

Curraghinalt Project (Dalradian) Public Local Inquiry

Statement Of Case input for Department for Infrastructure (DFI), from NIEA as a Statutory Consultee to the Planning Process for Application:

- LA10/2017/1249/F

CONTENTS		
SECTION	TITLE	PAGE No.
	SOC INPUT FOR DFI	
1	NIEA NED Countryside, Coast and Landscape Planning Branch – Input to DFI SOC	2
2	NIEA NED Biodiversity and Wildlife Unit & Conservation Designation and Protection Branch – Input to DFI SOC	22
3	NIEA NED Connecting People to Nature Team – Input to DFI SOC	29
4	NIEA RED Drinking Water Inspectorate – Input to DFI SOC	40
5	NIEA RED Land and Groundwater Team – Input to DFI SOC	43
6	NIEA RED Water Management Unit – Input to DFI SOC	58

SECTION 1

NIEA NED Countryside, Coast and Landscape Planning Branch – Input to DFI SOC for :

1. Main mine application.

**Statement of Case for Dalradian Gold Mine Conjoined Public Inquiry:
Gold Mine and Discharge Applications**

**DAERA NIEA Natural Environment Division: Countryside, Coast and
Landscape Planning Branch: Development Management Team**

Date: 3 October 2024

1. **2021/C005** – a Public Local Inquiry for planning application LA10/2017/1249/F for Underground valuable minerals mining and exploration and surface level development, at lands by Camcosy Road, Crockanboy Road and Crockanboy Road, Greencastle, County Tyrone.

1. Executive Summary

1.1. This Statement of Case relates solely to potential impacts to Northern Ireland Priority Habitats (NIPH) and protected, non-aquatic species within the proposed development site.

1.2. The proposed development has the potential to cause disturbance to any birds breeding on the site.

1.3. The proposed development will result in the loss of confirmed bat roosts and bat foraging habitat, and fragmentation of flight lines and commuting routes for bats using the roosts and wider area. Mitigation and compensation measures are proposed to minimise impacts to bats, including closure of the existing roosts, creation of a new bat house, erection of bat boxes, and enhancement of commuting and foraging habitats. Impacts from vibrations are not considered likely to be significant because the works will take place in September to minimise disturbance to the maternity and hibernation roost. Site lighting has been designed to minimise impacts to bats. The operational phase of the gold mine is unlikely to have a significant effect on any of the local bat populations.

1.4. The 2015, 2016 and 2017 otter surveys did not record the presence of otters along along the watercourses within the proposed infrastructure site. During the 2018 otter survey of the Pollanroe Burn and the un-named tributary of the Owenreagh, otter spraints and footprints were recorded on the Pollanroe Burn. This survey concluded that baseline conditions had not changed significantly since 2015/16 in respect to otter. However, the 2017 Environmental Statement did not propose any mitigation for otters as they were not recorded on site in 2015/2016. NED require mitigation measures for otters as evidence of the presence of this species using the watercourses within the Proposed infrastructure site was identified in 2018, namely pre-works otter surveys and implementation of standard mammal protection measures.

1.5. Badger surveys of the proposed infrastructure site and its immediate surrounding area were undertaken in 2015 and 2016, and again in 2017 and 2018. The construction of the proposed mine infrastructure will result in the destruction of a badger sett and fragmentation of existing habitat linking this sett to outlier setts, and has the potential to cause disturbance of badgers on site. Mitigation and compensation is proposed to minimise impacts to badgers.

1.6. The 2016 Common Lizard survey found a low population of lizards across the proposed infrastructure site. The gold mine development has the potential to impact common lizards on the proposed infrastructure site through loss and fragmentation of habitat and risk of direct mortality. Mitigation and compensation measures are proposed to minimise impacts to lizards.

1.7. A survey of the waterbodies for newts and potential refugia on the proposed infrastructure site was undertaken in 2015. Ponds on site was identified as supporting breeding newts. Newts were also recorded during the lizard survey in 2016. The gold mine development will result in the loss of two ponds which are used by breeding smooth newts, a potential breeding pond and terrestrial habitat likely to be used by smooth newts. Mitigation and compensation is proposed to minimise impacts to newts.

1.8. A survey of the proposed infrastructure site for Marsh Fritillary butterfly was undertaken in 2015 and 2016: two areas of Devil's-bit Scabious were found, but no evidence of Marsh Fritillary was found. A subsequent larval web survey of the two Devil's-bit Scabious areas was undertaken in 2017: no larval webs found at either location. The proposed habitat management plan aims to maintain 0.37ha of mire habitats, including the retention of Devil's-bit Scabious as potential Marsh Fritillary habitat.

1.9. Considering the length of time that has elapsed between the species 2015/ 2016 surveys and present (2024), NED require updated species surveys for birds, bats, badgers, common lizards, smooth newts and Marsh Fritillary butterflies to determine whether any material changes to the populations of species on site and/or habitats used by them have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan and Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 3.4.1 Management Unit 7.

1.10. Within the proposed infrastructure site, Himalayan Balsam was recorded within a hedgerow in the southern spur. NED is content that sufficient mitigation measures are proposed in the 2017 ES Volume 3 Appendix C9: Ecological Mitigation and Management Plan to prevent the spread of Himalayan Balsam. NED recommends that all mitigation measures proposed in the ES are included in the final CEMP.

1.11. The proposed gold mine will result in the permanent and temporary loss of a number of Northern Ireland Priority Habitats (NIPH). Compensatory measures are proposed which will deliver adequate compensation for the loss of Blanket Bog, Lowland Heathland, Purple Moor-grass and Rush Pasture, Hedgerows and Ponds habitats. The valley mire and streams on the proposed infrastructure site are not considered to be NIPHS. Provided the proposed mitigation measures are implemented as described in 2017 Environmental Volume 3: Appendix C9: Ecological Mitigation and Management Plan, NED have no concerns regarding adverse impacts to NIPHS.

Conditions and Informatives

1.12. Recommended conditions and informatives aimed at ensuring implementation of mitigation and compensation measures to minimise impacts to Northern Ireland Priority Habitats and Protected Species are provided to inform a planning decision for the proposed gold mine development.

2. Dalradian Gold Mine Site Description

2.1. The proposed gold mine is situated within the Sperrin AONB. It sits on a ridge that divides the catchments of the Owenkillew River and its tributary, the Owenreagh River, both of which are part of the River Foyle and Tributaries system. Much of the higher ground is covered with peat of varying thickness, supporting blanket bog and wet heath priority habitats of varying quality and Annex I habitats.

2.2. The proposed infrastructure site is composed predominantly of fields of permanent pasture interspersed with small blocks of coniferous plantation and linear belts of broadleaved and mixed plantation woodland, with degraded blanket bog on higher elevations of the ridge and remnant pockets of peat that support a mosaic of mire and wet heath habitats. There is a badger sett on site, bats in Pollan Rua Cottage, as well as smooth newts and common lizard at various locations.

2.3. The openings to the ventilation raises are proposed within a mosaic of blanket bog, wet heath / acid grassland and marshy grassland that is heavily degraded and under pressure from farm drainage and grazing.

3. Birds

3.1. 2017 ES Appendix C9 Ecological Mitigation and Management Plan (EcMMP) Section 7.0 Birds details the results of the 2015 and 2016 gold mine breeding bird surveys, which recorded 38 species of birds including Golden Plover, Buzzard and Kestrel, and the 2015/16 wintering bird survey, which recorded 31 species of birds including Golden Plover, Grey Heron, Sparrowhawk, Buzzard, Kestrel and Fieldfare.

3.2. The proposed development has the potential to cause disturbance to any birds breeding on the site. The Breeding Bird Survey Report details the mitigation measures that are proposed to minimise impacts to breeding birds.

3.3. The ES Addendum 2019 did not consider that new bird surveys were required to update the 2015 and 2016 bird ecological information because the baseline conditions for birds within the application site were not considered to have changed significantly over this period.

3.4. Considering the length of time that has elapsed between the 2015 and 2016 bird surveys and present (2024), NED require updated bird surveys to determine whether any material changes to the populations of birds on site and/or habitats used by birds have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 7.0 Birds.

4. Bats

4.1. Bat surveys of all buildings, trees and any other suitable features within the proposed infrastructure site and its immediate surrounding area were undertaken between April 2015 and July 2016. Additional bat surveys were undertaken in 2017 and 2018, concluding in 2019.

4.2. The gold mine Dry Stack Facility will result in the loss of Pollan Rua Cottage, a confirmed bat roost for Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared Bat, the loss of bat foraging habitat, and fragmentation of flight lines and commuting routes for bat species using the cottage and wider area. Mitigation and compensation measures are proposed to minimise impacts to bats, including the closure of the existing roosts under NIEA licence, the creation of a new purpose-built bat house prior to the removal of Pollan Rua cottage and erection of bat boxes in unlit areas. The new bat house and boxes will be monitored during the construction works and for two years afterwards. Commuting and foraging habitats, will be enhanced. The existing hedgerows around the new bat house will be enhanced with supplementary planting and new native-species hedgerows and woodland will be planted.

4.3. The lighting plan shows that most of the site will remain dark during the operational phase. All the alternative bat roosting sites and the retained foraging and commuting habitat within the proposed infrastructure site will remain un-lit. A dark corridor will be maintained between each of the three parts of the site where lighting is proposed to maintain linkages to the wider landscape. Light overspill will occur in areas where bat foraging and commuting habitat will have been removed, except at the wastewater treatment plant, where there is the potential for a short section of woodland edge along the Pollanroe Burn to be illuminated.

4.4. Underground blasting and construction have the potential to cause vibrations which may affect bats roosting in Pollan Rua Cottage. However, impacts from vibrations are not likely to be

significant after mitigation: the works will take place, as far as possible in September to minimise disturbance to this maternity and hibernation roost.

4.5. Considering the length of time that has elapsed between the 2017 and 2018/19 bat surveys and present (2024), NED require updated bat surveys to determine whether any material changes to the populations of bats on site and/or habitats used by bats have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Appendix C9: Ecological Mitigation and Management Plan - Section 6.0 Bats.

5. Otters

5.1. Otter surveys of the proposed infrastructure site and its immediate surrounding area were undertaken between April 2015 and July 2016. Additional otter surveys were undertaken in 2017 and 2018 to update the 2015 ecological baseline information for this species

5.2. The 2017 Environmental Statement Appendix C8: Annex G Otter Survey, Surveillance and Evaluation Report which detailed the 2015 and 2016 otter surveys recorded the presence of otters along both the Owenkillew and Owenreagh Rivers but not along the Pollanroe Burn or the un-named tributary of the Owenreagh River within the proposed infrastructure site. This survey concluded that the Pollanroe Burn and the un-named tributary had negligible value for otters along their entire length, including where these flow through the proposed infrastructure site.

5.3. The 2017 otter survey of the Pollanroe Burn and the un-named tributary of the Owenreagh, as detailed in the 2019 Environmental Statement C.8 Further Environmental Information – Addendum to Ecological Impact Assessment and Baseline, again found no evidence of any otter activity along the sections of the watercourses within the proposed infrastructure site.

5.4. However, the 2018 otter survey of the Pollanroe Burn and the un-named tributary of the Owenreagh recorded otter spraints and footprints on the Pollanroe Burn within the proposed Infrastructure Site, but concluded that baseline conditions had not changed significantly since 2015/16 in respect to otter.

5.5. The 2017 Environmental Statement did not propose any mitigation for otters as they were not recorded on site in 2015/2016. As evidence of the presence of this species was subsequently identified within the proposed infrastructure site in 2018, NED require mitigation for otters using the watercourses within the site, including a pre-construction otter survey carried out by the ECoW to check for otter activity within 150m of works, and standard mammal protection measures to be implemented during any construction works.

5.6. NED require mitigation measures for otters as evidence of the presence of this species using the watercourses within the proposed infrastructure site was identified in 2018, , namely pre-works otter surveys and implementation of standard mammal protection measures

6. Badgers

6.1. Badger surveys of the proposed infrastructure site and its immediate surrounding area were undertaken between April 2015 and July 2016. Additional badger surveys were undertaken in 2017 and 2018 to update the 2015 ecological baseline information for this species in order to update to the proposed mitigation measures, if required.

6.2. The construction of the gold mine infrastructure will result in the destruction of a main sett and fragmentation of existing habitat linking this sett to outlier setts. It also has the potential to cause disturbance of badgers on site. Mitigation and compensation is proposed to minimise impacts to badgers.

6.3. The loss of potential foraging habitat within the proposed infrastructure site is considered unlikely to have a significant impact on the local badger population as very few signs of foraging activity were found within the site. Connectivity to the north will be lost but as these areas are waterlogged peats, it is not considered likely to result in a significant fragmentation of territory, and badgers will continue to have connectivity to fields in all other directions.

6.4. Disturbance of badgers will be minimised a pre-works badger survey carried out by the ECoW to check for badger activity within 50m of works. Any works carried out within 30m of a sett, or underground blasting and construction works within 100m of setts that have the potential to cause vibrations, will be carried out under NIEA licence and ECoW supervision. All site staff will be briefed on required actions to minimise the risk to badgers during construction.

6.5. An artificial sett will be constructed to replace the main sett that will be destroyed. Exclusion measures will be installed around the sett to be destroyed. Closure of the main sett will take place under licence between July and November, inclusive.

6.6. Considering the length of time that has elapsed between the 2017 and 2018 badger surveys and present (2024), NED require updated badger surveys to determine whether any material changes to the populations of this species on site and/or habitats used by badgers have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 5.0 Badger.

7. Common Lizard

7.1. Common lizard surveys of the proposed infrastructure site were undertaken in 2016. No further lizard surveys were carried out in 2017/2018 because the baseline conditions for common lizards within the application site were considered unlikely to have changed over such a short period.

7.2. The 2016 Common Lizard survey found a low population of lizards across the proposed infrastructure site.

7.3. The gold mine development has the potential to impact common lizards on the proposed infrastructure site through loss and fragmentation of habitat and risk of direct mortality. Mitigation and compensation measures are proposed to minimise impacts to lizards. Suitable habitat to the west of the Dry Stack Facility will be managed and enhanced for lizards at least one growing season prior to construction, and hibernacula will be constructed at key locations. Lizards in proposed construction areas will be captured and translocated to the receptor site under NIEA licence and will then be excluded using suitable fencing which will be left in place during construction works. The receptor site will be monitored for five years starting the year after clearance of habitats within the development footprint.

7.4. Considering the length of time that has elapsed between the 2016 lizard surveys and present (2024), NED require updated lizard surveys to determine whether any material changes to the populations of this species on site and/or habitats used by lizards have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 8.0 Common Lizard.

8. Smooth Newt

8.1. Smooth newt surveys of the proposed infrastructure site were undertaken in 2015. No further newt surveys were carried out in 2017/2018 because the baseline conditions for common newts within the application site were considered unlikely to have changed over such a short period.

8.2. The 2015 survey of waterbodies and potential refugia on the proposed infrastructure site identified ponds on site as supporting breeding newts. Newts were also recorded during the lizard survey in 2016.

8.3. The gold mine development will result in the loss of two ponds which are used by breeding smooth newts, one potential breeding pond and terrestrial habitat likely to be used by smooth newts. Mitigation and compensation is proposed to minimise impacts to newts.

8.4. The alternative habitat that will be enhanced and managed for lizards will also provide suitable alternative habitats for newts. In addition, three new ponds will be created. Newts in proposed construction areas will be captured and translocated to the receptor site under NIEA licence, and will then be excluded using suitable fencing which will be left in place during construction works. The receptor site will be monitored for five years starting the year after clearance of habitats within the development footprint.

8.5. The ES Addendum 2019 did not consider that newt surveys were required to update the 2015 ecological baseline information for newts because the baseline conditions for newts within the application site were not considered likely to have changed significantly over such a short period.

8.6. Considering the length of time that has elapsed between the 2015 newt surveys and present (2024), NED require updated newt surveys to determine whether any material changes to the populations of this species on site and/or habitats used by newts have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 9.0 Smooth Newt.

9. Marsh Fritillary butterfly

9.1. A larval web of Marsh Fritillary was recorded in the proposed infrastructure site in 2010 in Succisa area SP2 adjacent to the track in the southern spur of the proposed site.

9.2. Marsh Fritillary of the proposed infrastructure site were undertaken in 2016. Additional Marsh Fritillary surveys were undertaken in 2017 to update the 2016 ecological baseline information for this species in order to update to the proposed mitigation measures, if required.

9.3. Adult flight and larval web surveys of the proposed infrastructure site were undertaken in 2016. The ES Addendum 2019 considered that a new Marsh Fritillary survey was required to update the 2016 ecological baseline information to ensure that the ecological baseline information for this species was up to date and that implications of any changes could be considered

9.4. Two areas of Devil's-bit Scabious were found within the proposed infrastructure site in 2016, but no evidence of Marsh Fritillary adults or larval webs were found. The 2017 larval web

survey of the two Devil's-bit Scabious areas found no larval webs at either Devil's-bit Scabious location.

9.5. Because Marsh Fritillary populations function at a landscape scale and are known to colonise sites within a range of 10km, any loss of potential habitat requires adequate compensation. The proposed habitat management plan aims to maintain 0.37ha of mire habitats, including the retention of Devil's-bit Scabious as potential Marsh Fritillary habitat.

9.6. Considering the length of time that has elapsed between the 2017 Marsh Fritillary surveys and present (2024), NED require Marsh Fritillary surveys to determine whether any material changes to the populations of this species on site and/or habitats used by them have occurred within the application site in order to inform the potential for changes to the mitigation measures, as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan - Section 3.4.1 Management Unit 7.

10. Invasive Species

10.1. Within the proposed infrastructure site, Himalayan Balsam was recorded within a hedgerow in the southern spur.

10.2. NED is content that sufficient mitigation measures are proposed in the 2017 ES Volume 3 Appendix C9: Ecological Mitigation and Management Plan to prevent the spread of Himalayan Balsam. NED recommends that all mitigation measures proposed in the ES are included in the final CEMP.

11. Northern Ireland Priority Habitats

11.1. The proposed gold mine will result in the permanent and temporary loss of a number of Northern Ireland Priority Habitats (NIPH).

Blanket Bog

11.2. Construction at the proposed infrastructure site will result in loss of 9.05 ha of Blanket Bog NIPH.

11.3. Compensatory measures are proposed as detailed in 2017 ES Volume 3: Appendix C9 Ecological Mitigation and Management Plan. These include the protection and restoration of retained peatland habitats within the infrastructure site, habitat creation through re-use of peat overburden and compensation through the restoration of existing peatland habitats within the overall application site.

11.4. The proposed compensatory measures will deliver adequate compensation for the loss of Blanket Bog NIPH.

Lowland Heathland

11.5. Construction at the proposed infrastructure site will result in loss of 2.62ha of Lowland Heathland NIPH, comprising wet heath/acid grassland mosaic. In addition, the proposed works have the potential to replace the remaining 0.04ha of wet heath with acid grassland.

11.6. The proposed compensation measures will restore/enhance 3.96ha of wet heath within Management Unit 3 by controlling grazing and blocking drains.

11.7. The proposed compensatory measures will deliver adequate compensation for the loss of Lowland Heathland habitats.

Purple Moor-grass and Rush Pasture / Upland Flushes, Fens and Swamps I(Valley Mire)

11.8. Construction at the proposed infrastructure site will result in loss of fen habitats, which include 7.94 ha of valley mire.

11.9. The 2017 ES acknowledged that it was not possible to re-create valley mire elsewhere to compensate for like-for-like loss, but the compensation that was proposed for the peatland and heathland habitats was also intended to compensate for loss of the Lowland Fen areas.

11.10. NED received additional clarification regarding the classification of the valley mire habitat type on 8 October 2019. This stated that the definition of valley mire in the NIPH Guide for Fens which was published on 28 June 2018 provided greater clarity including associated NVC codes as well as a list of fen indicator species. The applicant therefore re-assessed the valley mire as the NIPH of Fen (poor-fen).

11.11. NED's response to LA10/2017/1249/F dated 22 April 2020 stated that we accepted the reclassification of the valley mire as the Northern Ireland Priority Habitat of Fen (poor-fen), and welcomed the creation of fen habitat within Management Units 4 and 5.

Purple Moor-grass and Rush Pasture

11.12. The construction will result in the loss of 10.61ha of marsh/marshy grassland habitat, of which 0.8ha is considered to be Purple Moor-grass and Rush Pasture NIPH. Compensatory measures are proposed for loss of this NIPH, including protection and restoration of marshy grassland habitats within the infrastructure site.

11.13. The proposed habitat enhancement at the Smooth Newt and Common Lizard receptor areas (HE5, HE6 and HE7) will create 12.89ha of M23a acid grassland (Purple Moor-grass and Rush Pasture).

11.14. The proposed compensatory measures will deliver adequate compensation for the loss of Purple Moor-grass and Rush Pasture habitat.

Hedgerows

11.15. A total of 1714m of species-poor hedges within the infrastructure area will be lost to the proposed development.

11.16. A total length of 1870m of new and supplementary hedgerow planting with a number of native species is proposed in addition to the landscaping hedgerow and tree planting.

11.17. The proposed compensatory measures will deliver adequate compensation for the loss of Hedgerows.

Ponds

11.18. The construction will result in the loss of three ponds with a total area of 0.15ha. Compensatory measures are proposed through the creation of two ponds on within areas of marshy grassland within the newt receptor site (HE6) and one pond within the common lizard receptor site (HE7).

