Ecological Consultants
Environmental and Rural Chartered Surveyors

Shadow Habitat Regulations Assessment

Planning Application: 4/25/2110/0F1

Location: Land At Parkside Road, Cleator Moor

Proposal: Erection Of 95 Dwellings With Associated Infrastructure

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ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

QUALITY AND ENVIRONMENTAL ASSURANCE

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1. INTRODUCTION

1.1.1 Article 6(3) of the European Habitats Directive dealing with the conservation of European protected sites states that:

'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subject to assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'

1.1.2 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 transposed the European Habitats Directive into UK Law. Former European Protected Sites are now referred to as Natura 2000 sites.

1.1.3 A planning application has been submitted for the "Erection of 95 dwellings with associated infrastructure" at Parkside Road, Cleator Moor. This site is within 400m of River Ehen Special Area of Conservation (SAC).

1.1.4 Because the development is not necessary to manage the Natura 2000 site for nature conservation purposes but could cause harm to the special nature conservation interests of the Natura 2000 the development is considered to have some potential to have an impact on the special interest of the Natura 2000 site and therefore an Assessment of the development is required under the terms of the above legislation.

1.1.5 The 'Natura 2000 Network' are of exceptional importance for the conservation of important species and natural habitats within the European Union. The purpose of Habitats Regulation Assessment (HRA) of land use plans is to ensure that protection of the integrity of Natura 2000 sites is an integral part of the planning process at a regional and local level. The network of Natura 2000 protected sites comprises Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites. Government guidance advises that potential SPAs (pSPA), candidate SACs (cSAC) and potential Ramsar (pRamsar) sites are also included in HRAs.

1.1.6 Habitats Regulation Assessments can be seen as having a number of discrete stages -

- Stage 1 - Screening
- Stage 2 – Appropriate Assessment
- Stage 3 – Assessment of Alternatives
- Stage 4 – Assessment where no alternatives are available

1.1.7 Following recent Case Law it has been established that where a potentially harmful impact on a Natura 2000 site has been identified and mitigation measures have been put forward, which are not an integral part of the development, these mitigation measures can only be considered as part of a more formal Assessment (Stage 2).

1.1.8 In the case under consideration here, potentially harmful effects arising from the development proposal have been identified and mitigation measures have been proposed. This Assessment therefore constitutes a Stage 2 – an Appropriate Assessment.

