would work from 7am on Monday through to 1pm on Saturday, it has been assumed that the maximum daytime noise limit of 55 dB(A) and the maximum night-time noise limit of 42 dB(A) given in planning guidance would be applied.

Noise predictions have been carried out as part of the assessment at each working phase and these have been based on worst case assumptions in respect of machine location, actual operating time and weather conditions. The predictions show that in overall terms the site will be able to operate without causing significant adverse effects at any of the representative noise sensitive receptors.

Blasting and Vibration

Because of the nature of the rocks to be excavated, it is proposed to carry out blasting in part of the excavation area at Rigg OCCS. A total of six representative residential blast sensitive locations have been considered in the assessment.

With the exception of the properties of Polneul and Nether Cairn, it has been predicted that vibration levels at all other properties would be less than the recommended criterion contained in British Standards when using the recommended amount of explosive charge. The criterion will also be met at Polneul and Nether Cairn, but because these properties are located ~150 m from the excavation limit, then it will be necessary to employ blast reduction techniques. These measures include reducing the amount of explosive used, splitting the charges, changing the blast pattern, using smaller diameter boreholes or adopting a combination of these measures to ensure that the recommended vibration criterion is not exceeded. In conclusion, these measures will ensure that, although blasting may be perceptible at some locations, it will not give rise to any undue annoyance to local residents.

Consideration has also been given to the vibration effects at other potentially sensitive receptors. This has included the nearby Kilmarnock to Dumfries railway infrastructure i.e. bridges and culverts. Any adverse effects on the railway are predicted to be insignificant given that the nearest railway infrastructure is located ~1 km from the nearest proposed blasting area.

Dust

The overall potential for dust effects from the site is dependent on distance from the main potentially dust generating activities and whether a property (or receptor) is located downwind of the activity for a significant proportion of time. At Rigg OCCS, the potential for dust effects is very low due to the small number of sensitive locations in close proximity to the site. Only two properties (Polneul and Nether Cairn) are located within 500 m of part of the excavation area. However, a combination of the prevailing weather conditions, intervening vegetation and the implementation of site dust control measures means that the risk of dust effects at all receptors, including those closest to the site, will not be significant.

The issue of dust and health issues has also been assessed, but background levels of the fine particles associated with health problems are very low. Based on evidence from other opencast operations, any additional contribution that could arise from the proposed site will not lead to any negative effects on the health of the local population.



In summary, whilst there is potential for a small decrease in local air quality due to the proposed development, it would only be of short duration and would at no time result in air quality criteria levels being exceeded. On this basis, there will be no increased risk to health and no dust nuisance.

Community

The proposed opencast operations at Rigg OCCS have the potential to affect the community in a number of ways. Over and above the effects on amenity (which have been covered by other sections of this Non-Technical Summary), the other key ways that opencast operations can affect the local community relate to effects on socio-economics.

It is predicted that Rigg OCCS would directly and indirectly lead to the creation of up to 239 jobs (104 direct and 135 that are likely to be supported by the development). Although the jobs to be created will be temporary, given the fact that most are locally based (85% within 25 km of the site), they are nevertheless important in the context of Dumfries and Galloway. The development will also benefit a wide range of businesses that would serve the site and its employees.

The assessment also considered how the proposed development would affect the wider economy and existing businesses in this part of Dumfries and Galloway. Given the anticipated turnover of the site (£18m) and its predicted need for a wide range of supporting services, the effects on the wider local economy are also predicted to be beneficial.

Cumulative Effects

To comply with guidance set out in Scottish Planning Policy 16 *Opencast Coal*, consideration has been given to whether any nearby 'communities' could be adversely affected by the combined effects of Rigg OCCS and other developments that could raise similar impacts, which are within 5 km of that community. Kirkconnel is the only community within 5 km of Rigg OCCS and apart from the permitted Glenmuckloch OCCS, which is located ~1 km north of Rigg OCCS, there are no other operational or consented opencast coal sites, other mineral extraction sites or landfill sites within 5 km of Kirkconnel. In the context of this assessment, no significant cumulative effects have been identified and as such, it is considered that there would be no unacceptable disturbance to Kirkconnel.

Consideration has also been given as to whether any individual properties in the vicinity of Rigg OCCS and Glenmuckloch OCCS would be significantly adversely affected by the combined effects of these two sites. In this

respect seven potential residential receptors were identified and assessed. Given factors such as location, vegetation, topography, weather conditions and the mitigation measures incorporated into the design of both sites, the assessment of cumulative effects has concluded that any such effects would be not significant.

Conclusions

The assessment has concluded that significant adverse effects are only predicted to occur in respect of one visual receptor (Niviston) and one cultural heritage receptor. However, with the exception of the loss of a portion of the medieval earthworks of Deil's Dyke, which although not scheduled, is recorded as being of national importance on Dumfries and Galloway's Sites and Monuments Record, the adverse visual effects will be mitigated in the longer term, once the site has been restored and the proposed landscape enhancement measures have been realised. All other adverse environmental effects will be minor in nature and are not considered to be significant in terms of the EIA Regulations.

What Happens Next?

Prior to making a decision on the planning application, Dumfries and Galloway Council will seek advice from Scottish Natural Heritage (SNH), the Scottish Environmental Protection Agency (SEPA) and other consultees and will make the full Environmental Statement available for examination by members of the public. Copies may also be purchased direct from ATH Resources.

For more information, please contact Jo Davies at ATH Resources, Aardvark House, Sidings Court, Doncaster, South Yorkshire, DN4 5NU. Telephone 01302 760462.

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