11.19. The proposed compensatory measures will deliver adequate compensation for the loss of ponds.

Rivers

11.20. The development of the mine infrastructure will result in direct loss of 975m of the headwaters of the Pollanroe Burn and its tributary. The 2017 ES stated that it would not be possible to mitigate or compensate for the loss of these headwater streams, but that, because the habitats along the Pollanroe Burn and its tributary provided limited opportunities for wildlife, these watercourses were unlikely to meet the Headwater criteria to qualify as Rivers NIPH.

11.21. NED received additional clarification regarding the potential Headwater criteria status of the Pollanroe Burn and tributary on 8 October 2019 which stated that the modified nature of the watercourses precluded them from being classified as Rivers NIPH.

11.22. NED's response to LA10/2017/1249/F dated 22 April 2020 stated that we were content that the section of the Pollanroe Burn within the proposed development site did not meet the Rivers NIPH criteria of a headwater due to its highly modified state and were content that the watercourse would be naturalised after the operational phase in accordance with the 2017 ES Volume 3 appendices: B5 Conceptual Closure Plan and C17: Landscape Restoration Plan.

11.23. Provided the proposed habitat mitigation and compensation measures are implemented as described in Environmental Statement 2017 Volume 3: Appendix C9 Ecological Mitigation and Management Plan, NED have no concerns regarding adverse impacts to Northern Ireland Priority Habitats within the infrastructure site.

12. Conditions Without Prejudice

12.1. No development activity, including ground preparation or vegetation clearance, shall take place until a final Construction and Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Planning Authority. The approved CEMP shall be implemented in accordance with the approved details and all works on site shall conform to the approved CEMP, unless otherwise agreed in writing by the Planning Authority. The CEMP shall include the following:

- a) Construction methodology and timings of works
- b) Pollution Prevention Plan; including suitable buffers between the location of all construction works, storage of excavated spoil and construction materials, any refuelling, storage of oil/fuel, concrete mixing and washing areas and any watercourses or surface drains present on or adjacent to the site
- c) Site Drainage Management Plan; including Sustainable Drainage Systems (SuDS), foul water disposal and silt management measures
- d) Peat/Spoil Management Plan; including identification of peat/spoil storage areas, management and handling of peat/spoil and details of the reinstatement of excavated peat/spoil
- e) Water Quality Monitoring Plan
- f) Environmental Emergency Plan
- g) Mitigation measures as detailed in the Environmental Statement and Outline Construction Environmental Management Plan
- h) Details of the appointment of an Ecological Clerk of Works (ECoW) to oversee all works and implementation of mitigation measures and their roles and responsibilities

Reason: To protect Northern Ireland priority habitats and protected and priority species, to ensure implementation of mitigation measures identified within the Environmental Statement.

12.2. No development activity, including ground preparation or vegetation clearance, shall take place until a (final) Habitat Management Plan (HMP) has been submitted to and approved in writing by the Planning Authority. The approved HMP shall be implemented in accordance with the approved details and all works on site shall conform to the approved HMP, unless otherwise agreed in writing by the Planning Authority. The HMP shall include the following:

- a) Clear aims and objectives of proposed habitat management/restoration
- b) Description of pre-construction, baseline habitat conditions
- c) Appropriate maps, clearly identifying habitat management areas
- d) Detailed methodology and prescriptions of habitat management and restoration measures, including timescales, and with defined criteria for the success of the measures
- e) Details of the prohibition of habitat damaging activities, including agricultural activities
- f) Details of the regular monitoring of the effectiveness of habitat management and restoration measures using appropriate methodology (e.g. visual inspections, vegetation quadrats, fixed point photography) in years 1, 2, 3, 5, 10, 15 and 25 after construction
- g) Details of the production of regular monitoring reports which shall be submitted to the Planning Authority within 6 months of the end of each monitoring year and which shall include details of contingency measures should monitoring reveal unfavourable results

Reason: To compensate for the loss of and damage to Northern Ireland priority habitats and to mitigate for impacts to priority species/breeding birds.

12.3. No development activity, including ground preparation or vegetation clearance, shall take place until a Protected Species Management Plan (PSMP) has been submitted to and approved in writing by the Planning Authority. The approved PSMP shall be implemented in accordance with the approved details and all works on site shall conform to the approved PSMP, unless otherwise agreed in writing by the Planning Authority. The PSMP shall include the following:

- a) Details of updated surveys for protected species prior to works commencing using appropriate methodology
- b) Details of appropriate mitigation for protected species to be implemented during the site preparation, construction and operational phases, including timing of works, wildlife corridors, buffer zones and/or fencing

- c) Details of appropriate monitoring of impacts to protected species during construction works
- d) Details of appropriate measures to be followed should monitoring indicate potential impacts to protected/priority species and/or potential breaches of wildlife legislation

Reason: To mitigate for impacts on protected/priority species using the site.

13. Informatives

13.1. The applicant's attention is drawn to the following Standing Advice for Pollution Prevention Guidance, Sustainable Drainage Systems and Discharges to the Water Environment. Standing advice notes are available at <https://www.daera-ni.gov.uk/articles/standing-advice-0>

13.2. The applicant's attention is drawn to The Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended), under which it is an offence:

- a) Deliberately to capture, injure or kill a wild animal of a European protected species, which includes all species of bat and the otter (*Lutra lutra*);
- b) Deliberately to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;
- c) Deliberately to disturb such an animal in such a way as to be likely to -
 - i. Affect the local distribution or abundance of the species to which it belongs;
 - ii. Impair its ability to survive, breed or reproduce, or rear or care for its young; or
 - iii. Impair its ability to hibernate or migrate;
- d) Deliberately to obstruct access to a breeding site or resting place of such an animal; or
- e) To damage or destroy a breeding site or resting place of such an animal.:

To avoid any breach of The Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended), all mature trees and/or buildings which require works should be surveyed for the presence of bats by an experienced bat worker or surveyor within 48 hours prior to removal, felling, lopping or demolition. All survey work should be carried out according to the Bat Conservation Trust Good Practice Guidelines (<http://www.bats.org.uk>). If evidence of bat activity is discovered, all works should cease immediately and further advice sought from the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.3. The applicant's attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild animal included in Schedule 5 of this Order, which includes the badger (*Meles meles*);
- b) damage or destroy, or obstruct access to, any structure or place which badgers use for shelter or protection;
- c) damage or destroy anything which conceals or protects any such structure;
- d) disturb a badger while it is occupying a structure or place which it uses for shelter or protection.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

Any works within 25 metres of a badger sett will require a wildlife licence to be obtained from NIEA. Licence applications should be made to the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

Any blasting or piling within 100 metres of a badger sett will require a wildlife licence to be obtained from NIEA. Licence applications should be made to the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.4. The applicant's attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild animal included in Schedule 5 of this Order, which includes the smooth or common newt (*Lissotriton vulgaris*, formerly *Triturus vulgaris*);
- b) damage or destroy, or obstruct access to, any structure or place which newts use for shelter or protection;
- c) damage or destroy anything which conceals or protects any such structure;
- d) disturb a newt while it is occupying a structure or place which it uses for shelter or protection.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

If there is evidence of newts on the site, all works should cease immediately and further advice sought from the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.5. The applicant's attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild animal included in Schedule 5 of this Order, which includes the red squirrel (*Sciurus vulgaris*);
- b) damage or destroy, or obstruct access to, any structure or place which red squirrels use for shelter or protection;
- c) damage or destroy anything which conceals or protects any such structure;
- d) disturb a red squirrel while it is occupying a structure or place which it uses for shelter or protection.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

If there is evidence of red squirrel on the site, all works should cease immediately and further advice sought from the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.6. The applicant's attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild animal included in Schedule 5 of this Order, which includes the common lizard (*Lacerta vivipara*);
- b) damage or destroy, or obstruct access to, any structure or place which common lizards use for shelter or protection;
- c) damage or destroy anything which conceals or protects any such structure;
- d) disturb a common lizard while it is occupying a structure or place which it uses for shelter or protection.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

If there is evidence of common lizard on the site, all works should cease immediately and further advice sought from the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.7. The applicant's attention is drawn to Article 10 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild animal included in Schedule 5 of this Order, which includes the Marsh Fritillary butterfly (*Euphydryas aurinia*);
- b) damage or destroy, or obstruct access to, any structure or place which Marsh Fritillary use for shelter or protection;
- c) damage or destroy anything which conceals or protects any such structure;
- d) disturb a Marsh Fritillary while it is occupying a structure or place which it uses for shelter or protection.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

If there is any evidence of a marsh fritillary colony on the site, all works should cease immediately and further advice sought from the Wildlife Team, Northern Ireland Environment Agency, Clare House, 303 Airport Road West, Belfast BT3 9ED. Tel. 028 9056 9558.

13.8. The applicant's attention is drawn to Article 4 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence to intentionally or recklessly:

- a) kill, injure or take any wild bird; or
- b) take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- c) at any other time take, damage or destroy the nest of any wild bird included in Schedule A1; or
- d) obstruct or prevent any wild bird from using its nest; or
- e) take or destroy an egg of any wild bird; or
- f) disturb any wild bird while it is building a nest or is in, on or near a nest containing eggs or young; or
- g) disturb dependent young of such a bird.

Any person who knowingly causes or permits to be done an act which is made unlawful by any of these provisions shall also be guilty of an offence.

It is therefore advised that any tree or hedgerow loss or vegetation clearance should be kept to a minimum and removal should not be carried out during the bird breeding season (e.g. between 1st March and 31st August).

13.9. The applicant's attention is drawn to Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019. Himalayan Balsam (*Impatiens glandulifera*) must not intentionally be brought into the Union; kept; bred; transported to, from or within the United Kingdom, unless for the transportation to facilities in the context of eradication; placed on the market; used or exchanged; permitted to reproduce, grown or cultivated; or released into the environment. This highly invasive plant species has been recorded on site and control measures must be taken to ensure that any works do not cause it to spread either on or off the site.

Any soil, containing Himalayan Balsam plant or seed material, which is removed off site, is classified as controlled waste under the Controlled Waste Regulations (Northern Ireland) 2002 (as amended). The Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002 (as amended) places a duty of care on 'anyone who produces, imports, stores, transports, treats, recycles or disposes of waste to take the necessary steps to keep it safe and to prevent it from causing harm, especially to the environment or to human health'. In the case of Himalayan Balsam, it is the duty of the waste producer to inform the licensed waste carrier and licensed landfill site that the controlled waste material contains Himalayan Balsam as part of the waste transfer process.

13.10. The applicant's attention is drawn to the Welfare of Animals Act (Northern Ireland) 2011 which indicates that it is an offence to cause unnecessary suffering to any animal. There are wild animals such as foxes and rabbits present on site. To avoid any breach of the Act through entombment or injury to animals on site the applicant should ensure that best practice techniques are applied during construction works. Advice on working with wildlife is available from the CIRIA online knowledge base at www.ciria.org.

SECTION 2

NIEA NED Biodiversity and Wildlife Unit & Conservation Designation and Protection Branch – Input to DFI SOC:

1. Main mine application.

Northern Ireland Environment Agency (NIEA)

Natural Environment Division

Date: October 2024

Main Goldmine Statement of Case:

- Biodiversity and Wildlife Unit
- Conservation Designation and Protection Branch

Summary Statement

As outlined in the response of March 2021, Conservation Designation and Protection have nature conservation concerns with this proposal. Based on the current information, the proposal is contrary to policy NE01 Nature Conservation of the Fermanagh and Omagh District Council Local Development Plan 2030 in that that development would be likely to have a significant adverse impact on areas or features of international/national/local importance, namely the Owenkillew River SAC and the Owenreagh River ASSI, and reasonable scientific doubt remains.

Designated Site(s) Considerations

The application site is hydrologically connected to the Owenkillew River, which is a Special Area of Conservation (SAC) and an Area of Special Scientific Interest (ASSI). The site is also hydrologically connected to the Owenreagh River ASSI and downstream of the confluence of these rivers is the River Foyle and Tributaries SAC/ASSI.

The Owenkillew has been designated for the significant physical features of the river, its associated riverine flora and fauna and adjacent woodland. The SAC supports the largest known population of Freshwater Pearl Mussel *Margaritifera margaritifera* in Northern Ireland and includes extensive beds of Stream Water Crowfoot *Ranunculus penicillatus* var. *penicillatus* and is important for otter and Atlantic Salmon. River Foyle is also designated as an SAC for its Atlantic Salmon, one of the largest populations in

Europe, Otters, and riverine vegetation. Owenreagh River is of special scientific interest because of the associated riverine flora and fauna and it remains an important river for Freshwater Pearl Mussel, with one of the largest remnant populations of this species known to exist in Northern Ireland.

The Owenkillew River and the River Foyle and Tributaries SAC are not only hydrologically linked but ecologically integrated with smaller tributaries within the catchment of the SAC which are also very important ecological resources for Atlantic Salmon in particular.

All three designated rivers are currently in unfavourable condition, this means, the site objectives are not being met and there is a risk to the status of the features for which the sites are designated.

As noted in previous consultation responses, NED do not agree that the Pollanroe Burn and Curraghinalt Burn are of 'low risk' and have limited ecological value. This has been evidenced by electrofishing surveys undertaken by Loughs Agency in June 2021 and Dalradian commissioned consultants supervised by Loughs Agency staff in June 2022, which demonstrated suitable Atlantic Salmon habitat is present in both Burns and evidence of Atlantic Salmon in the Pollanroe.

Given the current condition of the designated sites, degraded water quality in both watercourses could potentially be significant. Stringent standards for water discharges within the Curraghinalt Burn and Pollanroe Burns must be met, to avoid a likely significant or adverse effect on designated sites. This is also applicable to discharges that may impact Freshwater Pearl Mussel and their ability to be self-sustaining, as water quality is the single biggest factor that determines their condition status. It is expected, however, that suitable standards set for Atlantic Salmon at specific locations in both the Pollanroe and Curraghinalt Burns will also afford protection for Freshwater Pearl Mussel. Furthermore, maintaining stringent (and suitable) standards for Atlantic Salmon and subsequently Freshwater Pearl Mussel, will have wider ecological benefits for protected riverine sites and features, such as otters.

Following on from the evidence and advice received from Loughs Agency on available Salmon habitat in the Burns – and a catchment scale approach to protecting the SAC -

NED would advise water discharges into the Burns are set based on targets of an annual mean of $<10\text{mgL}^{-1}$ (spawning & nursery grounds) for suspended solids, as outlined in the Owenkillev SAC Conservation Objectives. These levels for suspended solids should be met 40 m upstream of the confluence between the Curraghinalt Burn and the Owenkillev River and 1.2 km upstream of the confluence of the Pollanroe Burn and the Owenreagh River, and not as previously modelled at the confluences.

Air Quality Considerations

NED have previously reviewed the Air Quality & Dust Impact Assessment (October 2017) Air Quality & Dust Impact Assessment Addendum (July 2019) and Air Quality & Dust Impact Assessment Second Addendum (October 2020) and requested updated information to provide advice on potential air pollution from the development.

Following the Call for Evidence on the 'Future Operational Protocol to Assess the Impacts of Air Pollution on the Natural Environment' (2023), NIEA have now developed an interim assessment approach. This will be used until a new assessment procedure is developed and agreed.

In line with this interim approach, NED will consider and provide advice on the potential impact of proposals both alone and in-combination with other relevant plans and projects on the designated site network.

Given the approach has now changed, further information is required to enable NED to provide updated advice. This would include output data from the model in the form of annual predicted levels, from which the final Process Contribution (PC) for NO_x emissions on each of the designated site identified within the Zone of Influence (Zoi) have been provided. NED are unable to determine if impacts are likely to arise under the interim assessment approach.

Therefore, the applicant must therefore submit these as part of the air quality impact assessment to include both nitrogen deposition (Critical Loads) and emissions (Critical Levels) from NO_x with appropriate screening distances to allow a full and robust assessment of designated site impacts. NED also require co-ordinates used to model source and receptor to the nearest point of each designated site.

References

Curraghinalt Project, Proposed Gold Mine - Baseline Air Quality Monitoring Report - Envest (December 2016)

Curraghinalt Project, Proposed Gold Mine - Air Quality & Dust Impact Assessment - Envest (October 2017)

Q30/4 P0572-18A Dalradian Gold Limited - 18 June 2018 - PPC Application - Appendix 6a - Annex A Air Quality and Dust Dispersion Model Outputs

Curraghinalt Project, Proposed Gold Mine - Air Quality & Dust Impact Assessment Addendum - AONA Environmental Consulting Ltd (July 2019)

Curraghinalt Project, Proposed Gold Mine - Air Quality & Dust Impact Assessment Second Addendum - AONA Environmental Consulting Ltd (October 2020)

Additional Freshwater Pearl Mussel Considerations:

Additional environmental information has also been identified since the date of NED's last consultation response, relating to the ecology of the Freshwater Pearl Mussel *Margaritifera margaritifera* and to the ecologies of Curraghinalt Burn and the Pollanroe Burn. This will be pertinent to the determination of four applications for environmental authorisations (two water quality discharges and two abstraction/ impoundment licences) currently under consideration by DAERA. These in turn are material planning considerations.

Freshwater Pearl Mussel (hereafter FWPM) is the only known species currently resident in Northern Ireland which is classified as 'Endangered' by the International Union for the Conservation Nature (IUCN); ie, it is threatened with global extinction. In Northern Ireland, it is now only found in six rivers, two of which are the Owenkillew and Owenreagh. It is dependent on the Atlantic Salmon to host its larvae in the earliest part of their life cycle before they drop off into the river substrate, so healthy, recruiting salmonid populations in those rivers are also important.

The proposed development and associated activities involve interactions with the Owenkillev River SAC and the Owenreagh River ASSI. All discharges from the mine ultimately discharge into the Owenkillev SAC with the potential to impact its water quality. Both rivers are hydrologically linked to the River Foyle and Tributaries SAC and together with smaller tributaries form an ecological continuum.

The Conservation Objectives for the SACs' significant species features are not being met on the basis of the last formal condition assessments –

Site	Species feature	Year of last condition assessment	Condition
Owenkillev SAC	Atlantic salmon	2011	Unfavourable
	Freshwater pearl mussel	2016	Unfavourable
Owenreagh ASSI	Freshwater pearl mussel	2018	Unfavourable
River Foyle and Tributaries SAC	Atlantic salmon	2011	Unfavourable

It is considered that condition status is unlikely to have changed in the interim as the same pressures remain.

Additional survey work carried out in 2021/22, on behalf of DAERA by the Ballinderry Rivers Trust, demonstrated the presence of FWPM in the Owenkillev immediately below the Curraghinalt Burn, and for at least 10 km downstream. This 10 km stretch of river had not previously been covered by NIEA condition monitoring. Only two FWPM were noted at the survey point immediately below Curraghinalt Burn in 2022, whereas 35 were recorded present at the same spot in 2015 in the Dalradian-commissioned survey, suggestive of a pressure in that area.

With an overall Conservation Objective to restore the FWPM and the Atlantic Salmon to Favourable Condition in terms of abundance, distribution and/or quality of feature targets within the site, these assessments show that objective is not being met.

Current understanding of development proposals is that there is insufficient information

to demonstrate the absence of adverse impacts on the integrity of the SAC, rather the opposite impact regarding water quality.

In addition to stringent water quality standards as detailed in the updated supporting advice to the DAERA NIEA-published Conservation Objectives for the Owenkillev SAC¹, a well-oxygenated sand/ gravel substrate is especially important to juvenile FWPM and this has the potential to be adversely impacted by, amongst other factors, water abstractions and siltation. FWPM in the early stages of their development require an even higher quality environment than as adults. The imbalanced age structure of the FWPM populations in the Owenkillev and Owenreagh Rivers indicates an aging population with minimal recruitment of juveniles in the past thirty years (although the 2021 survey indicates some recruitment upstream of Crouck Bridge on the Owenkillev). This confirms an already unsatisfactory aquatic environment.

¹The Owenkillev SAC Conservation Objectives can be accessed at the link below, updated September 2024. The document contains updated supplementary advice as part of an alignment of all Northern Ireland river SACs with the published JNCC Common Standards Monitoring Guidance for Freshwater Fauna (Oct 2015) and Rivers (Sept 2016).

[Owenkillev River SAC Conservation Objectives 2015 \(daera-ni.gov.uk\)](https://www.daera-ni.gov.uk/conservation-objectives/owenkillev-river-sac-conservation-objectives-2015)

SECTION 3

NIEA NED Connecting People to Nature Team – Input to DFI SOC:

1. Main mine application.

DAERA NIEA Natural Environment Division

Statement of Case for Public Inquiry

Planning ref: LA10/2017/1249/F

Proposal: Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone.

Location: Lands NW of Greencastle E of Rouskey N of Crockanboy Rd W of Mullydoo Road N and S of Camcosy Rd including lands 165m W of No. 45 Camcosy Road to the junction of Camcosy Rd and Crockanboy Rd and lands 47m to the SE of 73 Crockanboy Rd.

Countryside Coast & Landscape

Connecting People to Nature Team

Date: 08/05/2024

1. Remit

NIEA NED Connecting People to Nature Team's remit is to make strategic comment on regionally significant proposals within AONBs or the World heritage Site (WHS) and its Distinctive Landscape Setting or on proposals outside these designations which are likely to have significant landscape and visual effects on those designations.

2. Précis of position

NIEA NED Connecting People to Nature Team consider that whilst this proposal would have a significant negative impact on the designated landscape, particularly from the visual envelope to the south of the site and surrounds, the impacts will be most prominent in the preparatory and construction phase and will lessen as the operational phase which includes phased landscape mitigation progresses. We do not consider that the proposal would unduly undermine the Sperrin AONB as a whole.