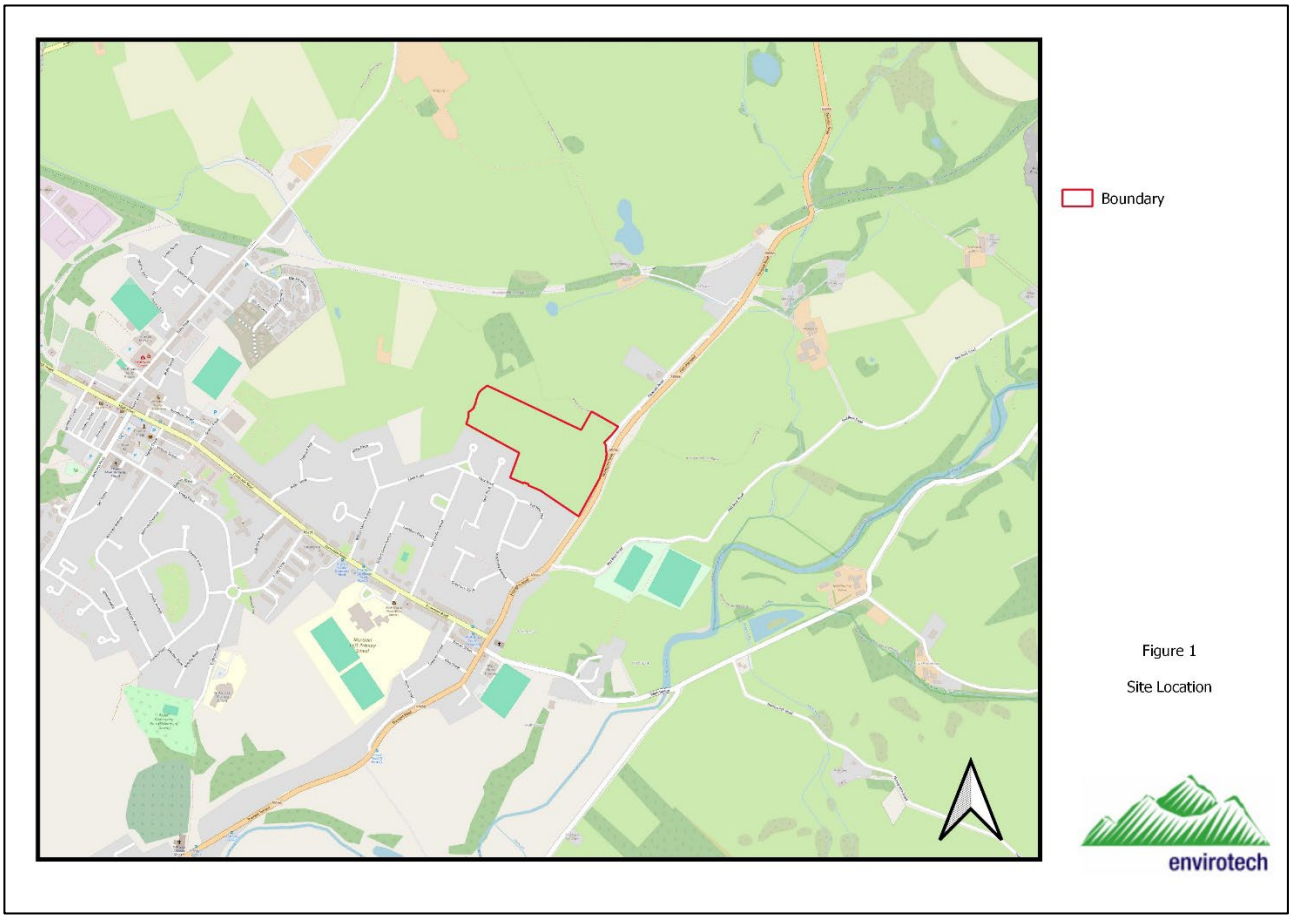
1.1.9 Envirotech was commissioned, to undertake a Shadow Habitat Regulations Assessment of the potential impacts of the proposed works (The Project) on the nearby Natura 2000 sites in accordance with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

1.1.10 This study was led by Mr Andrew Gardner (Envirotech).

2. BRIEF DESCRIPTION OF THE APPLICATION BEING ASSESSED

2.1.1 The proposal under consideration is an application for erection of 95 dwellings at Parkside Road, Cleator Moor.

2.1.1 The site comprises grassland and hedges to the edge of the village of Cleator Moor.



3. IDENTIFICATION OF NATURA 2000 DESIGNATED SITES CONCERNED

3.1.1 This Assessment has first screened Natura 2000 protected sites to decide which of these sites are likely to be affected by implementation of the planned development.

3.1.2 In carrying out this screening process the Assessment has considered the main possible **sources** of effects on the Natura 2000 sites arising from the project, possible **pathways** to the Natura 2000 sites and the effects on possible sensitive **receptors** in the Natura 2000 sites. Only if there is an identifiable source, a pathway and a receptor is there likely to be a significant effect.

3.1.3 Natura 2000 sites more than 5km from the application site have been screened out of the assessment because given the scale and type of development planned it is considered very unlikely that the development will cause any harm to sites at this distance from the source of any harm.

3.1.4 The only Natura 2000 site within 5km of the site is River Ehen SAC.

3.1.5 In the case of the development under consideration there will be no direct impacts on any Natura 2000 sites.

3.1.6 It is not considered any of the land taken for development or that adjacent can be considered as Functionally Linked Land.

3.1.7 There may be potential for release of fugitive dust, liquids and or other contaminants during construction and to a lesser extent operation. There is potential for introduction of invasive species.

3.1.8 Other indirect effects are considered very unlikely to occur.

3.1.9 Given the above considerations only the following Natura 2000 site has been 'Screened-In' to the Assessment. That is, the following Natura 2000 designated site has been identified as having some potential to be at risk from the development proposal:

- River Ehen Special Area of Conservation (SAC)

4. THE NATURE CONSERVATION INTEREST OF THE NATURA 2000 SITE CONCERNED

4.1.1 River Ehen SAC has been designated because it supports internationally important populations of Fresh Water pearl mussel *(Margaritifera margaritifera)*, which is known to have recruited successfully within the last 20 years. Atlantic salmon *(Salmo salar)* are also included in the citation.