3. Supporting Planning Policies

3.1 The Regional Development Strategy (RDS)

The Regional Development Strategy (RDS) 2035 recognises the importance of conserving local identity and distinctive landscape character. Para 3.31 under 'Strategic Guidance': 'Natural Heritage' states that proposals should:

“• Recognise and promote the conservation of local identity and distinctive landscape character. Landscape character is what makes an area unique. We can only make informed and responsible decisions on the management and planning of sustainable future landscapes if we pay proper regard to their existing character. Proposals should:-

- Conserve, protect and where possible enhance areas recognised for their landscape quality.
- Protect designated areas of countryside from inappropriate development (either directly or indirectly) and continue to assess areas for designation. Designating

special areas for protection is an effective way of ensuring our wildlife and natural landscapes retain their individual characteristics. Some areas are deemed of such importance that they are formally designated under various pieces of national and international legislation.” In this case the Sperrin AONB was designated in 2008 under Article 14 of the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.

Position: We consider that the proposal is contrary to the RDS 2035 as it does not recognise and/or promote the conservation of local identity and distinctive landscape character; conserve, protect or enhance an area recognised for its landscape quality ie in this case the Sperrin AONB or protect a designated areas of countryside (ie the AONB) from inappropriate development.

3.2 The Strategic Planning Policy Statement (SPPS) 2015

National Designations: The SPPS states:-

“6.187 Development proposals in AONBs must be sensitive to the distinctive special character of the area and the quality of their landscape, heritage and wildlife, and be in the accordance with relevant plan policies.

6.188 In assessing proposals, including cumulative impacts in such areas, account will also be taken of the Landscape Character Assessments and any other relevant guidance including AONB Management Plans and local design guides.

The SPPS also states under the Subject Policy:-

Minerals:-

The regional strategic objectives and policies which are particularly relevant to this application are:-

Regional Strategic Objectives

6.152 The regional strategic objectives for minerals development are to:

- facilitate sustainable minerals development through balancing the need for specific minerals development proposals against the need to safeguard the environment;

- minimise the impacts of minerals development on local communities, landscape quality, built and natural heritage, and the water environment; and
- secure the sustainable and safe restoration, including the appropriate re-use of mineral sites, at the earliest opportunity.

Regional Strategic Policy

6.155 In particular LDPs should identify areas which should be protected from minerals development because of their intrinsic landscape, amenity, scientific or heritage value (including natural, built and archaeological heritage). There should be a general presumption against minerals development in such areas. However, where a designated area such as an Area of Outstanding Natural Beauty (AONB) covers expansive tracts of land, the LDP should carefully consider the scope for some minerals development that avoids key sites and that would not unduly compromise the integrity of the area as a whole or threaten to undermine the rationale for the designation.

6.157 From time to time minerals may be discovered which are particularly valuable to the economy. Their exploitation may create environmental effects which are particular to the methods of extraction or treatment of that mineral. There will not be a presumption against their exploitation in any area, however in considering a proposal where the site is within a statutory policy area, due weight will be given to the reason for the statutory zoning.

Position: It would appear that although the proposal appears to be contrary to the SPPS in that the proposal is not “sensitive to the distinctive special character and quality of the landscape within the AONB” (para 6.187 above) two other policy statements leave room for interpretation that may be viewed as reasons for the acceptability of the proposal, namely para 6.155 and 6.157.

Para 6.155 states in relation to areas which should be protected from minerals development because of their intrinsic landscape, amenity, scientific or heritage value “However where a designated area such as an Area of Outstanding Natural Beauty (AONB) covers expansive tracts of land, the LDP should carefully consider the scope for some minerals development that avoids key sites and that would not

unduly compromise the integrity of the area as a whole or threaten to undermine the rationale for the designation.”

Para 6.157 states “ From time to time minerals may be discovered which are particularly valuable to the economy. Their exploitation may create environmental effects which are particular to the methods of extraction or treatment of that mineral. There will not be a presumption against their exploitation in any area, however in considering a proposal where the site is within a statutory policy area, due weight will be given to the reason for the statutory zoning.”

We do not consider, given the extensive nature of the Sperrin AONB that the proposal would unduly compromise the integrity of the area as a whole or threaten to undermine the rationale for the designation. We are satisfied with the proposed phased mitigation and restoration proposals. In addition the mining of gold in this location would appear to comply with para 6.157 where it is stated that there will not be a presumption against their (valuable minerals) exploitation in any area, subject to meeting zoning requirements.

3.3 The Fermanagh and Omagh District Council (FODC) Local Development Plan 2030

The Proposal with regards to Minerals Policies MIN01 and MIN02

This states in “Policy MIN01 - Minerals Development “The Council will support proposals for minerals development where it is demonstrated that they do not have an unacceptable adverse impact within the criteria (a) – (g)

- a) the natural environment;
- b) the landscape and visual amenity;

Within Areas of Constraint on Mineral Development, there is a presumption against mineral development unless one or more of the following can be met within the criteria (h) – (l):-

- j) the mineral is valuable; or

k) the mineral is of limited occurrence and there is no reasonable alternative source outside the ACMD; and

All minerals development applications must include the proposed details of restoration and aftercare of the site in accordance with Policy MIN02. Applications for new and extended quarries within ACMDs must be accompanied by a landscape and visual impact assessment.”

Position: Our consideration is that although the proposal would have an adverse impact on (a) and (b) above, the impacts would reduce as phased mitigation and restoration progresses and matures. The valuable nature and limited occurrence of the mineral is such that in our opinion the proposal would not be unacceptable within the ACMD and the presumption against mineral development would not therefore apply. We are also satisfied that the proposal meets the criteria set out in Policy MIN02 - Restoration and Aftercare. In addition a LVIA formed part of the application.

The Proposal in relation to the Sperrin AONB

Policy L01 – Development within the Sperrin Area of Outstanding Natural Beauty

Policy states “Development proposals which adversely affect or work to erode the distinctive special character including landscape character, visual amenity, natural, historic or cultural heritage of the Sperrin AONB, its views or setting, when considered individually or cumulatively alongside existing or approved development, will not be permitted. Account must be taken of the Landscape Character Assessments and any other relevant guidance including an AONB Management Plan and local design guides. Development proposals must be accompanied by a Landscape and Visual Impact Assessment.”

The proposal is located largely within the local Landscape Character Area (LCA) 24: South Sperrin as identified in the Northern Ireland LCA 1999. This states that “This landscape would be sensitive to the expansion of commercial forestry and to any large scale development, particularly relating to mineral extraction, which would be prominent in views from the surrounding ridges.” The magnitude of the proposal allied to the extensive site works, particularly in the preparatory, construction and

early operational phases would impact significantly on this location within the AONB noted for its general remoteness and tranquillity.

There are few incongruous influences except for forestry and the road infrastructure within the area. There is a strong sense of rural character and tranquillity in the vicinity of the proposal.

At a strategic level, the site is contained largely within RLCA 7 'Sperrins' within the Northern Ireland Regional Landscape Character Assessment 2016 (NIRLCA). This publication describes the Sperrins as the principal mountain range of the northwest and that it contains some of the wildest and most rugged terrain in Northern Ireland. While valleys may be populated, the hill areas are sparsely settled with a high degree of remoteness and tranquillity. The mountains and glens have significant wildness and character arising from their inaccessibility. It states that "There has been historical extraction of gold in the Sperrins, and exploratory work has been undertaken to investigate commercial mining. Should this be expanded into a large-scale operation, the impacts of industrial plant, noise, excavation and lorry movements on local tranquillity would need to be very carefully considered."

Position: The impacts of a proposal of this nature and size on the openness, rural nature and tranquillity of the area must be a prime consideration, particularly during the preparatory and operational phases. We would consider that the impacts of this proposal would be significantly adverse to a localised extent in terms of their influence on landscape character and visual amenity within this area of the Sperrin AONB. These impacts will be most prominent in the construction phase and will lessen as the operational phase which includes phased landscape mitigation progresses.

We are therefore of the opinion that whilst this proposal would have a significant negative impact on the designated landscape, particularly from the visual envelope to the south of the site and surrounds, the impacts will be most prominent in the early phases and will lessen as the operational phase which includes phased landscape mitigation progresses. We do not consider that the proposal would unduly undermine the Sperrin AONB as a whole.

4. The Potential Impact on Tranquillity

In GB, both urban and rural areas are incorporated in the Government's official recognition of tranquillity as a public asset through its National Planning Policy Framework (NPPF) 2023. Para 191 states "Planning policies and decisions should :

(b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

Tranquillity (and the perception of wildness) is considered to be a significant asset of landscape and its consideration forms part of the landscape assessment process (Guidelines for Landscape and Visual Impact Assessment 3rd edition 2013. The Guidelines give the definition of tranquillity as "A state of calm and quietude associated with peace, considered to be a significant asset of landscape".

Tranquillity mapping has been carried out widely by a number of agencies in GB including the Forestry Commission and the Countryside Council for Wales and it is an attribute that is becoming increasingly important in today's society, not least for health reasons.

The FODC LDP 2030 states under Chapter 2 'Development and Design' para 2.4 that :-

"Amenity is generally defined as a positive element or elements that contribute to the overall character or enjoyment of an area. For example, open land, trees, historic buildings and the inter-relationship between them, or less tangible factors such as tranquillity."

Para 4.3 Assessment of Landscape and Visual Impacts states " For landscape values, the assessment should describe any changes in landscape quality, scenic quality, wildness, tranquillity, natural and cultural heritage features, cultural associations and amenity and recreation that will occur due to the development (given its distance and visibility)."

Position: The impact of the proposal would, in our professional opinion, have an adverse impact on the tranquillity of the Sperrin landscape, an essential and

acknowledged feature of this area, highlighted in both the NILCA NIRLCA series and the FODC LDP 2030.

5. The Potential Impact on Dark Skies

OM Dark Sky Park and Observatory, which is 8 miles away in Davagh Forest, is the only one of its kind in Northern Ireland. It is one of two Dark Sky Parks on the island of Ireland and is the 78th area in the world to be accredited as an International Dark Sky Park.¹

The agent's lighting Consultant's proposals in Environmental Statement - Volume 3 B11 'Lighting Specifications' state that "In order to reduce visual impact and cost, we have not provided lighting for the main roads within the site, however in order to reduce the risk of accident, we have included lighting around the main junction between the compounds"

It would appear therefore that although measures to prevent light spillage would be implemented there would inevitably be light pollution from the proposal.

Position: Lighting of the proposal would have an adverse impact on the dark skies of this part of the Sperrin AONB, impacting on the existing landscape character within an extensive visual envelope around the site.

Conclusion

Overall, the Curraghinalt Project which stretches across 5kms of hillside to the south of the Sperrin AONB will result in localised significant adverse effects on the site and surrounding landscape (contained within 1km radius of the site) and localised significant adverse visual effects on views extending to approximately 3.5km from the project site, as indicated through examination of visual effects from representative viewpoints, transient routes, settlements and residential property

¹ Dark Sky Accreditation

Achieving Dark Sky Park accreditation takes years of careful monitoring of the darkness of the night sky, in all seasons, all phases of the moon and all weather conditions. Data is gathered from 'Unihedron Sky Quality Meters' which measure darkness and are installed at various points in Davagh Forest. The meters have shown measurements in excess of 21.75 magnitudes per square arcsecond. The International Dark-Sky Association works to protect the night skies for present and future generations.

groups as indicated in the Environmental Statement - Volume 3 C16 'Landscape and Visual Impact Assessment and Visualisations'.

All preparatory earth works and construction impacts will be short-term and adverse, although reversible. All the landscape and visual effects identified during the operational phase will be long-term and adverse, although other than the permanent introduction of the Dry Stack Facility (DSF), most effects will be reversible.

Furthermore, landscape restoration and habitat enhancement across the site, including new native woodland planting, which will be implemented during each phase of the project, and extensively during the closure and restoration phase, will provide a minor landscape and visual benefit that will continue beyond the operational life of the proposed project.

We are therefore of the opinion that whilst this proposal would have a significant negative impact on the designated landscape, particularly from the visual envelope to the south of the site and surrounds, the impacts will be most prominent in the preparatory and construction phase and will lessen as the operational phase which includes phased landscape mitigation progresses. We do not consider that the proposal would unduly undermine the Sperrin AONB as a whole.

Section 4

NIEA Drinking Water Inspectorate – Input to DFI SOC:

1. Main mine application.

Northern Ireland Environment Agency (NIEA)

Drinking Water Inspectorate

Advice Note for DFI Statement of Case

Planning Ref No: LA10/2017/1249/F

Date: May 2024

DAERA is a statutory consultee to the planning process under the Planning Order (Northern Ireland) 2015. As part of DAERA's role as statutory consultee, the Drinking Water Inspectorate (DWI) of Northern Ireland provide technical advice and recommendations in relation to drinking water quality and sufficiency.

LA10/2017/1249/F

DWI are content that our previous consultation response, dated 09 March 2021, adequately sets out our current position;

- With respect to public water supplies, no reference or assessment has been completed with respect to the development and its impact on Drinking Water Protected Areas. It would be beneficial for the applicant to clearly demonstrate the site is within a Drinking Water Protected Area and summarise the findings of any assessment completed. The applicant is to continue engagement with Northern Ireland Water (NIW) on its current and future responses in considering the locations and potential impacts on surface water sources used for abstracting the public water supply.
- With respect to private water supplies (PWS), DWI welcome the adoption of assessment limits to monitor trends in groundwater quality and quantity. These limits will provide an early warning mechanism before any compliance limits are reached at individual PWS. A total of 61 No. PWS have been identified at the site or within the surrounding area: only 3 No. are registered with DWI. Not all details are known for the identified PWS, with supply use and depth missing for some. The absence of the latter detail has implications for the completed risk assessment and would indicate it is incomplete. Applicant must continue to strive and obtain outstanding supply depths to enable the assessment to be completed. Only at this time can DWI confirm if they are content with the assessment. In the event of an abstraction being impacted (either in terms of quantity or quality) then the applicant would replace any abstraction. However, the degree to which quantity and or quality

can be impacted is yet to the proposed and will require agreement between the owner and users of a supply as well as DAERA DWI and the applicant.

Section 5

NIEA RED Land and Groundwater Team – Input to DFI SOC:

1. Main mine application.

Northern Ireland Environment Agency (NIEA)

Regulation Unit – Land and Groundwater Team

Groundwater Technical Advice Note for Statement of Case

Planning Ref No: LA10/2017/1249/F

AIL Reference: AIL/2024/0008

Date: September 2024

1. Remit

DAERA is a statutory consultee to the planning process under the Planning Order (Northern Ireland) 2015. As part of DAERA's role as statutory consultee, NIEA Land and Groundwater (LGW) Team provide technical advice and recommendations.

It should be noted that the groundwater information and considerations of the planning application (LA10/2017/1249/F) and abstraction licence application (AIL/2024/0008) significantly overlap despite typically being authorised/approved through separate processes. Additionally, an independent third-party (Golder Associates (UK) Limited) review has been undertaken to cover specific technical groundwater aspects related to both applications.

Therefore, due to the significant overlap, this Groundwater Technical Advice Note is applicable to both the statement of case for the planning application, in NIEA's role as a statutory consultee to the planning process, and the statement of case for the groundwater abstraction licence, in NIEA Land and Groundwater Teams role in providing inhouse environmental advice on abstraction & impoundment licence applications.

The documents reviewed to support this response are listed in Annex 1.

2. Précis of position

The LGW Team are currently unable to make a recommendation for LA10/2017/1249/F and AIL/2024/0008 due to the absence of further environmental information.

The LGW Team are content with various aspects of the proposal, however, there are outstanding clarifications, without which, a final recommendation cannot be made. A summary of the positions and the outstanding clarifications are detailed more explicitly within this document.

3. LGW Consultation Summary for LA10/2017/1249/F

3.1. Planning Consultation Background

NIEA Regulation Unit, LGW Team has been consulted on LA10/2017/1249/F and provided responses 3 times on the following dates: 05th October 2018, 24th April 2020 and 09th March 2021.

3.2. LA10/2017/1249/F Considerations

The LGW Team have assessed the planning application proposal (LA10/2017/1249/F) in line with the relevant legislation listed in Annex 2. Considerations regarding the different aspects are provided below from Section 3.2.1 – 3.2.7 and the documents considered to support this response are listed in Annex 1.

Proposed conditions relating to the planning applications can only be provided when all clarifications have been received and are considered acceptable.

3.2.1. Baseline

The SRK Consulting Groundwater Baseline Report (2017) and subsequent addendum (2019) have been reviewed by the LGW Team and are considered adequate and representative except for the monitoring of Chromium VI. The purpose of a baseline is to be able to characterise the groundwater environment, support the risk assessment and allow the operator to compare what the quality was before the activity has started. The baseline includes groundwater level monitoring, hydrogeological testing and groundwater quality monitoring.

The monitoring techniques, frequency/timescale and spatial distribution are acceptable except for Chromium VI. The Limit of Detection (LoD) for Chromium VI of 0.006mg/l is not sufficient to adequately assess the risk to the groundwater environment. This is discussed in further detail in Section 5.

3.2.2. Supporting Groundwater Modelling

Several groundwater models have been used to assess the potential impact of the proposed development on groundwater flows, geochemistry and water balance. They support both the planning application and abstraction licence application.

The groundwater modelling has been reviewed by Golder Associates (UK) Limited who concluded that the models are fit for purpose.

This specifically relates to the following documents:

- SRK Consulting (UK) Limited: Annex D (of the 2020 Groundwater Impact Assessment): Numerical Groundwater Model Report for the Curraghinalt Project, prepared for Dalradian Gold Limited, dated October 2020.
- Kaya Consulting Limited: Curraghinalt Gold Mine Project – Site Water Balance -2020 Update, prepared for Dalradian Gold, Dated October 2020.
- SRK Consulting (UK) Limited: A Geochemical Characterisation Report for The Curraghinalt Gold Deposit, Northern Ireland, prepared for Dalradian Gold, dated October 2020 (Appendix C of 2020 Mine Waste Management Plan 2020).
- SRK Consulting (UK) Limited: Annex E (of the 2020 Groundwater Impact Assessment): DSF and Pond Seepage Review, Curraghinalt Gold Mine Project, Northern Ireland, prepared for Dalradian Gold Limited, dated October 2020.

The findings of the models and their implications are considered further within the impact assessment considerations (Section 3.2.3).

3.2.3. Groundwater Impact Assessment

The SRK Groundwater Impact Assessment (GIA) (2020) has been reviewed by the LGW Team and further clarification is recommended. The aim of a groundwater impact assessment is to provide a risk-based approach to assess the potential impacts on groundwater resources and to prevent and limit pollution.

The impact assessment provides a (tier 3) detailed quantitative risk assessment and although the assessment process is satisfactory, clarification is required around the specific groundwater quality targets used. Recommended clarification regarding the groundwater quality assessment aspects is discussed further in Section 5.

The considerations only reflect groundwater aspects. Potential indirect impacts (identified in the GIA) as a result of the proposal, (for example, potential impacts on surface water or

ecology) are not within the remit of the team. These are considered separately by their respective consultees.

3.2.4. Groundwater Monitoring Action Plan

The SRK Surface Water and Groundwater Environmental Monitoring Action Plan (2020v2) has been reviewed by the LGW Team. A monitoring plan aims to ensure representative sampling, identify potential risks during the whole life cycle to the proposal and facilitate regulatory compliance. The monitoring action plan provides assessment limits for groundwater level and chemistry alongside respective assessment actions.

The monitoring action plan discusses groundwater quality targets, and it is recommended that clarification is provided regarding these groundwater quality assessment aspects. This is discussed further in Section 5.

3.2.5. Emergency Preparedness Plan

The SRK Environmental Emergency Preparedness and Response Plan Protocol (2019) has been reviewed by the LGW Team and is considered adequate with respect to groundwater specific aspects.

3.2.6. Waste Management Plan

The SRK Waste Management Plan (2020) has been reviewed by the LGW Team and is considered adequate with respect to groundwater specific aspects. The Waste Management Plan has been reviewed by Golder Associates (UK) Limited which concluded that the groundwater sections are fit for purpose.

3.2.7. Construction Environmental Management Plan (CEMP)

The SRK CEMP (2019) has been reviewed by the Land and Groundwater Team and is considered adequate with respect to groundwater specific aspects.

4. LGW Consultation Summary for AIL/2024/0008

4.1. Abstraction licence background

NIEA Regulation Unit, LGW Team has been internally consulted by the Abstraction Licence Team for the abstraction licence application – AIL/2024/0008. The LGW Team provided a response in July 2024.

4.2. AIL/2024/0008 Considerations

The LGW Team have reviewed documents relating to AIL/2024/0008 which proposes a groundwater abstraction of 1700 m³/d. The documents considered to support this response are listed in Annex 1 and the review has been considered in line with the relevant legislation listed in Annex 2.

The LGW Team are required to consider the potential impacts of the abstraction throughout the entire proposed process and recommend that the proposed abstraction licence is in place during both the pumping period and groundwater rebound period (modifications to the licence may be required between these periods). This is because there are additional risks associated during the post pumping/rebound period to groundwater.

Overall LGW Team are content with the operational groundwater abstraction proposal, subject to conditions, however, require further clarification relating to the rebound of groundwater post abstraction, which are discussed in more detail below. The considerations are therefore divided into 'operational groundwater abstraction' and 'rebound of groundwater abstraction'.

Note: Proposed conditions relating to the abstraction licence can only be provided when all clarifications have been received and are considered acceptable. The considerations only reflect groundwater aspects. Potential indirect impacts as a result of dewatering, (for example, potential impacts on surface water or ecology) are not within the remit of the team. These are considered separately by their respective consultees.

4.2.1. Operational Groundwater Abstraction Proposal

The proposed abstraction is unlikely to result in a deterioration of status classification for the relevant groundwater body during the active phase of the abstraction – (Gortin Groundwater

Body (UKGBNI4NW004) within the North-West River Basin District). The most recent classification of the Gortin Groundwater body was published in 2021 as “Good” status.

Multiple tests/assessments are used to determine the potential impact of the abstraction on groundwater body status. These include:

- Saline Intrusion Test: This test assesses if an abstraction of groundwater or set of abstractions are likely to result in the intrusion of poorer quality water into a water body. This is not considered applicable due to the groundwater body location, size, and type.
- Surface Water Quantitative Test: This test assesses whether the proposed abstraction will likely lead to a deterioration in status of a surface water body, which in turn would make the corresponding groundwater body classification ‘poor status’. The potential impacts of this test are considered by a separate consultee.
- Groundwater Dependent Terrestrial Ecosystem (GWDTE) Test: This test assesses if there will be impact on any classified GWDTE. This is not considered applicable because there are no formally designated GWDTEs within the groundwater body.
- Water Balance Test: This test assesses the proposed abstraction against the available resource in the groundwater body. This is not considered applicable because water which is returned to its environment is excluded i.e. dewatering systems.

Groundwater users:

It is noted that multiple groundwater water supplies are predicted (through modelling) to be impacted by the abstraction. The applicant has provided mitigation measures regarding this including commitment by the developer to monitor and replace any abstractions which are significantly derogated. LGW Team endorse the comments the DWI (Drinking Water Inspectorate) make in relations to these. Further clarification relating to the Assessment limits is recommended. These are discussed further in Section 5.

4.2.2. Groundwater Rebound Period

There are risks associated during the post pumping/rebound period to groundwater, and these have been identified in the SRK GIA. Further clarification relating to the GIA is

recommended and therefore LGW require this to comment on the groundwater rebound period of the abstraction licence. These are discussed further in Section 5.

5. Recommended Technical Clarifications

The following list below provides detailed description of clarifications recommended:

5.1. Compliance with the Groundwater Regulations (Northern Ireland) 2009

It is currently unclear whether the proposal will comply with the Groundwater Regulations (Northern Ireland) 2009. Further clarification is recommended.

The Groundwater Directive (2006/118/EC), as transposed by the Groundwater Regulations (Northern Ireland) 2009, state that all measures must be taken to prevent the input of hazardous substances into groundwater and limit the input of non-hazardous pollutants into groundwater. To assess whether the proposal is compliant, the applicant has provided “compliance limits” and “design target limits”. The LGW Team require further clarification on the proposed compliance limits and design target limits. These are discussed in Section 5.1.1.-5.3 and regulatory context is provided below.

Regulatory context:

The Groundwater Task Team of the UK Technical Advisory Group (UK TAG) on the Water Framework Directive (2000/60/EC) has published a ‘Technical report on Groundwater Hazardous Substances’². This report provides a technical framework to assist the environment agencies in each part of the UK in developing and refining their respective approaches to monitoring, as well as assessing and controlling risks to groundwater. It provides two different methods of assessing the risk of hazardous substances. To date a decision by NIEA has not been officially made on which regulation approach to apply and therefore NIEA would accept either.

The two methods proposed are not directly interchangeable and are applied at different compliance locations within a conceptual model. For example, MRVs (minimum reporting values) can be used to assess discernability and should typically be applied at “a point below the water table, next to the edge of the discharge area”³.

² [UKTAG Technical report GW Haz-Subs ForWebfinal.pdf \(wfduk.org\)](#)

³ [Groundwater protection technical guidance - GOV.UK \(www.gov.uk\)](#)

Whereas “concentrations in groundwater below which the danger of deterioration in the quality of the receiving groundwater is avoided” (typically 50% of the respective Drinking Water Standard (DWS)) should be applied at the base of the unsaturated zone (i.e. immediately prior to the receiving groundwater).

It should be noted that for the “concentrations in groundwater below which the danger of deterioration in the quality of the receiving groundwater is avoided”, both an assessment point and compliance point should be considered. The assessment point is where the proposed standards would be applied (i.e. the receiving groundwater - typically the base on unsaturated zone) and the compliance point is where the physical sampling would be used to demonstrate that the activity is likely to have achieved the agreed objectives and that input is acceptable. The compliance concentration measured at the compliance point is expected to differ from the concentration at the assessment point because it will likely need to be adjusted to take account of the bespoke attenuation and dilution between the assessment point and compliance point. It would therefore be a bespoke value for each compliance point based on the distance and hydrogeological properties from the input at the unsaturated zone (i.e. the assessment point).

It should be noted that when a NIEA - DAERA decision is officially confirmed (regarding the proposed UKTAG methods) there will be a requirement for relevant sites to update risk assessments/compliance monitoring to adhere to the set approach. Although the applicant may be required to change approach in the future (and the mine target/compliance limits will only apply post closure) there is still a requirement to agree the proposed methods in principle prior to approval to ensure the whole lifetime of the proposal is considered.

5.1.1. Hazardous substances

The LGW Team recommend specific clarification regarding the current proposed limits for hazardous substances:

- Chromium VI: the design target limit and compliance limit (for both the Infrastructure Area and the Mine Area) is proposed to be the same (0.005mg/l). UKTAG recommend that the minimum reporting value (MRV) of 1ug/l (0.001mg/l) for Chromium VI should be used for compliance when assessing the discernibility of hazardous substances. Annex F of the GIA (Section 4.4) states that, given that the

limit of detection (LOD) for the project exceeds the limit of quantification (LOQ) specified by UKTAG, a different approach of 50% of the DWS is used.

- It is recommended that the applicant updates the laboratory method of the baseline monitoring of Chromium VI to ensure appropriate regulation. The current LOD is not sufficient for assessment purpose.
 - It is recommended that the applicant either updates the compliance value in line with UKTAG MRV or applies the 50% of the DWS standard at the correct compliance point location (i.e. base of the unsaturated zone).
 - It is recommended that design target limits are lower than compliance limits to provide a precautionary approach.
- Arsenic (Infrastructure Area) Compliance Limit: It is recommended that justification is provided regarding the proposed methodology used to determine the compliance limit for arsenic at the infrastructure area, given that the source is predicted above the baseline.
 - Mercury (Mine Area and Infrastructure Area) Compliance Limit: It is recommended that the applicant either updates the proposed compliance value in line with UKTAG MRV or applies the 50% of the DWS standard at the correct compliance point location (i.e. base of the unsaturated zone).
 - Mercury (Infrastructure Area) Compliance Limit: It is recommended that justification is provided regarding the proposed methodology (method 2) used to determine the compliance limit for Mercury at the infrastructure area (as opposed to method 3).
 - Clarification on the location of (sampling) compliance points for hazardous substance (in terms of distance) is recommended. Typically, a limit within 50m (down gradient) of the site is considered acceptable for hazardous substances.

5.1.2. Non- Hazardous pollutants

The LGW Team recommend specific clarification regarding the current proposed limits for non-hazardous pollutants:

- Absence of compliance limits for various non-hazardous pollutants: There are multiple non-hazardous pollutants which have a target limit but not a compliance limit (for both the Infrastructure Area and Mine Area). It is recommended that compliance

limits are included for all parameters with associated target limits. This includes aluminium, copper, zinc and nitrite which are missing from table 5-2 Annex F of the GIA and substances within the table labelled with a “note 2” (nickel, silver, thallium, chloride, fluoride, sodium).

- The design target limit and compliance limit for nickel (for the Infrastructure Area) are the same for Nickel (0.02mg/l). It is recommended that design target limits should be lower than compliance limits to provide a precautionary approach.
- Compliance Monitoring for the Infrastructure Area: Annex F states that the Groundwater compliance points for non-hazardous pollutants within the infrastructure area will be “entry into drains that outlet at the Pollanroe Burn”. It is, however, identified in the Groundwater Impact Assessment that there may be a risk from contaminant seepage from the DSF (dry stack facility) to groundwater during its lifetime (including closure). It is unclear how the risk from the Infrastructure Area to groundwater receptors will be monitored/regulated and therefore clarification is required around compliance points locations, compliance values, and monitoring for the Infrastructure Area.
- Clarification on the location of (sampling) compliance points for non-hazardous pollutants (in terms of distance) is recommended. Typically, a limit within 250m (down gradient) of the site is considered acceptable for non-hazardous pollutants.

5.2. Groundwater Discharge consent

Clarification to be sought from the applicant regarding the post rebound discharge of mine waters into groundwater. NIEA are minded to view the discharge from rebounding mine water as a direct discharge to groundwater under the current Groundwater Regulations, therefore would anticipate that a groundwater discharge consent with appropriate controls and monitoring measures would be required to be in place prior to decommissioning the deep mine and pumps being switched off.

5.3. Groundwater Users

Clarification to be sought from the applicant regarding the process and definition of a “significant derogation” of a private groundwater abstraction. Assessment limits have been proposed for water level data at private abstractions, however, it is unclear whether the assessment limit provided is satisfactory to ensure sufficiency of supply. Factors such

as potential variability in yield, borehole/well construction, pump depth and hydrogeological properties present, should be considered. It is recommended that a bespoke approach is adopted to ensure private abstractions are not adversely affected.

Annex 1: Relevant Documents

- A. SRK Consulting (UK) Limited: Annex A (of the 2020 Groundwater Impact Assessment): Groundwater Baseline Report for the Curraghinalt Project, County Tyrone, prepared for Dalradian Gold Limited, dated October 2017.
- B. SRK Consulting (UK) Limited: Annex B (of the 2020 Groundwater Impact Assessment): An Addendum to the Hydrogeology Baseline Report for the Curraghinalt Gold Project, Northern Ireland, prepared for Dalradian Gold Limited, dated July 2019.
- C. SRK Consulting (UK) Limited: Annex C (of the 2020 Groundwater Impact Assessment): Groundwater Monitoring Report for the Curraghinalt Project, Northern Ireland, prepared for Dalradian Gold Limited, dated October 2020.
- D. SRK Consulting (UK) Limited: Annex D (of the 2020 Groundwater Impact Assessment): Numerical Groundwater Model Report for the Curraghinalt Project, prepared for Dalradian Gold Limited, dated October 2020.
- E. SRK Consulting (UK) Limited: Annex E (of the 2020 Groundwater Impact Assessment): DSF and Pond Seepage Review, Curraghinalt Gold Mine Project, Northern Ireland, prepared for Dalradian Gold Limited, dated October 2020.
- F. SRK Consulting (UK) Limited: Annex F (of the 2020 Groundwater Impact Assessment): Technical Note: Derivation of Site-Specific Groundwater Quality Targets, prepared for Dalradian Gold Limited, dated October 2020.
- G. SLR Consulting Ireland: EIA Baseline Data Collection: Soils and Geology, prepared for Dalradian Gold, dated May 2017.
- H. SRK Consulting (UK) Limited: A Geochemical Characterisation Report for The Curraghinalt Gold Deposit, Northern Ireland, prepared for Dalradian Gold, dated October 2020 (Appendix C of 2020 Mine Waste Management Plan 2020).
- I. SRK Consulting (UK) Limited: Groundwater Impact Assessment for The Curraghinalt Gold Deposit, County Tyrone, Northern Ireland, Prepared for Dalradian Gold; dated October 2020 (Appendix I of 2020 Mine Waste Management Plan 2020).
- J. SRK Consulting (UK) Limited: Surface Water and Groundwater Environmental Monitoring and Action Plan October 2020 Draft (Version 2) Curraghinalt Project; Prepared for Dalradian Gold, dated October 2020 (Appendix K of Mine Waste Management Plan 2020).
- K. SRK Consulting (UK) Limited: Environmental Emergency Preparedness and Response Plan Protocol for the Curraghinalt Project, County Tyrone, Northern Ireland; Prepared for Dalradian Gold Limited, dated July 2019.
- L. SRK Consulting (UK) Limited: Surface Water Impact Assessment for The Curraghinalt Gold Deposit, County Tyrone Northern Ireland; Prepared for Dalradian Gold; dated October 2020. (Appendix J of 2020 Mine Waste Plan);
- M. SRK Consulting (UK) Limited: Waste Management Plan for The Curraghinalt Project, County Tyrone, Northern Ireland; Prepared for Dalradian Gold; Dated October 2020.
- N. SRK Consulting (UK) Limited: Annex A (of the 2020 Groundwater Impact Assessment):
- O. Kaya Consulting Limited: Letter entitled "Proposed Development of Curraghinalt Mine, Response to NIEA Letter of 18th November 2021; Ref: T80/20, AIL/2020/0105, AIL/2020/0106", dated 17th December 2020.
- P. Turley Associated Limited: Letter entitled "PROPOSAL: UNDERGROUND VALUABLE MINERALS MINING AND EXPLORATION, SURFACE LEVEL DEVELOPMENT INCLUDING PROCESSING PLANT AND OTHER ASSOCIATED DEVELOPMENT AND

- ANCILLARY WORKS, GREENCASTLE, COUNTY TYRONE (REFER TO APPLICATION FORM P1, SHEET 1 FOR FULL PROJECT DESCRIPTION)", dated 22 March 2021
- Q. Kaya Consulting Limited: Curraghinalt Gold Mine Project - Site Water Balance -2020 Update, prepared for Dalradian Gold, Dated October 2020.
 - R. SRK Consulting (UK) Limited: Curraghinalt Gold Project Second Addendum to Environmental Statement, Prepared for Dalradian Gold Limited; dated October 2020.
 - S. SRK Consulting (UK) Limited: Waste management plan for the Curraghinalt Project County Tyrone, Northern Ireland, prepared for Dalradian Gold Limited, dated October 2020.
 - T. Golder Associates (UK) Limited: Technical Review report of the Waste Management Plan for the Curraghinalt Project (WMP Review - Curraghinalt Project), submitted to Department for Infrastructure, dated August 2021.
 - U. SRK Consulting (UK) Limited: Outline Construction Environmental Management Plan for the Curraghinalt Project, County Tyrone, Northern Ireland; Prepared for Dalradian Gold Limited, dated July 2019.
 - V. Golder Associates (UK) Limited: Technical Memorandum entitled "DALRADIAN PROPOSED CURRAGHINALT PROJECT GROUNDWATER MODELLING REVIEW", dated 27th January 2021, to Graeme Walker, Department for Infrastructure, From Peter Corrigan.
 - W. Golder Associates (UK) Limited: Technical Memorandum entitled "DALRADIAN PROPOSED CURRAGHINALT GOLD MINE PROJECT – WATER BALANCE REVIEW", dated 8th March 2021, to Graeme Walker, Department for Infrastructure, From Peter Corrigan.
 - X. Golder Associates (UK) Limited: Technical Memorandum entitled "DALRADIAN PROPOSED CURRAGHINALT PROJECT SURFACE WATER QUALITY REVIEW", dated 5th March 2021, to Graeme Walker, Department for Infrastructure, From Tobias Roetting.
 - Y. Golder Associates (UK) Limited: Technical Memorandum entitled "DALRADIAN PROPOSED CURRAGHINALT PROJECT PHREEQC MODELLING REVIEW", dated 5th March 2021, to Graeme Walker, Department for Infrastructure, From Peter Corrigan.
 - Z. Golder Associates (UK) Limited: Technical Memorandum entitled "DALRADIAN DSF AND POND SEEPAGE REVIEW COMMENTS" dated 5th March 2021, to Graeme Walker, Department for Infrastructure, From Peter Corrigan.
 - AA. Abstraction and Impoundment Licence Application Form for AIL/2024/0004 (internal reference: AE1/24/901534).
 - BB. SRK Consulting (UK) Limited: Curraghinalt Gold Project: Abstraction Licence Application (Mine Water), Prepared for Dalradian Gold Limited, Dated November 2020.

Annex 2 – Relevant Policy/Legislation

- The Strategic Planning Policy Statement for Northern Ireland (SPPS) – Planning for sustainable Development, September 2015.
- Water Framework Directive (WFD) 2000/60/EC: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.
- Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration
- The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015.
- The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017.
- Planning (Management of Waste from Extractive Industries) Regulations (Northern Ireland) 2015.
- Water (Northern Ireland) Order 1999.
- The Water Abstraction and Impoundment (Licensing) Regulations (Northern Ireland) 2006.
- The Groundwater Regulations (Northern Ireland) 2009.
- The Planning (Management of Waste from Extractive Industries) Regulations (Northern Ireland) 2015.

Note: respective amendments to the list above are considered relevant

Section 6

NIEA RED Water Management Unit – Input to DFI SOC;

1. Main mine application.

Northern Ireland Environment Agency (NIEA) Resource Efficiency Division:

Water Management Unit

Input to the Department for Infrastructure (DfI) Statement of Case for Curraghinalt Project (Dalradian) Conjoined Public Local Inquiry.

Date: October 2024

1. In response to a request from the Department for Infrastructure (DfI), dated 12 March 2024, for statutory consultees to provide input to the DfI Statement of Case, for the above named project, NIEA Water Management Unit has prepared the following comments, in relation to the following component of the Curraghinalt Project (Dalradian) conjoined Public Local inquiry:

- **2021/C005** – a Public Local Inquiry for planning application LA10/2017/1249/F for underground valuable minerals mining and exploration and surface level development, at lands by Camcosy Road and Crockanboy Road, Greencastle, County Tyrone.

**2021/C005 – a Public Local Inquiry for planning application LA10/2017/1249/F
for underground valuable minerals mining and exploration and
surface level development.**

2. NIEA Water Management Unit has contributed to 3 DAERA planning consultation responses in relation to application LA10/2017/1249/F, dated:
 - 5 October 2018.
 - 24 April 2020.
 - 9 March 2021.
3. The Water Management Unit consultation response for LA10/2017/1249/F, set out in the most recent DAERA planning consultation response correspondence, dated 9 March 2021, is still valid and stands on its own merits. It is therefore not addressed any further in this document.
4. However, since the date of the last DAERA planning response on the 9 March 2021, new information has been presented to NIEA in a Fisheries Report, carried out on 10 June 2021(See Annex A), which describes the outcome of an electrofishing survey, carried out by Loughs Agency, on the Curraghinalt Burn and the Pollanroe Burn. Information in relation to this point is contained in paragraphs 5 to 28.

Ecological Sensitivity of Burns

5. There are a number of small waterways identified within the Environmental Statement which are identified as being of low sensitivity, in relation to the assessment of water quantity and water quality, on the basis that they are small watercourses with no, or limited, significant ecological value (Tables 7-3 & 7-6 of Second Addendum to the Environmental Statement, Volume 3, Appendix C4, Surface Water Impact Assessment). Specifically, the Burns are:
 - Pollanroe Burn.
 - Unnamed Watercourse.

- Curraghinalt Burn.
- Attagh Burn.
- Glenealy Burn.

The Fisheries Habitat Assessment and River Habitat Survey

6. The Fisheries Habitat Assessment and River Habitat Survey of the Owenkillev and Owenreagh Rivers (Version No: 1.1 September 2017) (Environmental Statement, Volume 3, C8, Ecological Impact Assessment, Annex L, Version No: 1.1, Sept 2017) Section 2.2 states:

'Minor tributaries of the Owenkillev and Owenreagh were initially screened out during the desk based review due to their general unsuitability for salmonids. Catchment reports have documented that main channel rivers and the lower end of adjoining tributaries are the most likely spawning areas. It was therefore considered that minor tributaries would not be subject to any detailed fisheries habitat assessment but would be assessed on site as part of other ecological fieldwork, i.e. Phase I Habitat Survey.'

7. The Fisheries Habitat Assessment and River Habitat Survey of the Owenkillev and Owenreagh Rivers (Sept 2017) does not therefore contain any surveys of the small waterways, listed at para 5, to determine if they support salmonids, or assess whether suitable habitat to sustain salmonids exists within the Burns.
8. The above referenced Fisheries Habitat Assessment, at Section 2.2, states that minor tributaries would not be subject to any detailed fisheries habitat assessment but would be assessed on site as part of other ecological fieldwork, i.e. Phase I Habitat Survey.

Ecological Impact Assessment

9. Ecological Impact Assessment (Version 1.3, Sept 2017) (Environmental Statement, Volume 3, C8, Ecological Impact Assessment, Version No: 1.3, Sept 2017), Page 17, Table 5 (Summary of Ecological Scope of Works and methods Used), refers to a Fisheries Habitat Assessment, the scope of which is:

'...To provide baseline information on the tributary streams flowing to the Owenkillev and Owenreagh Rivers and assess the value of these to fish'

10. On page 54, Table 13 is described as providing a summary of species importance within the proposed infrastructure site based on the findings of the desk based study and specialist surveys.

11. On page 62, Table 13, identifies 'Fish' and describes a number of studies previously carried out in the area of interest, by third parties. Table 13 states that:

'None of these records relate to the streams flowing through the proposed infrastructure site.'