4.1.2 The criteria for designation derived from information available on-line from Natural England and the Joint Nature Conservation Committee are appended.

4.1.3 List of operations that could potentially damage the special interests of the above Natura 2000 Site(s)

- Direct Physical impacts
- Disturbance
- Indirect disturbance
- Water Pollution
- Air Pollution
- Changes to Hydrology

4.1.4 When assessing the possible impacts of a development project on the Natura 2000 Site concerned the potential of the Plan or Project to cause any or all of the above listed damaging operations have to be considered when reaching a decision as to whether the proposed works will cause harm to the integrity of the Natura 2000 site concerned.

5. INITIAL SCREENING OPINION WITHOUT CONSIDERATION OF PROPOSED MITIGATION MEASURES

Table 1 Assessment of the Potential impacts

Potential Harmful Impacts on Natura 2000 Sites	Comments	Potential Harmful Impact on the SPA/SAC/RAMSAR	Potential Mitigation
Direct Physical Impacts	The development will not involve any direct land take, dredging or any other physical impact of a Natura 2000 site	None	None required
Direct Disturbance to Qualifying Species	There will be no direct impacts on the Natura 2000 site. The development site is 400m from the edge of the nearest Natura 2000 site boundary and separated from it by agricultural land and a road. Designated species would not use terrestrial habitat and as such no disturbance will occur.	None	None required
Indirect Disturbance to Qualifying Species	There may be a small uplift in the local population caused by the development and this may cause an increase in recreational disturbance along the banksides. Designated species would not use terrestrial habitat and as such no disturbance will occur.	None	None required

Water Pollution	There will be a direct pathway for water pollution from the site to the Natura 2000 site(s) via land drains but no overland. Drainage is to be to a SUDS pond with an outflow, via a hydrobrake to a culvert emptying into the River Ehen. Green field flow rates will be achieved but this is an open potential pollution pathway. Risk are higher during construction	Pollution of water entering River Ehen	**Required**
Air Pollution	Background air pollution from increased road traffic may temporarily increase as a result of the operation of heavy machinery and plant in the construction of the development. Dust may blow with a westerly prevailing wind towards the River Ehen. Dust creation is only likely during construction.	Pollution via dust entering River Ehen	**Required**
Introduction of Invasive Species	There is 400m separation between the site and Natura 2000 Site. The introduction of invasive species is possible	Spread of invasive species off site	**Required**
Changes to Hydrology and geomorphology	There are no watercourses onsite and outflows of water from the site will be at greenfield rates	None	**None required**

6. ASSESSMENT OF IDENTIFIED IMPACTS OF THE SCHEME TAKING INTO ACCOUNT PROPOSED MITIGATION MEASURES

Additional technical information has been provided by GEO Environmental Engineering in response to third-party concerns regarding historic mining and potential mine water impacts upon the River Ehen SAC. Intrusive investigations, desk study review and geological assessment found no evidence of mine workings beneath the site, no mine entries onsite, and no significant contamination sources capable of affecting controlled waters. Historical iron ore workings are confirmed to lie within a separate geological formation to the north and west of the site. The risk to the River Ehen SAC from mine water or site-derived contamination is therefore considered negligible. Matters relating to foul drainage discharge capacity fall within the remit of United Utilities as statutory undertaker. Natural England has raised no objection to the Shadow HRA, and subject to the proposed CEMP, SuDS and pollution prevention mitigation, the proposal is not considered likely to adversely affect the integrity of the River Ehen SAC.

6.1 *Water pollution*

6.1.1 The following outlines methods for negating water pollution during construction and will form the basis of a CEMP.

1. Site Management and Planning

- A Construction Environmental Management Plan (CEMP) will contain a specific section on water pollution control.
- Phased works to reduce the extent of exposed ground at any one time.

2. Sediment and Silt Control

- Silt fences, sediment traps, or bunds will be used to intercept runoff before it reaches SuDS.
- Silt socks, hay bales, or temporary settlement ponds will be used at outfalls or drainage channels.
- Roads will be regularly cleaned to prevent sediment tracking from vehicles.

3. Runoff Management

- Temporary drainage channels will be lined with erosion control matting.
- Diversion swales may be used to direct clean water away from disturbed areas.
- Surface water will be stored in temporary attenuation ponds or tanks for settlement before discharge to SuDS.