12. Table 13, in relation to Column 3 titled 'Description of presence or Likely presence at the Infrastructure Site and its Potential Zone of Influence' in reference to 'Fish', states:

'The Pollanroe Burn and the unnamed tributary, of the Owenkillev River, flowing through the proposed infrastructure site are minor watercourses that are considered to provide sub-optimum conditions for fish and negligible spawning opportunities for salmon, trout and eel. No fish species were recorded in these watercourses during the Phase I Habitat Survey or other fieldwork at these locations. The Fisheries Habitat Assessment of the Owenkillev and Owenreagh Rivers report is provided at Annex L.'

13. Column 5, of Table 3, states, in relation to fish in the Pollanroe Burn and unnamed tributary, of the Owenkillev River⁴, flowing through the proposed infrastructure site:

'All reasonable likelihood of absence within the proposed infrastructure site'

⁴ This is a typo in the Environmental Statement. The reference should refer to the Owenreagh River and not the Owenkillev River.

14. In reference to Table 16, on page 78, Assessment of Effects on Identified and Relevant Important Ecological Features (Construction Phase). The construction effects upon fish in the small waterways, listed at para 5, are not considered in Table 16 as they were not identified as being present in the small waterways, by Table 13.

15. However, Table 16, on page 91, in reference to the 'Assessment of Effects' of the impact of changes in water quality states:

'...The accepted critical sediment preferences (collated as part of the Life in UK Rivers⁴⁰) for the key species associated with the Owenreagh River are:

- *Atlantic salmon (spawning): suspended solids concentrations should be- <5 mg /l (low flows), <10 mg/L (weekly mean) and siltation should be <10 % fines in the top 30 cm of spawning gravels (the <5 mg/L figure would be expected in near natural rivers and as therefore generally 10 mg/L annual mean is typically used, including by the Loughs Agency, and which covers both spawning and nursery habitat);*
- *Atlantic salmon (fry): suspended solids concentrations <25 mg/ l (annual mean);*

The maximum concentration of TSS in the water discharged to the Pollanroe Burn during the construction phase is expected to be limited to 50 mg/L. The current average baseline level of TSS in the Owenreagh River is 5.0 mg/L (95 %ile), based on SRK's water quality monitoring results.

Quantitative modelling predicts that based on a discharge with a parameter of 50 mg/L for TSS, the annual average concentration of suspended solids in the Owenreagh River downstream of the Pollanroe Burn will be 5.7 mg/L (95 %ile). Whilst the concentration of suspended solids from the discharge will increase the mean average concentration of suspended solids by 0.7 mg/L over baseline conditions the annual mean for the concentration of suspended solids will not exceed 10 mg/L. It is therefore considered that the discharge from the proposed infrastructure site to the Pollanroe Burn, once this comes on-line, during the construction phase is highly unlikely to have a significant adverse effect on the

spawning habitat of the Owenreagh River, or on the ability of eggs and juvenile fish to develop.

However, there remains a risk of the mobilisation of silts during heavy and prolonged rainfall events in surface water run-off from areas being or which have stripped of vegetation and/or soils with the potential to result in an increase in sedimentation in the Owenreagh River prior to the water management and treatment system comes on-line or where surface water-run-off cannot be captured. Any un-controlled increase in TSS concentrations and increased sedimentation, depending upon the time of year, has the potential to affect the fisheries interest of this river.

Any deterioration in water quality is not likely to have any direct significant effect on the freshwater pearl mussel population in this river given that this is located upstream of the Pollanroe Burn. However, any effects on the migration of Atlantic salmon and trout and their ability to spawn and the development of fry and juvenile fish may have indirect implications on this species which require their glochidia to attach to the gills of juvenile Atlantic salmon and brown or sea trout as part of their lifecycle. Any indirect impact on the ability of freshwater pearl mussel glochidia to attach to the gills of a suitable host is likely to have an impact on the long-term population status of this species and the integrity of the Owenreagh pASSI.'

- 16.** It therefore follows that the same potential impacts as described in Para 15 on Atlantic salmon and brown or sea trout in the Owenreagh River, from elevated levels of suspended solids, also applies to those species, if found in the small waterways, listed at para 5.

Phase 1 Habitat Survey and Phase 2 Vegetation Survey Report

- 17.** In reference to the Phase 1 Habitat Survey and Phase 2 Vegetation Survey Report (Environmental Statement, Volume 3, C8, Ecological Impact Assessment, Annex C, Version No: 1.1, Sept 2017), the Phase 1 Habitat Survey appears to focus only on the application site and not those potentially affected areas outside of it, i.e. the lower stretches of the Curraghinalt Burn and Pollanroe Burn, or the other small waterways listed at para 5, and makes no reference to fish or direct reference to fisheries habitat in the small waterways.

**Further Environmental Information – Addendum to Ecological Impact Assessment and
Baseline Reports**

18. Further Environmental Information – Addendum to Ecological Impact Assessment and Baseline Reports (Version 1.3, Sept 2017) (Environmental Statement, Volume 3, C8, Ecological Impact Assessment, Version No: 1 FINAL, Aug 2019). Section 2.2 (Aquatic Ecology) states:

‘As such, as long as these water quality and discharge standards are maintained then there will be no disturbance of the freshwater pearl mussel, Atlantic salmon and brown trout communities within the Owenkillew and Owenreagh Rivers. Furthermore, the new processes to be adopted during operation will not result in any changes to hydrological regime or require any additional mitigation measures. The mitigation measures set out in the 2017 application will remain unchanged and the residual effects continue to be ‘not significant’ with regard to aquatic habitats and the species associated with them’

19. The addendum refers only to Atlantic salmon and brown trout in the Owenkillew and Owenreagh Rivers. There is no reference to potential impacts on salmonids in the small waterways, listed at para 5, which are tributaries of these rivers.

Ecology Summary Note

20. A Report by Dalradian Gold, dated 23 February 2021, titled ‘*Curraghinalt and Pollanroe Burns: Note on DGL survey work relating to fisheries habitat and wider aquatic/terrestrial ecology*’, See Annex B, highlights survey work relating to fisheries habitat and wider aquatic/terrestrial ecology, undertaken by Dalradian Gold, relating to the Curraghinalt and Pollanroe Burns.

21. The Report concludes that, in relation to the Pollanroe Burn and the Curraghinalt Burn:

- *'The 'perched' nature of the Pollanroe Burn above the Owenreagh River coupled with the shallow nature of the Pollanroe Burn (water depth circa 0.05 to 0.1 m), indicates a constant barrier to fish migration into the Pollanroe Burn from the Owenreagh River.'*
- *'The 'perched' nature of the Curraghinalt Burn above the Owenkillew River (2m) coupled with the shallow nature of the Curraghinalt Burn (water depth circa 0.1 m), indicates that there is a constant barrier to fish migration into the Curraghinalt Burn from the Owenkillew River'.*

22. The statement at para 21, above, is contradicted by two reports. One by the Loughs Agency (10 June 2021), see para 23, and a report commissioned by the applicant, dated November 2021, see para 24.

Investigative Electro-fishing Surveys on the Curraghinalt Burn & Pollanroe Burn (Loughs Agency, 10 June 2021)

23. On 10 June 2021, Loughs Agency carried out an electrofishing survey on the Pollanroe Burn and the Curraghinalt Burn. The survey identified the presence of salmonids in both Burns. The Report is included at Annex A.

Habitats Regulation Note and Water Quality Matters, (Ecology Solutions, November 2021)

24. In a submission to NIEA, dated 24 November 2021, Dalradian submitted a document titled, Habitats Regulation Note and Water Quality Matters, (Ecology Solutions, November 2021) (See Annex C), which acknowledged the identification of fish, and their related habitat, in the Curraghinalt Burn and the Pollanroe Burn by the Loughs Agency. This document set out the applicant's view on the relative value of the Burns and their relative importance to the integrity of the Owenkillew River Special Area of Conservation.

Concluding Statements

- 25.** In summary, the applicant's Environmental Statement has classified the small waterways as being of low ecological value. However, other than a desktop review, no specific survey work has been undertaken as part of the environmental impact assessment, to determine if the small waterways, listed at para 5, support fish and their range of habitat needs, along the full length of each waterway.
- 26.** Therefore, it would appear that there is an information gap within the Environmental Statement, as the environmental impact assessment process has not considered the potential impacts from the mine proposal on fish, and their habitat, identified within the Pollanroe Burn and the Curraghinalt Burn.
- 27.** Further to this, it would also appear that there is a potential information gap within the Environmental Statement, as the environmental impact assessment process has not included specific survey work on the other small waterways, listed at para 5, impacted by the scheme, to determine if they contain fish, and their range of habitat. These waterways were screened out during a desk based review, by the applicant.
- 28.** Therefore, the Environmental Statement for the mine proposal, does not include an assessment of the potential likely significant effects of the mine on fish, and their range of habitats, within the Curraghinalt Burn and the Pollanroe Burn. The identification of fish within the Pollanroe Burn and the Curraghinalt Burn also raises concerns that the other small waterways were incorrectly screened out from any detailed fisheries habitat assessment. Therefore, in the absence of a detailed fisheries habitat assessment of the Unnamed Watercourse, Attagh Burn and the Glenealy Burn, it is not possible to rule out any potential likely significant effects, from the proposal, on these Burns and any fish that they may, or may not, support.

End

-

NIEA RED Water Management Unit – SOC input for DFI – Annex A

Investigative Electro-fishing Surveys on the Curraghinalt Burn & Pollanroe Burn

In February 2021 Northern Ireland Environment Agency consulted with Loughs Agency regarding a Fisheries Habitat Assessment which had been carried out in the Owenkillew and Owenreagh East catchments in respect of a planning application by Dalradian. The fisheries habitat report had relied partly on a desktop assessment which had come to the conclusion that the Curraghinalt Burn and Pollanroe Burn were both of low ecological value. Furthermore it was later asserted that the confluence of both these tributaries (where they joined the main Owenkillew and Owenreagh East respectively) were perched in nature and therefore complete barriers to fish.

Staff members from NIEA and Loughs Agency jointly carried out a preliminary site visit to both of these tributaries on Thursday 11th February to take an initial look at the availability of potential fisheries habitat. Subsequent to the initial site walkover Loughs Agency staff were of the opinion that both of these streams were capable of sustaining juvenile Salmonid populations.

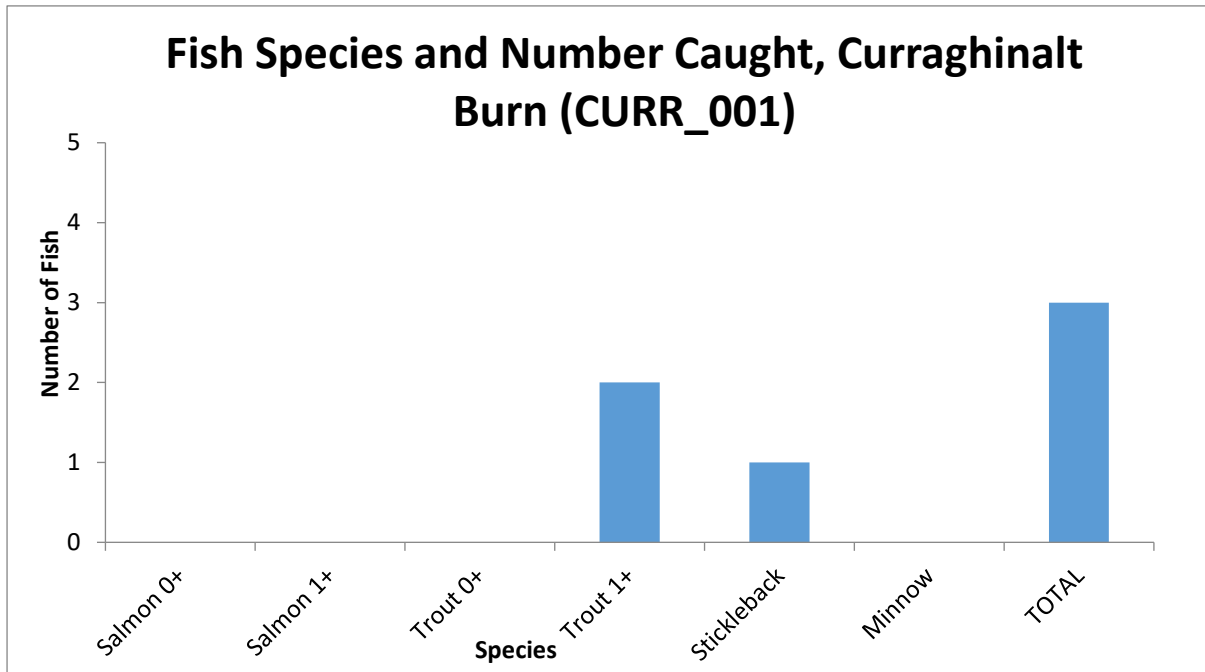
In the case of the Curraghinalt Burn the range of habitat which was accessible to fish was small, but nevertheless it was felt that it would at the very least provide a refuge for juvenile salmonids in times of spate in the main Owenkillew River. The Pollanroe Burn was deemed to have a greater expanse of suitable habitat capable of providing spawning, nursery and pockets of holding. Therefore all three habitat types required for Salmonids to complete their life cycle were judged to be present in the lower section of the Pollanroe Burn.

Loughs Agency staff advised that it would be best to carry out investigative electro-fishing surveys at a later, more suitable date. The purpose of the surveys was to collect data and provide any evidence of juvenile salmonid populations in both the Curraghinalt Burn (tributary of the Owenkillew) and Pollanroe Burn (tributary of the Owenreagh East).

These surveys were carried out on Thursday 10th June, 2021. Two staff members from the Natural Environment Directorate (CDP) were also present on the day to independently observe the surveys and to help inform their own decision making process. The results of the investigative electro-fishing monitoring are presented below.

Site 1: CURR_001

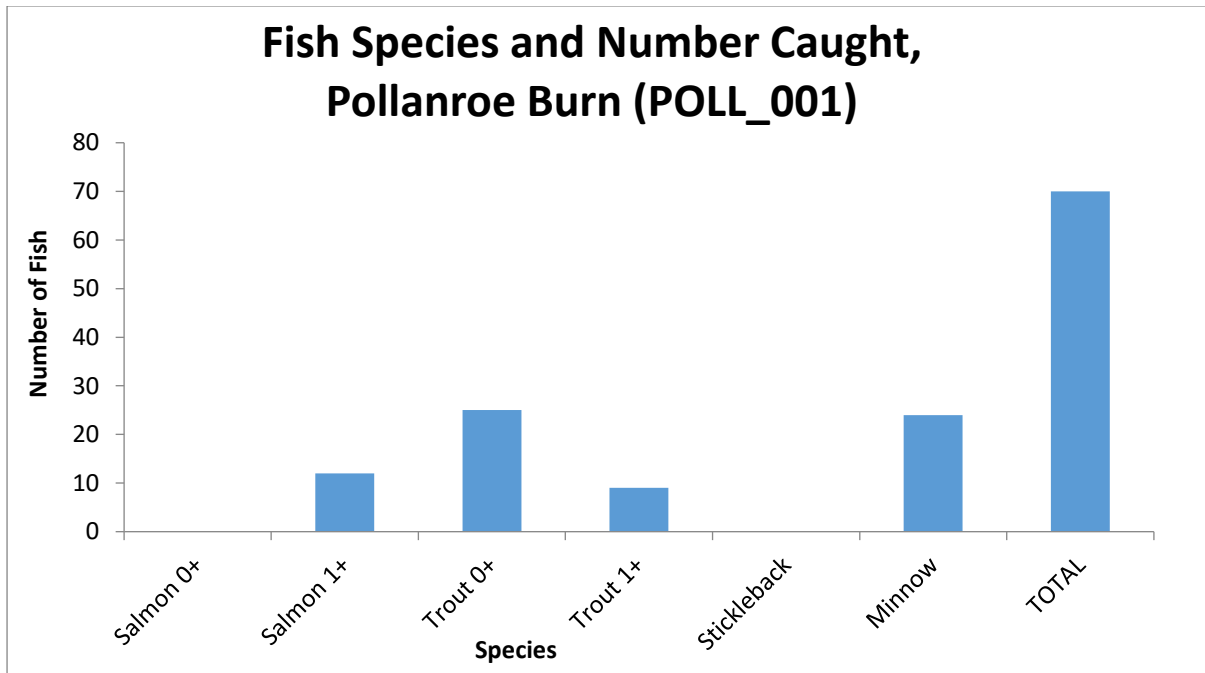
Date	River Name	Catchment	Site Code	Location Downstream Co-ordinates		Distance Electro-fished	
10/06/2021	Curraghinalt Burn	Owenkillew	CURR_001	X_CO_ORD	Y_CO_ORD	40 metres upstream	
				257129	387095		
Fishing	Salmon 0+	Salmon 1+	Trout 0+	Trout 1+	Stickleback	Minnow	TOTAL
5 Min Timed				2	1		3
Semi-Q							
TOTAL	0	0	0	2	1	0	3



Trout 1+ captured on the Curraghinalt Burn_10_06_2021

Site 2: POLL_001

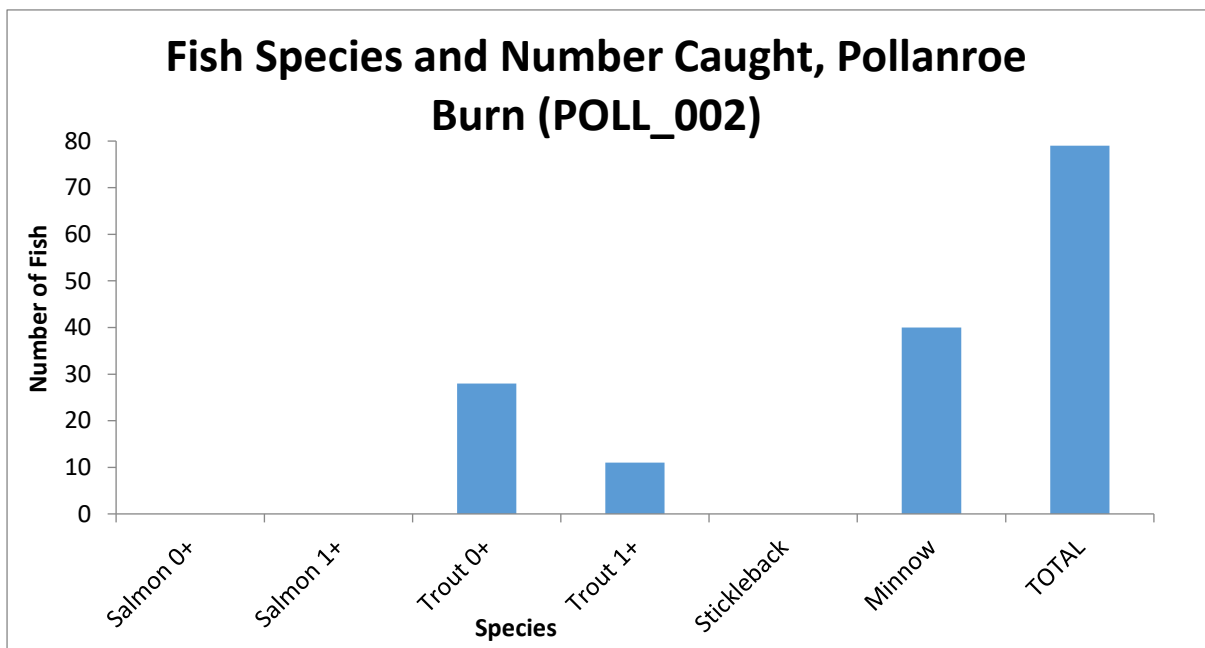
Date	River Name	Catchment	Site Code	Location Downstream Co-ordinates		Distance Electro-fished	
				X_CO_ORD	Y_CO_ORD		
10/06/2021	Pollanroe Burn	Owenreagh East	POLL_001	257479	382549	100 metres upstream	
Fishing	Salmon 0+	Salmon 1+	Trout 0+	Trout 1+	Stickleback	Minnow	TOTAL
10 Min Timed		12	25	9		24	70
Semi-Q							
TOTAL	0	12	25	9	0	24	70



Atlantic salmon Parr captured on the Pollanroe Burn_10_06_2021

Site 3: POLL_002

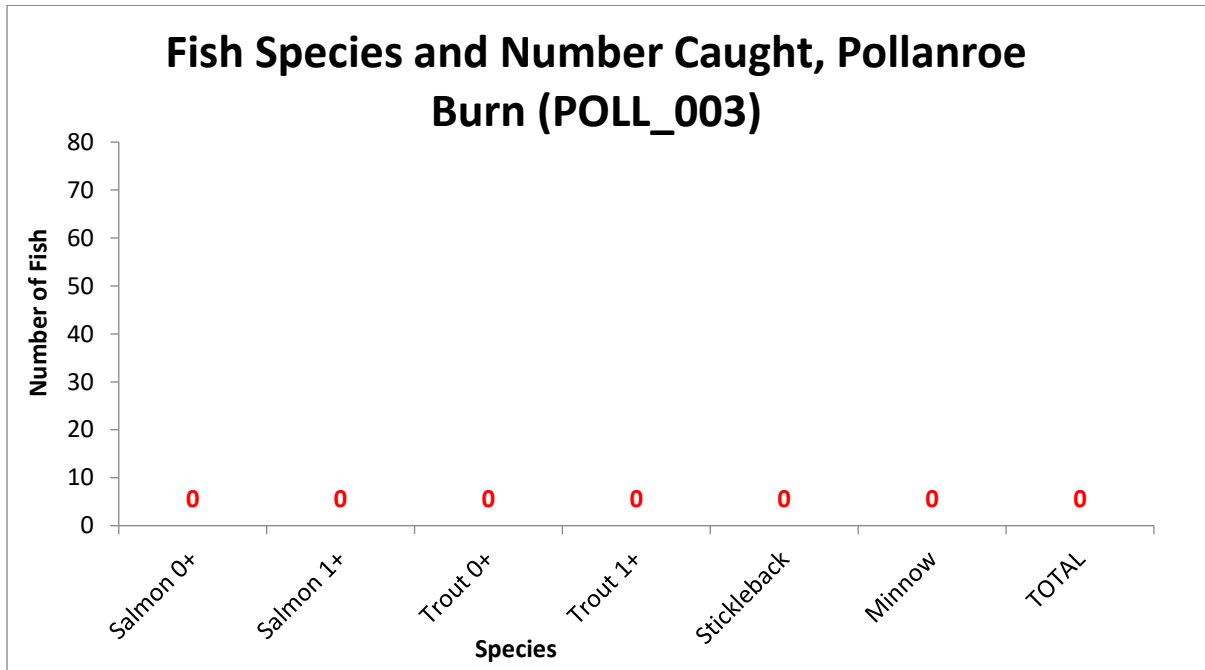
Date	River Name	Catchment	Site Code	Location Downstream Co-ordinates		Distance Electro-fished	
10/06/2021	Pollanroe Burn	Owenreagh East	POLL_002	X_CO_ORD	Y_CO_ORD	60 metres upstream	
				257673	382972		
Fishing	Salmon 0+	Salmon 1+	Trout 0+	Trout 1+	Stickleback	Minnow	TOTAL
10 Min Timed			28	11		40	79
Semi-Q							
TOTAL	0	0	28	11	0	40	79



Environment Agency colleagues observing electro-fishing surveys to investigate the presence of juvenile salmonids in the Pollanroe Burn_10_06_2021

Site 4: POLL_003

Date	River Name	Catchment	Site Code	Location Downstream Co-ordinates		Distance Electro-fished	
				X_CO_ORD	Y_CO_ORD		
10/06/2021	Pollanroe Burn	Owenreagh East	POLL_003	258261	383350	50 metres upstream	
Fishing	Salmon 0+	Salmon 1+	Trout 0+	Trout 1+	Stickleback	Minnow	TOTAL
5 Min Timed Semi-Q							
TOTAL	0	0	0	0	0	0	0



Electro-fishing survey on the Pollanroe Burn. No fish encountered, signs of enrichment. Large numbers of Gammarus & Baetid mayfly present_10_06_2021

NIEA RED Water Management Unit – SOC input for DFI – Annex B

Curraghinalt and Pollanroe Burns: Note on DGL survey work relating to fisheries habitat and wider aquatic/terrestrial ecology

23 February 2021

DGL has undertaken the following surveys within the vicinity of the Pollanroe Burn and Curraghinalt Burn in relation to the fisheries habitat and wider aquatic/terrestrial ecology:

The following reports deal with both watercourses:

- Fisheries Assessment (2013) (referenced at Appendix C8 (Annex L) of ES - 2017).
- Fisheries and River Habitat Assessment (2015) (Appendix C8 (Annex L) of ES - 2017).
- Biological Water Quality Monitoring (2015-2020) (Appendix C8 (Annex P) of ES 2017 and Appendix 02 of Appendix C8 to 2nd ES Addendum 2019).
- Surface Water Baseline Report (2020) (Appendix C3 of the 2nd addendum).

The following additional reports deal with the Pollanroe Burn:

- Otter Survey (2015/16) (Appendix C8 (Annex G) of ES and Appendix 01 of Appendix C8 to 2nd ES Addendum 2019).
- Phase 1 Habitat Survey and Phase 2 Vegetation Survey (2015/16) (Appendix C8 (Annex C) of ES).
- Fluvial Geomorphology Survey (2016) (Appendix C1 of ES).

The following additional report deals with the Curraghinalt Burn:

- Ecological Assessment of Flora and Fauna (2012) (submitted with planning application for exploration activities in 2013).

Key conclusions from each report (in date order) are set out below.

1. Ecological Assessment of Flora and Fauna (2012) (Curraghinalt)

The Curraghinalt valley was surveyed and detailed Target Notes (TN) and photographs were taken. The Curraghinalt Burn was noted to be a small and shallow stream with its headwaters taking water from the moorland area down the steep valley side before joining the Owenkillew River (TN5) and that Water levels in the burn fluctuate widely and can rapidly rise during and immediately after rainfall events.



Curraghinalt Burn TN5 Photograph

2. Fisheries Assessment (2012 to 2013) (Curraghinalt and Pollanroe)

13 km of the Owenkillew River between Glenhull Bridge to Gortin was surveyed and 9.9 km of the Owenreagh River from Greencastle to the confluence with the Owenkillew was surveyed.

The fisheries habitat survey undertaken was based on the Life Cycle Unit Method (Page 16, Section 6.2) and the detailed fisheries habitat assessment did not identify the Pollanroe Burn (Page 8, Figure 6: River Section 6) nor the Curraghinalt Burn (Page 8, Figure 6: River Section 2b) as being suitable for salmonid fish.

3. Fisheries and River Habitat Assessment (2015) (Curraghinalt and Pollanroe)

SLR conducted a desk-based review in June 2015 of the existing fisheries status of the Owenkillew and Owenreagh catchments (Page 4, Section 2.2). This review was supported by previous studies undertaken within the catchment (Page 8, Table 1) and via Loughs Agency publications. The 2015 survey re-assessed certain sections previously assessed to establish if any changes in baseline conditions had occurred since the previous survey in 2013. The Pollanroe Burn and Curraghinalt Burn were screened out from further assessment due to their general unsuitability for salmonids and it was considered that they would not be subject to any detailed fisheries habitat assessment but would be assessed on site as part of other ecological fieldwork, i.e. Phase I Habitat Survey (Page 4, Section 2.2, Para 4). A total length of 30.7 km of river channel has been subject to fisheries and river habitat assessment between 2012 and 2015.

4. Otter Survey (2015 to 2016) (Pollanroe).

A detailed otter survey of the Pollanroe Burn was carried out on 28th April 2015 and re-surveyed on 16th March 2016 (Page 2, Section 2.3) and again in 2018. The length of the Pollanroe Burn was walked as part of this assessment. The key observation from this survey was that the Pollanroe Burn does not appear to support any fish species based on the field observations made as part of the otter survey, and other surveys carried out on the Pollanroe Burn as part of the wider ecological baseline e.g. river macroinvertebrate sampling (Page 9, Section 3.2.3, Para 2).

5. Phase 1 Habitat Survey & Phase 2 Vegetation Survey (2015/16) (Pollanroe)

The Pollanroe valley was surveyed and detailed Target Notes (TN) and photographs were taken in relation to the Pollanroe Burn (Page 16, Section 3.3.5). The relevant extracts are below:

Target Note 132 (Appendix 01, Page 144) describes the Pollanroe Burn as follows:

Section of the Pollanroe Burn with a mean channel width of 1m at normal water levels and substrate consisting of cobbles (90%) and gravels (10%) with ochre visible. The channel supports no vegetation with the banks dominated by grassland communities forming an extension to the adjacent fields.

Target Note 133 (Appendix 01, Page 145) describes the Pollanroe Burn as follows:

Section of the Pollanroe Burn that has a mean channel width 1.5m and substrate consisting of cobbles (90%) and gravels (10%) that flows through a steep ravine with some vertical cliff faces before emerging at TN39. The ravine supports dense willow dominated scrub at its northern

end that grades into an ash dominated woodland with a good diversity of ground and field species many of which are ancient woodland indicator species.

Target Note 134 (Appendix 01, Page 147) describes the Pollanroe Burn as follows:

A small stream with a mean channel width of 1m at normal water levels and a substrate comprised of cobbles (80%), gravels (10%) and silt (10%). The channel is largely devoid of vegetation except for a small stand of lesser spearwort. The banks are dominated by hedgerows.

6. Fluvial Geomorphology Survey (2016) (Pollanroe)

The Pollanroe Burn was surveyed upstream from the confluence with the Owenreagh River on the 22nd January 2016 (Page 29, Section 2) and the report contains the following photographs.



Page 31 Photograph 5 (looking downstream at the confluence with the Owenreagh River)



Page 31 Photograph 6

7. Biological Water Quality Monitoring (2015-2020) (Curraghinalt and Pollanroe)

The river invertebrate sampling location for the Curraghinalt Burn (SLR-Ok06) is in the Owenkillew River downstream of confluence of Curraghinalt Burn (Page 2, Section 2.1, Table 1). The selection of this site is because the substrate, water depth and habitat within the Curraghinalt Burn is unsuitable to be sampled via a standard biologist's kick-sample net.

The following photograph taken during the River Habitat surveys in 2020 shows the Curraghinalt Burn flowing into the Owenkillew River and the height difference between the bed of the burn and the Owenkillew River is circa 2m.



Confluence of the Curraghinalt Burn with the Owenkillew River

The river invertebrate sampling location for the Pollanroe Burn (SLR-Or04) is upstream of the Pollanroe Bridge (Page 2, Section 2.1, Table 1). It is a 1m wide section of watercourse consisting of a series of riffles and a consolidated bed of cobble 60%, gravels 30% and sand 10%. The site has a mean depth of 20cm. Ochre is evident, but the levels vary considerably. The site supports no aquatic or marginal vegetation (Page 9, Table 4: Description of Sampling Sites).



Pollanroe Burn looking downstream to Pollanroe Bridge

8. Surface Water Baseline Report (2020)(Curraghinalt and Pollanroe

This report provides an update to the original project baseline report in the ES and covers flow monitoring for the period from September 2016 to end January 2020 (Page 1, Section 1, Para 2).

There are two sampling locations along the Curraghinalt Burn: SW02 located in the upstream stretch and SW04 located in the downstream stretch, below the outfall pipe from the existing water treatment plant (Page 74, Section 10.5, Para 1).

There are two sampling locations along the Pollanroe Burn: SWN05/SW25 located at the Pollanroe Bridge and SWN08/SW28 located upstream of the bridge within the proposed infrastructure area (Page 128, Section 12.7, Para 2).

Surface water quality summaries for dissolved metals are given in the Curraghinalt Burn (Page 78) and Pollanroe Burn (page 131). These demonstrate that in the majority of cases, concentrations of metals are below PGVs; however, Iron exceeds the PGV in the Curraghinalt Burn and Pollanroe Burn. These levels, along with the observations of iron ochre in both burns demonstrates that the water is unsuitable for salmonid fish.

In additions there is data in respect of flow. Flow monitoring station FLO1 is positioned on the upstream face of Atty Bridge, on the Curraghinalt Burn which is described as highly mobile with evidence of small and large rocks/boulders moving down the watercourse between site visits (Page 7, Section 3.1, Para 1)

Flow monitoring station FLO13 is located on the upstream face of Camcosy Road bridge on the Pollanroe Burn (Page 35, Section 3.1, Para 1).

The Pollanroe Burn data indicates that:

- I. The Pollanroe Burn is 'flashy' in nature and responds quickly to rainfall events.
- II. During high flow periods water velocities would be expected to be high; at least 1 to 2 m/s.
- III. After rainfall flows and water levels within the Pollanroe rapidly fall with depths <0.1m common for long periods in the winter, as shown by gauged data and site observations.
- IV. depths in the key salmonid fish spawning months (November to January) are regularly below 0.1m. This observation is supported by the 2016 Fluvial Geomorphology Survey (see above) and the bed of the Pollanroe Burn can be clearly seen within the site audit photographs.
- V. The alluvial fan formed has elevated the bed level of the Pollanroe Burn significantly above the Owenreagh River to the extent that there is a minimum water level difference at the confluence between the river and the burn of 1m.
- VI. The 'perched' nature of the Pollanroe Burn above the Owenreagh River coupled with the shallow nature of the Pollanroe Burn (water depth circa 0.05 to 0.1 m), indicates a constant barrier to fish migration into the Pollanroe Burn from the Owenreagh River.

The Curraghinalt Burn data indicates that:

- I. The Curraghinalt Burn is 'flashy' in nature and responds quickly to rainfall events.
- II. During high flow periods water velocities would be expected to be high; at least 2 m/s.
- III. After rainfall flows and water levels within the Curraghinalt rapidly fall with depths <0.1m common for long periods in the winter, as shown by gauged data and site observations.
- IV. The 'perched' nature of the Curraghinalt Burn above the Owenkillew River (2m) coupled with the shallow nature of the Curraghinalt Burn (water depth circa 0.1 m), indicates that there is a constant barrier to fish migration into the Curraghinalt Burn from the Owenkillew River.

NIEA RED Water Management Unit – SOC input for DFI – Annex C

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8991: Curraghinalt Mine

Habitats Regulations Assessment Process

Ref: Water Quality Matters

Introduction

1. This briefing note addresses matters concerning discharge criteria proposed in relation to the Curraghinalt and Pollanroe burns. Specifically, this note addresses the application of the tests of the Habitats Regulations when determining the acceptability of the proposed discharge criteria.
2. The note considers the application of the relevant tests of the Habitats Regulations, with reference to relevant case law where appropriate.

Assessment process

3. The protection afforded to SPAs and SACs derives from Article 6 of the Habitats Directive. The requirements of the Habitats Directive are transposed into Northern Ireland domestic legislation through The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).
4. Article 6(2) of the Habitats Regulations requires member states to take appropriate steps to avoid the deterioration of natural habitats and disturbance of species for which the sites have been designated, in so far as the disturbance could be significant in relation to the objectives of the Directive. Article 6(3) and Article 6(4) together set out a process known as Habitat Regulations Assessment ("HRA"). HRA comprises between one and five steps, depending on the outcome of assessments for each project.
5. The five stages require the decision-maker to:
 1. Assess whether there would be a Likely Significant Effect ("LSE") on any European site (Step 1); and, if such an effect cannot be excluded,
 2. Determine whether there would be an adverse effect on the integrity of any European site (Step 2); and, if so,
 3. Consider whether there are any feasible alternative solutions that would be less damaging or avoid damage to the site (Step 3); and, if not,
 4. Determine whether there are Imperative Reasons of Overriding Public Interest ("IROPI") why the development should proceed (Step 4); and, if so,

5. Consider whether all necessary compensatory measures have been secured to fully compensate for the negative effects of the proposal. The compensatory measures must not have a negative effect on the national network of European sites as a whole (Step 5).
6. Under the Habitats Regulations, Competent Authorities have a duty to ensure that all the activities they regulate have no adverse effect on the integrity of any of the European sites. Regulation 43 of the Habitats Regulations 1995 (as amended) is concerned with stages 1 and 2 (set out above). Regulation 43 requires that:

"43(1) A competent authority before deciding to undertake, or give any consent, permission or other authorisation for a plan or project, which: -

- a) is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects) and*
- b) is not directly connected with or necessary for the management of the site,*

shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

...

43(5) In light of the conclusions of the assessment, and subject to regulation 44, the authority shall agree to a plan or project only after having ascertained that it will not adversely affect the integrity of the European site.

...

43(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority shall have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given.

..."

7. Consistent with Regulation 43, the first test is to determine whether the plan / project is likely to have a significant effect on the European site, the second test (if applicable) is to determine through the undertaking of an Appropriate Assessment, whether the plan / project will affect the integrity of the European site.
8. In view of the above, the full HRA process can be viewed as having three key stages:
 1. **Screening;**
 2. **Appropriate Assessment;** and
 3. **Derogation:** This comprises Steps 3 – 5 above. If an appropriate assessment is undertaken and a proposed development fails to meet the

integrity test then permission can only be granted if it passes all three of the legal tests that are required to qualify for a derogation: i.e.

- (i) no feasible alternative solutions;
- (ii) IROPI; and
- (iii) delivery of any necessary compensatory measures.

9. The table below sets out the main stages of assessment together with relevant notes, and is provided as a guide to assist the HRA process. Some key concepts associated with the relevant legal tests have been clarified through case law and reference is made to key case law in the table below.

HRA Stage	Notes
Screening / LSE	
<p><i>Is the project likely to have a significant effect on the designated site, alone or in combination with other plans/projects?</i></p> <p>If No, consent / authorisation can be given.</p> <p>If yes, or there is a lack of certainty, proceed to stage 2 (appropriate assessment).</p>	<p>This is a very broad sieving stage which effectively poses the question “do we need to look further?” having established the nature of the proposals and the possible interaction with the designated site and its qualifying interest features.</p> <p>Mitigation measures cannot be taken into consideration at the Screening / LSE stage. Ref case (C-323/17) [2018]</p> <p>It is important to consider the proposal’s integral design features and characteristics, such as location, layout and timing.</p> <p>If the risk of a significant effect cannot be ruled out, then an appropriate assessment is needed.</p> <p>Authorities should only consider real risk, and not hypothetical risk. Ref case [2009] EWCA Civ 1061</p>
Appropriate Assessment	
<p><i>Are there any implications for the designated site’s Conservation Objectives?</i></p> <p>If No, consent / authorisation can be given.</p> <p>If Yes, or there is a lack of certainty - <i>Can it be ascertained beyond reasonable scientific doubt, that the proposal will not adversely affect the integrity of the site?</i></p>	<p>Integrity is defined¹ as the coherent sum of the site’s ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and / or populations of the species for which the site is designated.</p> <p>Effects must be identified in the light of the best scientific knowledge in the field and conclusions must be based upon objective information. Ref Case C-127/02.</p>

¹ Definition taken from: Managing Natura 2000 Sites – The provisions of Article 6 of the habitats Directive 92/43/EEC (2019)

<p>Where it cannot be ascertained beyond reasonable scientific doubt, that the proposal will not adversely affect the integrity of the designated site, then the appropriate assessment test is failed and the Derogation tests (below) will apply where consent or authorisation remains intended.</p>	<p>Absolute certainty is not required, but the decision taker must be confident beyond reasonable scientific doubt that no adverse effect on Integrity arises. Ref cases [2015] UKSC 52 [2015] 1 WLR 3710 and C-258/11.</p> <p>In combination effects should be considered.</p> <p>An appropriate assessment must catalogue the entirety of habitat types and species for which a site is protected. It must also identify and examine the implications of the project for those species present on the protected site, (but which are not interest features), and the implications for habitat types and species to be found outside the boundaries of the protected site, provided that those implications are liable to affect the Conservation Objectives. Ref Case C-461/17</p> <p>A precautionary approach to assessment should be followed. Ref case C-258/11. However, the risk must be real and not fanciful or hypothetical. Ref Cases [2010] EWCA Civ 608 and [2009] EWCA Civ 1061.</p> <p>At this stage of the assessment, any proposed mitigation or avoidance measures should be taken into account.</p> <p>Where necessary / appropriate, consideration should be given to whether the application of conditions or other restrictions would enable the proposal to pass the integrity test.</p>
Derogation	
<p><i>Are there alternative solutions?</i></p> <p>If Yes, revised project proposals should be subject to a further appropriate assessment.</p> <p>If No, assess whether a priority habitat or species on the site be adversely affected by the proposal.</p> <ul style="list-style-type: none"> - If No, are there <i>IROPI</i>, which in this instance may include those of a social or economic nature? 	<p>Before deciding if reasons constitute IROPI, the Department shall consult the following, and have regard to their opinion:</p> <ol style="list-style-type: none"> a) the Joint Nature Conservation Committee; b) the Secretary of State; c) the Scottish Ministers; d) the Welsh Ministers; and e) any other person the Department considers appropriate.

<p>- If Yes, are there IROPI relating to human health, public safety or important environmental benefits, or are there other reasons which the Department consider to be IROPI?</p> <p>Where in accordance with the above, there are determined to be IROPI, authorisation may be granted subject to the securing of any necessary compensation measures which ensure that the overall coherence of the European sites network is protected.</p>	
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10. In applying the legal tests, the Competent Authority (under the Habitats Regulations) will need to:

- a) Understand the qualifying interest features of the relevant designated site (see Appendix 1, para 40).
- b) Understand the formal Conservation Objectives for the relevant designated site (see Appendix 1 para 41).
- c) Understand any supporting information relating to the formal conservation objectives, such as feature condition objectives / targets (see Appendix 1 paragraphs 47 and 48, and Section 8 of 2017 Conservation Objectives document at Annex 4 of Appendix 1).
- d) Have regard to relevant baseline information and seek information regarding existing threats or pressures associated with the designated site (see summary of 2021 Loughs Agency survey data at Appendix 1 paragraphs 74 – 78 and 93 – 100, and Section 5 of the updated project sHRA 2020. Also see for example Section 11 of annexed 2017 Conservation Objectives document).
- e) Consider all possible effects of the proposal, at every phase, on the qualifying interest features of the site. Consider impacts that are direct and indirect, temporary and permanent (see Section 5 of the updated project sHRA 2020 and also Appendix 1 for further context).
- f) Consider possible in combination effects with reference to other relevant plans or projects (see Section 5 of the updated project sHRA 2020).
- g) Use the best available (objective and scientific) information to make confident decisions.
- h) Consider the advice of the relevant Statutory Nature Conservation Body.
- i) Present a detailed written record of the HRA which gives clear justifications for decisions and precise conclusions.