4. Pollution Prevention

- Designated refuelling and chemical storage areas will be away from SuDS and watercourses, on impermeable surfaces with bunding.
- Spill kits will be provided and staff trained in spill response procedures.
- Low-toxicity biodegradable oils to be used in machinery where possible.

5. SuDS Protection Measures

- Temporary silt curtains or barriers at SuDS inlets.
- No direct connection of polluted water to SuDS until water has been treated.
- Filter strips, gravel traps, or forebays at SuDS inflow points.

6. Monitoring and Maintenance

- Regular inspection of SuDS and pollution prevention features.
- Removal of silt and debris from interceptors, traps, and ponds.
- Monitoring of water quality at SuDS outfalls, particularly after rainfall events.

6.1.2 The following outlines methods for negating water pollution during operation.

These measures include:

- **SuDS Maintenance**: All SuDS features, including swales, detention basins, permeable paving, and filter strips, will be subject to regular inspection and maintenance to ensure continued performance. This includes the removal of silt, debris, and litter, and the management of vegetation to prevent blockages and maintain treatment capacity.

- **Surface Water Drainage Integrity**: Only clean surface water will be discharged to the SuDS system. All dwellings will have separate foul and surface water drainage systems, and compliance with Building Regulations Part H will be ensured to prevent misconnections.

- **Resident Education and Guidance**: New residents will be provided with information outlining the purpose and function of the SuDS features, including advice on the appropriate disposal of household chemicals, oils, and other potentially polluting substances. Residents will be advised not to wash vehicles on permeable surfaces or near surface water drainage inlets.

- **Low-Impact Landscaping**: The use of low-maintenance and low-input landscaping will be encouraged to minimise the use of fertilisers, herbicides, and pesticides, thereby reducing the risk of nutrient or chemical pollution entering the drainage network.

- **Ongoing Monitoring**: Communal drainage features and SuDS infrastructure will be inspected periodically by a site management company or appointed maintenance contractor. This will include monitoring for evidence of pollution, sediment build-up, or functional issues that could compromise water quality.

- **Management Responsibilities**: Where SuDS features are located within shared areas, long-term maintenance responsibilities will be assigned to a management company or other appropriate body, with clear obligations set out in the management plan.

6.2 *Air pollution*

6.2.1 A range of best practice measures will be implemented throughout the construction phase to minimise the generation and off-site dispersal of dust and other air pollutants. These measures are in accordance with guidance from the Institute of Air Quality Management (IAQM) and reflect standard construction environmental management practices.

Key mitigation methods will include

- Dust Suppression: Use of water sprays, misting systems or damping down on exposed surfaces, haul roads, and stockpiles during dry or windy conditions to suppress dust generation.

- Site Management: Establishment of clearly defined haul routes, with regular maintenance and cleaning of access roads to minimise dust from vehicle movements. A wheel washing facility will be installed at the site exit to prevent track-out onto the public highway.
- Stockpile Control: Minimisation of the height and area of material stockpiles. Stockpiles will be located away from sensitive boundaries and, where possible, covered or sealed to prevent wind-blown dust.

- Vehicle and Plant Controls: All construction plant and vehicles will be maintained in good working order and operated in accordance with manufacturers' specifications to minimise exhaust emissions. Engines will not be left idling when not in use.

- Site Enclosures: Use of site hoarding or screening around the perimeter, particularly near sensitive receptors such as residential dwellings, to limit wind entrainment of dust.

- Material Handling: Minimisation of drop heights when handling loose materials. Use of covered skips and sealed containers for transporting dusty waste.

- Monitoring and Response: Daily visual inspections of dust-generating activities will be carried out by the site manager. Additional suppression measures will be deployed as required in response to weather conditions or complaints.

- Communication and Complaints Procedure: A community liaison contact will be established and visible on-site signage provided. All complaints regarding dust will be logged, investigated, and addressed promptly.

6.3 *Invasive species*

6.3.1 To prevent the introduction or spread of invasive non-native species (INNS) during the construction phase, the following precautionary measures will be implemented in accordance with the Wildlife and Countryside Act 1981 (as amended), the Environment Act 2021, and relevant best practice guidance:

- Site Survey and Identification: A pre-construction ecological survey will be undertaken to identify the presence of any INNS on or adjacent to the site, such as Japanese knotweed (Fallopia japonica), Himalayan balsam (Impatiens glandulifera), or Giant hogweed (Heracleum mantegazzianum). Any findings will inform a species-specific management and eradication plan.

- Biosecurity Protocols: All personnel and contractors will adhere to strict biosecurity measures, including:

    - Cleaning of boots, tools, and machinery before entering and exiting the site to prevent the transfer of invasive plant material or contaminated soil.
    - Use of designated washdown areas for vehicles and plant.
    - Soil and Material Handling: Any soil or material suspected to contain invasive species will be treated as contaminated and:
    - Handled separately from other materials.
    - Not reused on site unless properly treated and verified free from viable plant material.

- Disposed of at a licensed waste facility in accordance with Environment Agency guidance.

- Control and Eradication: Where INNS are identified, appropriate control measures will be undertaken prior to site clearance or earthworks. Methods may include chemical treatment by a licensed operative, mechanical removal, or excavation and disposal. Control work will be timed and phased to avoid risk of further spread.

- Training and Awareness: All site operatives and contractors will receive toolbox talks and training on identifying and avoiding the spread of invasive species. Instruction will include protocols for reporting sightings and handling contaminated material.

- Monitoring and Record-Keeping: The site manager or ecologist will monitor compliance with INNS prevention measures throughout construction. Records of any sightings, treatments, or incidents will be maintained.

7. IN COMBINATION EFFECTS

7.1.1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 requires the assessment of likely significant effects either alone or in combination with other plans or projects. In combination effects differ from cumulative effects in EIA in that these are effects which may or may not interact with each other, but which could affect the same receptor or interest feature. Cumulative effects refer to occasions where another project could have an impact via the same pathway e.g. if both proposals caused disturbance to birds.

7.1.1 Where the project has no effect i.e. zero / neutral impact alone, there is no possibility of in combination effects. Sweetman C-258/11 (2013) stated that: "The requirement that the effect in question be significant lays down a de minimis threshold. Plans or projects that have no appreciable effect on the site are therefore excluded".

Recent Natural England responses and Secretary of State decisions have made reference to effects "not perceptible" / "nugatory" / "indistinguishable from background variations".

7.1.2 The above assessment has identified the effects are considered to be negligible in respect of indirect disturbance, water pollution and invasive species. As such an in combination effects assessment is not considered necessary.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1.1 Screening of Natura 2000 protected sites has established that the following site has the potential to be affected by the implementation of the proposal.

- River Ehen (SAC)

8.1.2 Following further screening of the special qualifying features of interest of the Natura 2000 site concerned, consideration of potentially harmful operations on these features which could arise from the implementation of the planned development, consideration of the proposed mitigation for potentially harmful operations and consideration of possible in-combination effects it has been concluded that the implementation of the application with appropriate mitigation will not have a significant impact on the special interest of the Natura 2000 Site concerned.

8.1.3 That is, it has been ascertained that the proposed development will not have any harmful effects on special nature conservation interest of the Natura 2000 site concerned and will not adversely affect the integrity of the Natura 2000 site concerned.

8.1.4 The conclusion is provisional on the requirement to prepare a CEMP and follow other mitigation measures outlined in this report.

9. APPENDIX

Project Reference: GEO2024-6221
Date: 20.05.2026
Site: Land off Parkside, Cleator Moor (see GEO2024-6221)
Document: Technical Note – Mining and Geotechnical Summary

Introduction

Following the receipt of the attached comments made by a local resident of Cleator Moor, dated 7th October 2025, GEO have compiled this Technical Note (TN01) to address the concerns raised.

Desk based and targeted site intrusive works have been undertaken by GEO Environmental Engineering Limited (GEO) on behalf of Genesis Homes (North) Limited. A summary of these findings is given below although it is recommended that reference be made to the appropriate reports.

Previous Reports & Overview

GEO have completed the following documents for the site off Parkside in Cleator Moor, details of which are included below along with a brief summary of the findings of each report.