APPENDIX 1

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8991: Curraghinalt Mine

Water Quality Matters

Appendix 1

Executive Summary

1. This briefing note has been prepared by Ecology Solutions Ltd on behalf of Dalradian Gold Limited. It has been specifically prepared in order to highlight and summarise information which is required to address the application of the tests associated with Habitats Regulations, as relevant to the proposed discharge criteria.
2. The decision as to whether the integrity of the Owenkillew River Special Area of Conservation (SAC) is adversely affected must be focussed upon the qualifying interest features of the SAC and its formal conservation objectives. Only where the conservation objectives of the SAC are undermined could an adverse effect on integrity arise.
3. Importantly, when applying the relevant legal tests and considering whether it would be appropriate to invoke the precautionary principle, in line with jurisprudence, if there is an assertion of a risk, the party asserting must back that up with credible objective evidence. Such decisions must not aim at zero risk and there must be credible evidence that there is a real, rather than a hypothetical, risk.
4. The formal Conservation Objectives for the SAC require the maintenance or restoration (where appropriate) of the qualifying interest features to favourable condition. SAC (interest feature) component condition objectives support the formal Conservation Objectives and describe a series of specific targets. What is required, is the maintenance of the populations and maintenance of water quality at favourable condition. Significantly, case law has established that the enhancement or improvement of baseline conditions, be that population expansion or improvements in water quality, are expressly not required under the relevant component condition objectives by an applicant.
5. In assessing implications for the qualifying interest features of the SAC, it is necessary to assess both direct and indirect effects and also, to look beyond the boundary of the designated site itself. The legal test however, remains focussed upon the Conservation Objectives for the designated site.

6. Insofar as water quality matters are concerned, the focus is upon implications for aquatic species / habitats; Fresh Water Pearl Mussel (FWPM), Otter, Atlantic Salmon, and 'Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation'.
7. Curraghinalt Burn and Pollanroe Burn are not recognised for their value to FWPM. Considerations relevant to this species are focused upon any effects which arise at the confluence between the Owenkillew River and the Curraghinalt burn and / or Owenreagh River. Thus, insofar as FWPM are concerned, the end of pipe discharge effects within the two burns is not an important consideration, when applying the relevant tests of the Habitats Regulations. The same is true for 'Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation'.
8. The detailed suite of survey / monitoring work demonstrates consistent presence of Otter within the Owenkillew and Owenreagh rivers. However, in relation to the burns, the detailed survey work demonstrates only sporadic evidence for use of Pollanroe Burn. It remains the conclusion that the minor tributaries, including the Curraghinalt and Pollanroe burns are not important for the local Otter population.
9. Regarding Atlantic Salmon, the recent data obtained by the Loughs Agency does not support the proposition that Atlantic Salmon use the Curraghinalt Burn. Loughs Agency survey results do show use of the Pollanroe Burn by both Atlantic Salmon and Brown Trout. The data does not support the proposition that the burn is used by breeding (spawning) Atlantic Salmon. It does show that a breeding population of Brown Trout are present, however this species is not a qualifying interest feature of the SAC.
10. In relation to Total Suspended Solids (TSS), a target value of 10mg/l is considered protective of the FWPM interest feature (with reference to unpublished NIEA guidance from 2013 regarding FWPM in the Owenkillew catchment). For Atlantic Salmon, any application of a comparable target would only be of relevance to spawning Atlantic Salmon. Positive evidence exists in relation to no spawning Atlantic Salmon being present within either burn. As previously agreed with NIEA NED, a discharge limit of 50mg/l within the Curraghinalt burn is protective of the FWPM interest feature within the SAC and this would equally apply in the case of Atlantic Salmon.
11. Significantly biological water quality in the Owenkillew and Owenreagh rivers has consistently been recorded as being of 'Good' or 'High' quality and this is in the context of existing (consented) discharges from the mine site into the Owenkillew via the Curraghinalt Burn.
12. In view of the objective evidence, it is concluded that the discharge criteria as proposed, are considered to be protective of the aquatic environment associated with the Owenreagh River ASSI and Owenkillew River SAC. Further, it is concluded that the proposed discharges will not give rise to an adverse effect on the integrity of the SAC.

Introduction

13. This briefing note addresses matters concerning discharge criteria proposed in relation to the Curraghinalt and Pollanroe burns. Specifically, this note highlights and summarises key information required to addresses the application of the tests of the Habitats Regulations when determining the acceptability of the proposed discharge criteria.
14. Where appropriate, reference is made to detailed survey work undertaken by the Loughs Agency in 2021 and other relevant baseline information. Indeed, it is primarily in the context of the Loughs Agency 2021 survey data (discussed further below) that this note has been produced and it should be noted that other detailed baseline information is relevant to the overall HRA process, such as that cited within the updated project sHRA (2020).
15. Before discussing the results and relevance of the Loughs Agency 2021 survey data and other matters concerning baseline data, this note sets out guidance and case law of direct relevance to the application of the legal tests of the Habitats Regulations in this instance. Annexed to this note are the following documents:
 1. A copy of the document titled "Communication from the Commission on the Precautionary Principle" (2000), published by the European Commission.
 2. Copy of [2009] EWCA Civ 1061.
 3. Copy of [2015] UKSC 52, [2015] 1 WLR 3710.
 4. Copy of the Owenkillow River SAC Conservation Objectives document (2017).
 5. Copy of guidance document WAT-SG-90 published by SEPA.
 6. Extracts from: Owenkillow, Owenreagh East and Tributaries Catchment Status Report (2010).
 7. Extracts from Owenkillow River, Owenreagh East and Tributaries Catchment Status Reports, 2011, 2015 and 2018.
 8. Annotated map of the Owenkillow River SAC showing proposed discharge locations.

Discussion on Key Relevant Guidance and Case Law

Defining "integrity"

16. The Managing Natura 2000 guidance document¹ contains helpful guidance as to the meaning of "integrity" for the purpose of addressing the provision of Article 6 of the Habitats Directive. It states at section 4.6.4 that:

"The 'integrity of the site' can be usefully defined as the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and / or populations of the species for which the site is designated."
17. The text box at the foot of page 47 of the Managing Natura 2000 guidance document goes on to state:

¹ Managing Natura 2000 Sites – The provisions of Article 6 of the habitats Directive 92/43/EEC (2019)

"The integrity of the site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives."

18. Section 4.6.4 is also helpful in defining the types of effect which could constitute an adverse effect on integrity. It is stated:

"It is clear from the context and from the purpose of the Directive that the 'integrity of a site' relates to the site's conservation objectives (see point 4.6.3 above). For example, it is possible that a plan or project will adversely affect the site only in a visual sense or only affect habitat types or species other than those listed in Annex I or Annex II for which the site has been designated. In such cases, the effects do not amount to an adverse effect for purposes of Article 6(3).

In other words, if none of the habitat types or species for which the site has been designated is significantly affected then the site's integrity cannot be considered to be adversely affected.

However, if just one of them is significantly affected, taking into account the site's conservation objectives, then the site integrity is necessarily adversely affected."

19. It is further stated that:

"The integrity of the site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives."

20. It is also necessary to note the Holohan judgment. That judgment emphasises that it may be necessary to look wider than the listed interest features when assessing against integrity. In that case the ECJ stated:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site."

[emphasis added]

21. This judgment underlines the importance of the assessment and ultimate judgment being related to the conservation objectives of the site.
22. It is important to recognise that the species for which sites are protected (at any level) do not recognise arbitrary boundaries and for many species / groups they

will be reliant on different habitats or areas, in parts of their natural range for different stages of their life cycle, or at different times of year (e.g. as a response to seasonal climatic changes). A protected site may serve a 'protective function' for only part, or all of a species life cycle. It remains however, necessary to examine, with reference to available scientific data the quality and importance of those habitats within the natural range of the species (e.g. those outside of the protected site) when forming judgments on whether potential implications are liable to affect the conservation objectives of the site.

Conservation status

23. The term "conservation status of a species" is defined within the Habitats Directive at Article 1(i):

"conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2:

The conservation status will be taken as 'favourable' when:

- *Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
- *The natural range of the species is neither being reduced nor is it likely to be reduced for the foreseeable future, and*
- *There is and will probably continue to be a sufficiently large habitat to maintain its populations on a long-term basis."*

24. In the current instance, it is necessary to have regard to the extent to which affects arising from the proposed discharges could have a real (as opposed to hypothetical) adverse effect on the SAC population of Atlantic Salmon (among other features). On the evidence, the burns cannot be considered as important watercourses within the range of the Atlantic Salmon population and the evidence does not point to impacts arising on habitat of importance for the breeding cycle of Atlantic Salmon. Whilst 'conservation status' in the context of the above guidance goes further than considerations relating to the specific focus of the proposals, it can be concluded that the proposals would not fetter the ability of the Atlantic Salmon population to reproduce and maintain itself as a viable component of its natural habitats. Nor would the proposals reduce the natural range of the species (note this interpreted on a broader geographical scale, as opposed to narrower, site-based considerations) and sufficiently large areas of suitable habitat are considered to exist to maintain the population. The presence of Atlantic Salmon within the burns is discussed further below.

Objectives to improve baseline conditions

25. In this instance, when undertaking the HRA, specific consideration should be given to SAC component condition objectives relating to water quality issues. This is a matter discussed in detail further below in relation to the SAC Conservation Objectives and individual qualifying interest features of the SAC. This section of the note is concerned specifically with how a desire to improve baseline conditions should be interpreted in the context of the application of the legal tests of the Habitats Regulations.

26. Useful guidance is provided within Mr Justice Jay's judgment in R (Wyatt) v Fareham BC [2021] EWHC 1434 (Admin). In broad terms that case centred upon the acceptability (in HRA terms) of the use of a (Natural England approved) methodology for assessing project level impacts of nitrogen discharges to an SPA / SAC / Ramsar site. The methodology facilitates a nitrogen budget calculation, and where nitrogen neutrality can be demonstrated, a conclusion of no adverse effect on integrity can be arrived at. This is in the context of a baseline condition which is viewed as unfavourable / deteriorating. At paragraph 42 of the judgment, the Court held:

*“Self-evidently, the concept of neutrality indicates that the ambition of the Advice Note **is limited to not making things worse**. Mr Jones latched onto this apparent limitation and **forcefully submitted that it is flawed for that very reason**, not least because the environmental condition of some of the protected areas is deteriorating. Article 6(2) of the Habitats Directive requires member states (and now the United Kingdom through a different legal pathway) to take appropriate measures to avoid any deterioration. As was pointed out in the Dutch Nitrogen case, the perpetuation of an existing activity is capable of falling within article 6(2). However, I agree with Mr Mould that Mr Jones' submission rather misses the point. Competent authorities are precluded by the terms of the Habitats Directive from sanctioning development which is environmentally harmful. No doubt Natural England and other statutory bodies are taking other steps to avoid further deterioration for the purposes of article 6(2), all of which are outside the scope of this application for judicial review. **The authorisation of an individual project which is no more than environmentally neutral is not inimical to the language and intentment of the Habitats Directive and/or the Habitats Regulations.**”*

(emphasis added)

27. Mr Justice Jay considered the proposition that the determining authority was under an obligation to 'make things better' (deliver improved water quality). His conclusions include an acceptance that the issue of deterioration is wider than the narrow focus of one project and that statutory bodies will be taking relevant steps where necessary to address issues. Significantly and importantly, Mr Justice Jay recognises that it is '*environmentally harmful*' developments which are precluded by the terms of the Habitats Directive. The Court concluded that it is not for the individual project to deliver improvements to the baseline, but rather it is a necessity to demonstrate that the project will not make things worse.

Application of the “Precautionary Principle”

28. Relevant case law makes it clear that in applying the relevant tests of the Habitats Regulations, there is a need for certainty (or the absence of reasonable scientific doubt)²³, both regarding the nature and extent of predicted effects on integrity and in relation to the effectiveness of any preventative measures relied upon. Furthermore, enshrined within the Habitats Directive and Regulations (though not explicitly set out in either), based upon article 191 of the Treaty on the Functioning of the European Union, is the need to apply the Precautionary Principle when assessing the risks posed to the integrity of the site/s. If a risk of significant effect to the integrity of a site cannot be excluded on the basis of objective information,

² C-127/02: Waddenzee Judgment (2004)

³ C-258/11 Sweetman Case (2011)

then application of the precautionary principle requires no consent to be given for such a project. The Precautionary Principle is not however without limits. It cannot be based on a purely hypothetical approach founded simply on conjecture. A preventive measure may be taken only if the risk appears nevertheless to be adequately backed up by scientific data available at the time the measure is taken.

29. The document titled "Communication from the Commission on the Precautionary Principle" (2000) provides useful guidance in relation to the application of the Precautionary Principle in relation to European sites issues. Paragraph 6 sets out the six key matters for consideration when applying the Precautionary Principle. Paragraph 6 states:

"Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- *proportional to the chosen level of protection,*
- *non-discriminatory in their application,*
- *consistent with similar measures already taken,*
- *based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis),*
- *subject to review, in the light of new scientific data, and*
- *capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment."*

30. Under these bulleted points, the guidance gives specific definitions in relation to each of the above at pages 4 and 5, with further detail provided within section 6 (see Annex 1 of this note).

31. In accordance with the Communication from the Commission that, when deemed necessary, risk reduction measures should be proportionate and must not aim at zero risk. Section 6.3.1 of the Communication from the Commission states that:

"The measures envisaged must make it possible to achieve the appropriate level of protection. Measures based on the precautionary principle must not be disproportionate to the desired level of protection and must not aim at zero risk, something which rarely exists. However, in certain cases, an incomplete assessment of the risk may considerably limit the number of options available to the risk managers."

(emphasis added)

32. With reference to not aiming "at zero risk", the judgement of the Court of Appeal in Morge vs Hampshire County Council [2010] EWCA Civ 608 is relevant (see Annex 3). Lord Justice Ward considered what level of disturbance was required in addressing Article 12(1)(b), and at paragraph 35 he described the level or risk of threatened habitat and species stating that:

"... It must be certain, that is to say, identifiable. It must be real, not fanciful."

33. This means that for the level of risk to be real and identifiable, it must be based upon objective evidence to substantiate the risk.

34. The judgment in the case of Boggis v Natural England⁴ (see Annex 2) also assists in determining when it would be appropriate to invoke the precautionary principle and conclude that the objective information needed, is simply not available.
35. Paragraph 37 of the judgment states:

“...a claimant who alleges that there was a risk which should have been considered by the authorising authority so that it could decide whether that risk could be “excluded on the basis of objective information”, must produce credible evidence that there was a real, rather than a hypothetical, risk which should have been considered.”

(emphasis added)⁵

36. Also of relevance is the case of R (Champion) v. North Norfolk District Council⁶ (see Annex 3), where at paragraph 41, Lord Carnwath makes it clear that Article 6(3) does not require absolute certainty of no adverse effect and it is ultimately an issue of judgment for the decision maker. It is stated:

“As the court itself indicated in Waddenzee the context implies a high standard of investigation. However, as Advocate General Kokott said in Waddenzee [2005] All ER (EC) 353, para 107:

“The necessary certainty cannot be construed as meaning absolute certainty since that is almost impossible to attain. Instead, it is clear from the second sentence of article 6(3) of the Habitats Directive that the competent authorities must take a decision having assessed all the relevant information which is set out in particular in the appropriate assessment. The conclusion of this assessment is, of necessity, subjective in nature. Therefore, the competent authorities can, from their point of view, be certain that there will be no adverse effects even though, from an objective point of view, there is no absolute certainty”

In short, no special procedure is prescribed, and, while a high standard of investigation is demanded, the issue ultimately rests on the judgment of the authority.”

37. It is important to recognise that the species for which sites are protected (at any level) do not recognise arbitrary boundaries and for many species / groups they will be reliant on different habitats or areas, in parts of their natural range for different stages of their life cycle, or at different times of year (e.g. as a response to seasonal climatic changes). A protected site may serve a ‘protective function’ for only part, or all of a species life cycle.
38. Regarding European designated sites, Article 4.1 of the Habitats Directive is of direct relevance on this point. It states:

“For animal species ranging over wide areas these sites shall correspond to the places within the natural range of such species

⁴ [2009] EWCA Civ 1061

⁵ And cited with approval In re Blackwood [2018] NIQB 87, para [65]

⁶ [2015] UKSC 52, [2015] 1 WLR 3710,

which present the physical or biological factors essential to their life and reproduction. For aquatic species which range over wide areas, such sites will be proposed only where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction.

(emphasis added)

39. The presence of a species within a site and the population number at a point in time is an important consideration in determining the quality and importance of the site to the species in question. However, in real terms, value judgments on site quality are made in relation to the contribution the site (e.g. SAC) makes to the favourable conservation status of the species generally. A reduction in numbers of a qualifying or other (e.g. typical) species within an SAC may not jeopardise the contribution the SAC makes to the sustainability of the species more generally.

Information relevant to the project HRA

Owenkillew River SAC Conservation Objectives

40. The current formal Conservation Objectives for the SAC (published 27th July 2017) are included at Annex 4. Table 1 at Section 6 of the Conservation Objectives document confirms that the qualifying interest features for the SAC are:

- Fresh Water Pearl Mussel *Margaritifera margaritifera*
- Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitricho-Batrachion* vegetation
- Old Sessile Oak woods with *Ilex* and *Blechnum* in the British Isles
- Bog Woodland
- Otter *Lutra lutra*
- Atlantic Salmon *Salmo salar*

41. With reference to section 7 of the document included at Annex 4, the Conservation Objectives are as follows:

“The Conservation Objective for this site is:

To maintain (or restore where appropriate) the

- *Fresh Water Pearl Mussel Margaritifera margaritifera*
- *Water courses of plain to montane levels with the Ranunculus fluitans and Callitricho-Batrachion vegetation*
- *Old Sessile Oak woods with Ilex and Blechnum in the British Isles*
- *Bog Woodland*
- *Otter Lutra lutra*
- *Atlantic Salmon Salmo salar*

to favourable condition.”

42. It is stated within the formal Conservation Objectives document, that Brook Lamprey *Lampetra planeri* is listed as a species which is present, but not at a level which merits listing as an SAC qualifying interest feature.
43. Section 6 of the document included at Annex 4 describes the SAC selection features with reference to the 'Global Status' of each feature. It is stated that:
- "There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features."*
44. FWPM, Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation and Old Sessile Oak woods are all listed as being of global status B. In defining global status B, it is stated:
- "Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites"*.
45. Bog Woodland, Otter and Atlantic Salmon are cited as being of global status C. In defining global status C, it is stated:
- "Examples of the habitat which are of at least national interest (i.e. usually above the threshold for SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected."*
46. Insofar as matters concern Atlantic Salmon (and also Otter and Bog Woodland), it is necessary to assess implications for these features when applying the tests of the Habitats Regulations. It is however to be noted that these are not primary reason for SACs being selected.
47. At Section 7 of the document included at Annex 4, a series of component objectives are defined. In the case of Salmon, these are defined as:
- *Maintain and if possible, expand existing population numbers and distribution*
 - *Maintain and where possible, enhance the extent and quality of suitable Salmon habitat, in particular the chemical and biological quality of the water.*
48. These second-tier objectives can be viewed as guiding principles to achieving the overarching formal Conservation Objectives and demonstrating 'favourable condition'. Maintenance of the population numbers and their distribution, and maintenance of the extent and quality of suitable habitat (including the chemical and biological quality of the water) is what is actually required to meet these objectives. Enhancement or improvement of baseline conditions, be that population expansion or improvements in water quality are desirable outcomes, but these are not expressly required under the objectives. This is plainly clear by virtue of the wording "where possible". This fits squarely with Mr Justice Jays judgment in relation to case R (Wyatt) v Fareham BC, discussed above.

Broad points

49. Insofar as water quality matters are concerned, the focus is upon implications for aquatic species / habitats. Implications for Sessile Oak woods and Bog Woodland can be simply screened out when addressing Regulation 43 (1)⁷.
50. In assessing implications for the qualifying interest features of the SAC, it is necessary to assess both direct and indirect effects and also, to look beyond the boundary of the designated site itself. Regarding matters concerning the boundary of a designated site, it is recognised that certain (faunal) interest features have large 'home ranges' and may be dependent upon habitat spread over a very large area, significantly beyond the boundary of a designated site. This would include, in particular, certain species of bird and fish. The term 'functional linkage' is often used to describe habitat which lies beyond the boundary of a designated site, on which a qualifying interest species population is dependent in order to maintain its favourable conservation status (a term which is discussed further below).
51. Functional linkage is an important consideration in the context of the proposed discharges to the two burns in this instance.
52. Curraghinalt Burn and Pollanroe Burn are not recognised for their value to FWPM. It is common ground between NIEA NED and the Applicant that the species is only relevant to the Owenkillev River. Thus, considerations relevant to this species are focused upon any effects which arise at the confluence between the Owenkillev River and the Curraghinalt burn and / or Owenreagh River. Thus, insofar as FWPM are concerned, the end of pipe discharge effects within the two burns is not an important consideration, when applying the relevant tests of the Habitats Regulations.
53. Brown Trout, which have been recorded in both burns, are not qualifying interest features of the SAC. Insofar as Otter is concerned, it is noted that the "Otter Survey, Surveillance and Evaluation Report" (2017)⁸ states that
- "Based on the survey evidence, it is considered likely that the Owenreagh River forms part of the same territory of the otters using the Owenkillev River. Otters may well use the Owenreagh more during any run of salmon as these fish are likely to be easier to catch in this river when compared to the larger Owenkillev River."*
54. Detailed Otter surveys have been undertaken (by SLR) since 2012. As stated in the 2017 Otter report⁹:
- "The smaller tributaries, including the Pollanroe Burn and un-named tributary of the Owenreagh River flowing through the proposed infrastructure site, do not appear to be used by otter with these providing negligible foraging opportunities and do not provide connective routes to any other watercourses or waterbodies. It is considered therefore that these tributaries within the study area are not important or critical to local otter population."*

⁷ As is clear from Section 5 of the 2020 updated sHRA and the cited reference to Table 15 of the 2017 Ecological Impact Assessment within the sHRA, implications from changes to water quality are considered only in relation to aquatic habitats and species.