- Phase 1: Desk Top Study (Preliminary Environmental Risk Assessment), ref: 2024-6139, dated: 15.01.2024.
    - Historical map data indicates that the site has comprised undeveloped agricultural fields, therefore deep made ground and significant contamination was not anticipated.
    - Geological data indicates Glacial Till (firm and stiff gravelly clays with bands of sand and gravels) overlying solid strata comprising the Buttermere Formation (folded mudstone, siltstone and sandstone turbidite deposits) and the Frizington Limestone Formation (shales and limestones). The report indicated a negligible and very low risk of dissolution of soluble rocks respectively.
    - Reference to the published BGS geological maps and the GSR included as part of the report indicates the site is underlain by the Buttermere Formation which typically comprises sheared and folded mudstone, siltstone and sandstone turbidite deposits and is devoid of coal seams. Immediately north of the site and partially underlying the northeastern boundary is the strata of the Frizington Limestone Formation. This typically comprises shales and limestones. A review of the historical maps suggest that iron ore mining was undertaken within this strata north of the site area.
    - The GSR indicates that the site is located in an area where mineral veins may have been mined. The report includes the following comment with regards to mineral vein mining:

      "Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered."
    - The report indicates a possible risk to the proposed development from possible mineral (iron ore) mining. A review of the geological and historical mining maps indicate that iron ore mining was located to the north of the site within the Frizington Limestone Formation.

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- A Coal Authority (CA) Consultants Mining Report was procured for the site, as the CA also keep records of iron ore mining. The report indicates that there is no known mining beneath or within the vicinity of the site. The CA report did not identify a risk of unrecorded mining. The CA report does not identify any other geological risks on or within the vicinity of the site.

- Based on the information presented within the report and obtained from the relevant bodies, the risk to the proposed development from coal or iron ore mining is currently considered negligible.

- The DTS indicated a very low to low geotechnical risk with the potential for some variable ground conditions.

- A negligible to very low risk was deemed appropriate with respect to possible ground contamination and ground gas. A negligible risk was deemed appropriate with respect to groundwater contamination, as the site exhibited no previous contaminative uses.

- The site is recorded as being on the edge of a radon affected area where full radon protection measures are required. Consultation with the Local Authority was recommended in this respect to determine appropriate protection measures. The report stated that *'it is likely that properties along the northeastern part of the site will require radon protection measures, but this should be confirmed'.*

- A ground investigation was recommended to determine the ground conditions to aid the design of foundations, roads and drainage and to determine any risks to the end users from contamination or ground gases (carbon dioxide and methane).

- Phase 2: Ground Investigation Report, ref: 2024-6221, dated: 25.02.2025

  - The site intrusive works comprised variable techniques including;
    - Mini percussion boreholes
    - Mechanically excavated trail pits
    - Dynamic probes
    - Dynamic Cone Penetrometer Tests
    - Gas and groundwater monitoring wells

  - The ground conditions across the site presented themselves as topsoil overlying natural drift deposits of firm to stiff sandy gravelly clay. Across the western parts of the site, this was typically underlain by firm to stiff and stiff gravelly clay. Granular fractions were also encountered which comprised loose and medium dense clayey/silty sandy gravel / gravelly sand through the central parts of the site.

  - A combination of shallow bedrock / weathered rock or stiff gravelly clay were encountered across the eastern parts of the site.

  - Minor perched groundwater was noted although a shallow groundwater table is considered very unlikely. However, localised running sand and associated unstable ground should be anticipated. An allowance should be made for groundwater control measures (i.e. pumping equipment) and shoring, particularly during wetter periods of the year. Care should be taken when pumping to avoid undermining the surrounding ground by removing fines.

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- The use of soakaway drainage is not considered appropriate for the site.
- Geotechnical laboratory testing indicates clays of low and intermediate plasticity, with the modified plasticity indices suggest a minimum foundation depth of c.0.75m bgl. However, given the presence of existing mature trees/hedgerows on site, it is recommended that the foundations are designed in accordance with NHBC Standards (Chapter 4.2, "Building Near Trees"). Therefore, some over-deepening may be required.
- A concrete classification of DS-1 / AC-1 should be utilised.
- Based on the Human Health risk assessment above, none of the contaminants have been identified as posing a potential risk to human health with respect to a residential end use with plant uptake. As such, the topsoil present on site is not considered to pose a risk to human health or plants and remediation is not required.
- Following the completion of the ground gas monitoring the site falls into Characteristic Situation 1 (CS1) indicating that gas precautions are not necessary with respect to Carbon Dioxide and Methane.
- With respect to radon protection measures, it is recommended that the Local Authority are consulted in regard to which properties require radon protection measures.

The letter received by GEO includes many points of interest and GEO have answered these on the attached document, with GEO responses in red text.

Historical Mine Workings

The following BGS geological maps were utilised to verify the geological setting of the site as well as the locality of known mine entries and mining geohazards.

- Sheet NY01NW (Frizington), 1:10,000 Scale, Solid and Drift Edition (included in 1:50,000 Geological Sheet 28 (Whitehaven).
- Sheet NY01SW (Egremont), 1:10,000 Scale, Solid and Drift Edition (included in 1:50,000 Geological Sheet 28 (Whitehaven) and Sheet 37 (Gosforth).

These geological plans show that a conjectured major fault, known locally as the Henry Pit Fault, trends adjacent to the northern boundary and crosses through the far northeastern corner of the development site. The geology to the north of the fault is recorded to comprise various lithologies including

- Frizington Limestone Formation
- Eskett Limestone Formation
- Stainmore Formation

The formations named above are where potential and known ironstone workings are recorded to be present.

The majority of the development site is underlain by the Buttermere Formation (BUF) which typically comprises sheared and folded mudstone, siltstone and sandstones and is devoid of coal seams. These deposits are also devoid of the ironstone or haematite mineral veins, typically associated with the mining legacy which is present to the north of the site. This is confirmed by the geological map extract (NY01NW & NY01SW) included on the following page which shows the locality of the known recorded

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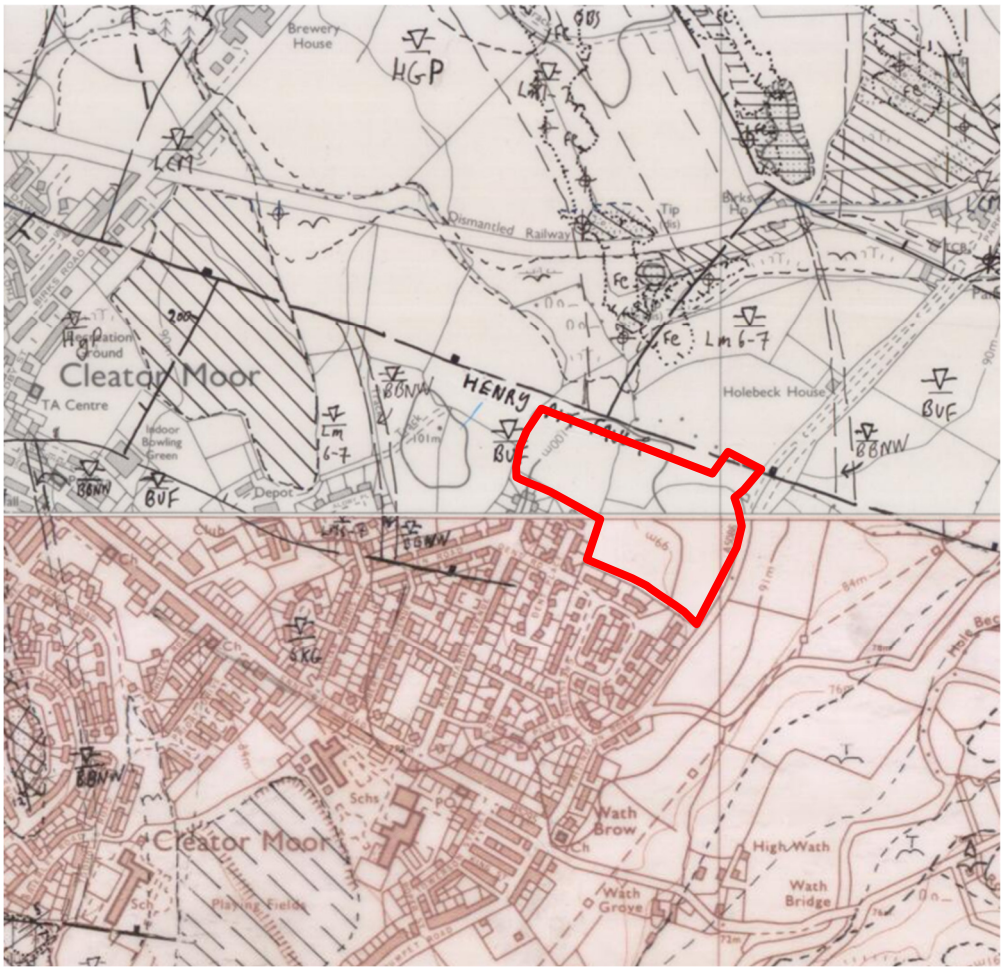
iron ore workings, all of which are present to the north and west of the site and within a different geological setting to the proposed development site.