⁸ Appendix C8 at Annex G of the 2017 ES.

⁹ Section 4.1 of Appendix C8 at Annex G of the 2017 ES

55. The detailed suite of survey / monitoring work demonstrates consistent presence of Otter within the Owenkillew and Owenreagh rivers, with (potential) holts and lie-ups as well as spraints and footprints recorded during every survey. However, only sporadic evidence exists for use of the relevant tributaries has been recorded during the course of the survey work. Prior to 2018 no evidence for the presence of Otter was recorded at the Pollanroe Burn. In 2018 survey work a single spraint was recorded close to the Pollanroe Burn Bridge and in 2019, survey work identified three spraints (of different age categories) under Pollanroe Burn Bridge. No other evidence for the presence of Otter was recorded during these surveys. In 2020, consistent with survey work undertaken in years preceding the 2018 update, no Otter evidence was recorded in 2020. Regarding the Curraghinalt Burn, an Otter spraint was recorded on rocks at the confluence with the Owenkillew River in 2015, however the burn itself is determined to be suboptimal for Otter. It remains the conclusion that the minor tributaries, including the Curraghinalt and Pollanroe burns are not important (certainly not critical) for the local Otter population.
56. Regarding Total Suspended Solids (TSS), a target value of 10mg/l is considered protective of the FWPM interest feature (with reference to unpublished NIEA guidance from 2013 regarding FWPM in the Owenkillew catchment). In relation to Atlantic Salmon, any application of a comparable target would only be of relevance to spawning Atlantic Salmon. Positive evidence exists in relation to no spawning Atlantic Salmon being present within either burn. It has previously been accepted by NIEA NED that a discharge limit of 50mg/l within the Curraghinalt burn is protective of the FWPM interest feature within the SAC (main river). This would equally apply in the case of Atlantic Salmon.
57. It is relevant to consider guidance published by the Scottish Environment Protection Agency titled; "Supporting Guidance (WAT-SG-90) Application of environmental standards in assessing risks to river and loch Natura 2000 interests" (October 2016), a copy of which is included at Annex 5. This guidance describes the process which SEPA will follow when assessing likely significant effects relating to interest features of SACs / SPAs, including Atlantic Salmon and FWPM. This document is available on the SEPA website as part of its "Guidance" resource¹⁰. Several key points arise:
- 1) Table 1(a) presents a series of step-wise tests associated with determining whether likely significant effects can be ruled out in relation to FWPM. With the exception of 'test 1' all other steps consider a situation where water quality standards are exceeded (to varying degrees) within the SAC, yet at these further steps it still remains possible to conclude no significant effect.
 - 2) Table 1(a) specifically considers (at step 6) the use of existing discharge locations (relevant to the Curraghinalt burn) and continuity in terms of the length of the mixing zone (step 7), with no likely significant effect concluded where the answer to both questions is 'yes'.
 - 3) Table 1(a) also recognises at steps 8 and 9, that an absence of suitable habitat for FWPM or positive evidence of no FWPM presence, allow a conclusion of no likely significant effect.
 - 4) In relation to outfall design (page 9) it is confirmed that improved initial mixing is encouraged in order to shorten the mixing zone length. It is stated that:

¹⁰ Following a lengthy period during which the SEPA website was not operational due to a ransomware attack, the website was 're-built' before going live again and so conscious decisions would have been made in relation to those guidance documents which were to be uploaded and made available as guidance to be relied upon.

“The mixing zone length over which environmental standards are exceeded can be shortened by maximising initial mixing. SEPA will:

- i. consider proposals to improve initial mixing where it would otherwise conclude that a discharge would be likely to have a significant effect on freshwater pearl mussels; and*
 - ii. in all cases, encourage developers to take such steps as are reasonably practical to promote rapid initial mixing of continuous discharges.”*
- 5) The quotation above, emphasises the point that localised exceedances of environmental standards can be found to be acceptable in HRA terms.
- 6) In the case of the project (discharge application) the discharge to each burn will deliver reduced point concentrations at the main rivers (e.g. the Owenkillev) when compared to a direct discharge to the main river. This is similar to the ‘initial mixing’ as actively encouraged by SEPA within its guidance.
58. Specific technical guidance on mixing zones was issued by the European Commission in 2010¹¹. Several important points arise and these are discussed below.
59. A key principle of this guidance is that that measures, compliant with best available techniques (BAT), must be taken and it is considered that the proposed Reverse Osmosis (RO) plant certainly accords with BAT, and it is also considered that the proposal to cite the discharge location outside of the main rivers themselves (SAC / ASSI and ASSI) also accords with BAT.
60. Specifically regarding mixing zones, on pages 9 and 10 of the EU guidance it is stated:
- “Restriction of the extent of the mixing zone should also be considered if the exceedance of the EQS for substance in Annex A of Directive 2008/105/EC has a negative impact on sensitive area such as a spawning area for fish. In Paragraph 5.3 this is further elaborated. The potential for, extent, degree, duration and reversibility of any adverse effects within the mixing zone (e.g. on amenity value or on any of the quality elements of 2000/60/EC (Annex V)) are key elements in the decision making process. The aim should be to limit adverse effects in the mixing zone especially any acute impact from the discharge concerned.”*
61. On page 11 of the EU guidance, it is stated:
- “The Competent Authority is responsible for the designation and development of mixing zones under Directive 2008/105/EC and will need to deliver a risk-based, proportionate approach such that all relevant factors are considered in appropriate detail.”*
62. It is considered that the proposals have a positive effect in relation to mixing (restrict the mixing zone) and are arrived at following a risk based and proportionate approach. In relation to ‘proportionality’, a guiding principle in the

¹¹ Technical Guidelines for the Identification of Mixing Zones Pursuant to art. 4(4) of the Directive 2008/105/ec, European Commission (2010)

application of the precautionary principle it is relevant to consider that a proportionate approach must not look to achieve zero risk.

63. Turning to matters concerning the Atlantic Salmon population itself, it is important to recognise the fact that the Atlantic Salmon population, for which the SAC is designated, has a huge range (including marine environments) throughout its life cycle, with significant stretches of habitat in use for different purposes (e.g. foraging, spawning, nursery). It is relevant to highlight survey and assessment work undertaken by the Loughs Agency in this regard. Included at Annex 6 are a series of plans showing Atlantic Salmon fry electrofishing data from 2010¹². Included at Annex 7 are a series of plans showing Salmonid fry electrofishing data (including data for Atlantic Salmon) from 2011, 2015, 2018¹³. These plans illustrate the following points:

- 1) The size of the Foyle Salmonid catchment, of which the Owenkillow and Owenreagh are only part;
- 2) The variations, over time, in numbers of fry sampled throughout the catchment, with losses in some river systems / specific locations, and gains in others.

64. Specifically, regarding the strength of the Atlantic Salmon population in the Foyle catchment, the 2018 Status Report states at section 2.7:

“As outlined above Atlantic salmon have a complex lifecycle which can be impacted upon by many factors. The impacts cannot always be quantified making it difficult to accurately estimate the number of returning adult salmon/grilse to our rivers each year. An analysis of cohort/age class strength throughout its lifecycle from egg to spawning adult is complicated by numerous factors. These include varying egg survival rates, differing age at smolting, marine survival rates, time spent at sea/age at spawning and number of spawning migrations made.

It is extremely difficult to infer from one life history stage or stages what the strength of any returning cohort will be. This is currently exacerbated by extremely low marine survival rates possibly as a result of altered marine food webs and oceanic prey distribution all in the context of climate change.”

65. It is also relevant to note that whilst net fisheries appear not to have operated (legally) in recent years, angling is still undertaken throughout the catchment. The 2018 Status Report states at section 2.0:

“Total declared Atlantic salmon rod catch for the Foyle and Carlingford area in 2018 was 1598. Voluntary catch and release for the Foyle and Carlingford areas was 66%.”

66. This equates to a reported release (not guaranteed survival) of 1055 Atlantic Salmon, with 543 taken.

¹² Extracts from: Owenkillow, Owenreagh East and Tributaries Catchment Status Report (2010), published by the Loughs Agency of the Foyle Carlingford and Irish Lights Commission

¹³ Extracts from: Owenkillow River, Owenreagh East and Tributaries Catchment Status Reports, 2011, 2015 and 2018 published by the Loughs Agency of the Foyle Carlingford and Irish Lights Commission

67. There very clearly are a range of factors which have implications for the Atlantic Salmon population within the Foyle catchment (and more generally). As stated by the Loughs Agency, “*extremely low marine survival rates*” are a critical factor and it is noted that it remains possible to actively seek out and remove Atlantic Salmon through angling.
68. In the light of the above, any implications for Atlantic Salmon arising as a result of the proposed discharge consents must be viewed in the context of the following:
- 1) The extremely small / localised area/s of habitat in question (the burns), infinitesimally small in view of both the Owenkillev sub-catchment and wider Foyle catchment;
 - 2) The evidence which shows this habitat as not being important for the Atlantic Salmon population (discussed below);
 - 3) ‘Sanctioned’ losses through angling.
69. To give further context, included at Annex 8 is a copy of the Owenkillev River SAC boundary map (2005), published on the DAERA website¹⁴. This map has been annotated to show the two proposed discharge locations (at the Curraghinalt Burn and Pollanroe Burn). For clarity, the Owenkillev SAC covers 42km of the Owenkillev River and its associated habitats, with an overall (designated) site area of 213.46ha. As can be seen from the map included at Annex 8, discharges associated with the Curraghinalt Burn are close to the SAC boundary but any effect would be very localised when considered against the 42km of designated river channel habitat. It is also clear from the map at Annex 8 that the discharge point associated with the Pollanroe Burn is significantly removed from the SAC, a matter explored in detail below at paragraphs 89 to 103.
70. Matters concerning the individual burns are discussed in detail below, but as a headline point, it is considered that purported implications for the Atlantic Salmon population would in fact be indiscernible against the baseline, nugatory.

Curraghinalt Burn

SAC Boundary

71. The boundary of the Owenkillev River SAC extends to include part of the Curraghinalt Burn. However, the discharge location associated with the Curraghinalt mine project lies outside of the SAC boundary.
72. The extension of the SAC boundary to include a section of the Curraghinalt Burn is understood to be on the basis of the woodland habitat which borders the banks of the burn in this location. From a simple review of the SAC boundary in this location, it is clear that the SAC boundary follows (rather precisely) the boundary of the woodland which borders the river. It is noted that whilst the SAC boundary deviates from the main channel and banks in many areas, this is consistent with the inclusion of adjoining woodland, with minor watercourses / tributaries excluded. The formal Conservation Objectives document (2017), included at Annex 4, also assists on the point. It is stated at Section 5.1 (at page 5) of that document:

¹⁴ <https://www.daera-ni.gov.uk/publications/reasons-designation-special-area-conservation-owenkillev-river>

*“The lateral boundary beyond the river channel follows the same guidelines as that for all ASSIs, which is dependent on the type and quality of adjacent habitat. Much of the SAC has limited adjacent habitat. Therefore, the boundary is frequently restricted to the top of the riverbank. However, in places, **there is significant adjoining woodland interest, and this is generally included.** In addition the SAC includes both Drumlea and Mullan Woods ASSI and the Owenkillew and Glenelly Woods ASSI.”*

(emphasis added)

73. The above points to the fact that the SAC boundary is not reflective of any purported ecological value of the burn itself.

Atlantic Salmon

74. The survey report regarding the electrofishing survey, produced by the Loughs Agency states:

“In the case of the Curraghinalt Burn the range of habitat which was accessible to fish was small, but nevertheless it was felt that it would at the very least provide a refuge for juvenile salmonids in times of spate in the main Owenkillew River. The Pollanroe Burn was deemed to have a greater expanse of suitable habitat capable of providing spawning, nursery and pockets of holding. Therefore all three habitat types required for Salmonids to complete their life cycle were judged to be present in the lower section of the Pollanroe Burn.”

75. As reported by the Loughs Agency, the Curraghinalt Burn has a limited range of habitat available to (salmonid) fish, with only its potential to provide a refuge for juvenile salmonids (under very specific conditions within the main river) cited in terms of suitability. Furthermore, additional detailed survey work was nonetheless undertaken and this was specifically focussed upon determining ‘actual presence’ through electrofishing. In other words, the survey work went beyond habitat analysis, where judgements are made on the likelihood of a species being present, to a fish capture exercise where raw data in terms of fish presence (species, age class) is documented.
76. Raw survey data was requested by the applicant in order to assist with understanding the survey information presented in the survey report. Survey Data Sheets were subsequently provided by the Loughs Agency.
77. The relevant survey data sheet confirms that in terms of habitat suitability, for spawning, nursery and holding habitat, a score of “3” is given for each. With reference to the Advisory Leaflet titled “The Evaluation of Habitat for Salmon and Trout”, this grading puts the habitat “well outside grade 1 on one or more counts” (i.e. in terms of nursery habitat) and “failing” in respect of suitability for spawning and holding habitat (where anything outside of grade 1 is considered to be failing when considered against the relevant parameters described).
78. The detailed survey work did not provide any evidence of the presence of Atlantic Salmon (qualifying interest feature of the SAC). Only two Brown Trout (age class 1+ only) were recorded over the survey period.
79. Any ecological survey can be viewed as a snap-shot in time. It is therefore important to use other data and contextual information when analysing survey

information and forming judgements. In this instance, the habitat quality data, bed morphology information and electrofishing data all point to the fact that Curraghinalt Burn is not important for Salmonid fish species. Specifically, regarding bed morphology, it is important to have regard to the fact that there is a significant (circa 2m) level change at the head of the burn, making fish passage into the burn extremely difficult, and very unlikely under most main river conditions.

80. The data does not support the proposition that this burn is of value, let alone importance, to Atlantic Salmon. The habitat is documented as being sub-optimal (at best) in respect of nursery, spawning and holding habitat and no Atlantic Salmon, at any life stage, were recorded during the detailed surveys. It is clear that Curraghinalt Burn does not provide habitat on which the qualifying SAC population of Atlantic Salmon are in any way reliant in terms of maintaining favourable conservation status.
81. It is considered that matters of functional linkage, with particular regard to Atlantic Salmon, are not relevant to the Curraghinalt Burn and that maintaining or indeed improving water quality within the burn itself would have no discernible effect on the species.
82. The discharge criteria as proposed are considered to be protective of the aquatic environment associated with the Owenkillew River SAC. In part, this conclusion is reached in view of the mixing and dilution which occurs between the end of pipe discharge into the Curraghinalt Burn and the confluence with the Owenkillew River.
83. It is noted that the relevant section of the Curraghinalt Burn is designated as part of the SAC, however, for an adverse effect on Integrity to occur, the effect must be one which undermines (or has the potential to undermine) the Conservation Objectives of the SAC. In assessment terms, one is not looking simply for 'any effect', the effect must be significant and capable of undermining the Conservation Objectives for the site (see paragraph 41 above).
84. Whilst the maintenance and (where possible) enhancement of water quality is referenced within the Conservation Objectives document, it is not an actual 'conservation objective' in its own right (see above). It is in fact a 'component objective', relevant to Atlantic Salmon as well as *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation, FWPM and also Otter.
85. Following from the above, for the Conservation Objectives to be undermined, the proposed project (in this case the relevant discharges) would need to adversely affect the objective of maintaining or restoring to favourable condition, the qualifying interest features (see paragraph 40 above). As part of the assessment process, one should have regard to the feature component objective targeted at "maintenance and (where possible) enhancement" of water quality as relevant to Atlantic Salmon, *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation, FWPM and Otter. It is not however appropriate in assessment terms, to adopt an approach which assesses the (proposed) discharges simply in view of the SAC boundary. The correct approach is to assess against the Conservation Objectives, with reference to the various component objectives.
86. In terms of baseline conditions, it is important to have regard to the fact that insofar as water quality objectives are concerned, the stretch of the Owenkillew adjacent to the project site is currently of Good status. Indeed, it has previously been confirmed by the Water Management Unit that "*all objectives for the Owenkillew*

are Good for 2021". The HRA process must recognise that the baseline includes existing discharges which have already been consented, and which are not showing to adversely effect water quality within the SAC.

87. Specifically in relation to biological water quality, detailed monitoring reports are available which relate to the existing discharge consent (commencement in November 2014) and which are relevant to the project. Assessment reports from January 2013, September 2017 and August 2019 are in the public domain and were submitted in support of the 2013 discharge consent application, the 2017 planning application, and as part of the Addendum to the Environmental Statement in 2019 as relevant to the 2017 planning application, respectively. These assessment reports show that the biological water quality (as assessed with reference to aquatic macroinvertebrate sampling and the application of biotic indices) of the Owenkillev River has not degraded during the course of consented discharges into the Curraghinalt burn. It remains of "Good" / "High" status. Indeed, specifically regarding the sample point immediately downstream of the confluence between the Curraghinalt burn and the Owenkillev River, the results have consistently shown the biological water quality to be of "Good" / "High" status.
88. The evidence does not support any assertion that any of the SAC qualifying interest features have been, or could be, adversely affected by discharges into the Curraghinalt Burn.

Pollanroe Burn

89. Some of the points raised above are equally relevant to the Pollanroe Burn. Where appropriate, reference is made to information presented above.
90. In the case of the Pollanroe Burn, hydrological connectivity does exist with the Owenkillev River SAC, but unlike with the Curraghinalt Burn, this is via another main river, the Owenreagh River. The effects of mixing and dilution in relation to effects at the SAC itself, would be even greater than in the case of discharges to the Curraghinalt Burn.
91. It is noted that the survey report and detailed survey results provided by the Loughs Agency shows use of the Pollanroe Burn by both Atlantic Salmon and Brown Trout.
92. In the case of Brown Trout, both juvenile and adult trout were recorded, and the evidence points to a breeding population of Brown Trout being present within the burn. As previously discussed however (see paragraphs 28 and 41 above), Brown Trout are not a qualifying interest feature of the Owenkillev River SAC. It is relevant that, as reported by the Loughs Agency¹⁵, whilst there is some recognised cross-over in terms of habitat requirements, the general trend within the Foyle catchment is that Atlantic Salmon dominate the main river and swifter water, while trout dominate the smaller tributaries. This is borne out by the Loughs Agency's own survey data for the two burns.
93. Atlantic Salmon were recorded in the Pollanroe Burn. This species is a qualifying interest feature of the SAC and as discussed, connectivity exists between the Pollanroe Burn and the SAC. Context is however important to the assessment process when reaching judgments in relation to whether the Conservation

¹⁵ Foyle Area and Tributaries Catchment Status Report 2015 (2016), Loughs Agency of the Foyle Carlingford and Irish Lights Commission

Objectives for the SAC would be undermined and when determining the implications for the SAC insofar as maintaining the integrity of the designated site.

94. In view of the survey data sheets provided by the Loughs Agency, the habitat grades associated with the habitat suitability for Salmonid species along surveyed lengths of this burn were higher than for the Curraghinalt burn. However, the habitat was concluded not to be of the highest grade (Grade 1).
95. Survey site POLL 001 was graded as follows:
- Spawning 2
 - Nursery 2
 - Holding 3
96. Survey site POLL 002 was graded as follows:
- Spawning 3
 - Nursery 2
 - Holding 3
97. Survey site POLL 003 was graded as follows:
- Spawning 3
 - Nursery 2
 - Holding 3
98. In the light of the above gradings, and with reference to the Advisory Leaflet discussed above at paragraph 77, each of the burn sections can be categorised as sub-optimal in respect of all three habitat elements.
99. Whilst, unlike for the Curraghinalt burn, Atlantic Salmon were recorded in the Pollanroe Burn. These were all recorded at survey site 1, closest to the confluence with the Owenreagh River. No Atlantic Salmon were recorded at survey site 2 and no fish at all were recorded at site 3.
100. Importantly, the Atlantic Salmon recorded during the surveys were all Salmon parr. No fry or adult Salmon were recorded. The data does not show that the Pollanroe Burn is a breeding site for Atlantic Salmon.
101. In terms of baseline water quality within the Owenreagh River, this was assessed as “Good” or “High” across all sample points in 2019¹⁶, with the data over the three assessment years (2015, 2018 and 2019) showing conditions to be relatively stable, and certainly with no downward trend in biological water quality.
102. As discussed above in relation to the Curraghinalt Burn, a target value of 10mg/l is considered protective of FWPM, and for Atlantic Salmon any application of a comparable target would only be of relevance to spawning Atlantic Salmon. Positive evidence exists in relation to no spawning Atlantic Salmon being present within the Pollanroe Burn. A discharge limit of 50mg/l (within Curraghinalt burn) has previously been accepted by NIEA NED as protective of the FWPM interest feature within the Owenkillow River SAC. It follows that this would equally apply in the case of Atlantic Salmon using the Owenreagh River.

¹⁶ Biological Water Quality Assessment (2019) included at Appendix C.8 of FEI submission 1 (in 2019)

103. Given the foregoing, the burn is not considered important in the context of maintaining the favourable conservation status of the species. Any effects are very localised within the context of the Salmon population range, and the evidence does not point to adverse effects which could diminish the ability of Atlantic Salmon to maintain population levels.

Conclusions:

104. The discharge criteria as proposed are considered to be protective of the aquatic environment associated with the Owenreagh River ASSI and Owenkillew River SAC.

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