Sheet NY01NW (Frizington)

Sheet NY01SW (Egremont)

Mine Entries

A lack of any mine entries has been noted on site during the intrusive investigation works, as well as the recent site walkover.

The BGS geological plans (copies above) have not recorded the presence of any mine entries on site, nor have they indicated mineral vein workings below the site.

The historical plans included as part of the Desk Top Study (DTS) report do not record any historical site activities either present on site or extending close to the site. A copy of an Ordnance Survey Map (dated 1842 – 1952) which was obtained online from the National Library of Scotland is included below. GEO have highlighted where mining activities have been historically recorded (i.e. shafts, mines, pits, quarries). The blue circle denotes the general area of the development site with a lack of shafts, mines, pits, quarries being recorded on site. This is further confirmed by the historical plans in Appendix III of the DTS.

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Given the proximity of these workings, the presence of the Henry Pit Fault and the geological setting present below the site, the historical legacy of iron ore mining is not considered to extend below the site and therefore no further investigation or assessments are considered necessary at this time.

Additional Comments

The Local Planning Authority have made the following comments with the Client asking GEO to make observations (email dated 22nd April 2026, direct from the Client)

LPA COMMENTS: *A Shadow HRA has been prepared. This has received no objections from Natural England. Notwithstanding the lack of objections from Natural England, issues have been raised regarding the potential impact of the development upon the River Ehen by objectors and this is required to be addressed by Officers. Please can you review issue/potential for impact upon the River Ehen from mine water and from additional discharge from the accepting United Utilities Waste Water Treatment Plant.*

Considering the concerns above, GEO have referred back to the previously completed P1 DTS and P2 GIR.

Given the lack of any historical development on the site, which appears to have remained for agricultural use, no specific concerns were raised with respect to the potential for groundwater contamination or Controlled Waters (i.e. sensitive receptors) due to a lack of any made ground or contamination risks present on site.

With respect to the River Ehen, although this feature is recorded to be c.326m east (at its closest point to the site) and is recorded to be a Site of Scientific Interest (SSSI) & Special Areas of Conservation (SAC) the risk from materials on site are not considered to represent a significant or unacceptable risk given that the site is covered by topsoil with a lack of any anthropogenic debris and no visual / olfactory

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evidence of hydrocarbon based contaminants. The risk to the River Ehen from the site is therefore considered negligible.

With respect to the impact of mine water on the River Ehen, as mine workings are not considered to extend below the site (see previous and attached comments) the Client cannot be assumed to be responsible for the impact of mine water on any Controlled Waters or the local environment.

However, GEO should make it aware that any mine water management, treatment and discharge responsibility typically falls on The Mining Remediation Authority and not the landowner.

With regards to the additional foul flows discharging via the United Utilities Waste Water Treatment Plant, UU are considered as the statutory body to have the responsibility to address this issue.

General Comments

Consideration must be made for variations to occur in the ground conditions between the exploratory hole locations for which GEO holds no responsibility and areas where limited access was available. It is therefore recommended that a "watching brief" and "observational technique" be applied to this site to ensure that if ground conditions appear to vary from those identified within the investigation report then advice should be sought from a suitably qualified and experienced Engineering Geologist, Geotechnical or Geo-Environmental Engineer.

The recommendations and opinions expressed in this report are based on the strata observed within the exploratory holes in addition to the results of the site and laboratory tests commissioned by GEO. Consequently, GEO takes no responsibility for conditions that have not been revealed or which occur between them. GEO takes no responsibility for the accuracy of third-party information provided by sub-contract drillers or laboratories.

The conclusions and recommendations are considered reasonable based on the available information. However, these cannot be guaranteed to gain regulatory approval. Therefore, the report should be passed to the appropriate regulatory authorities and/ or other key stakeholders including warranty providers in order to seek their approval of the findings prior to undertaking any works on site.

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EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	River Ehen
Unitary Authority/County:	Cumbria
SAC status:	Designated on 1 April 2005
Grid reference:	NY031144
SAC EU code:	UK0030057
Area (ha):	24.39
Component SSSI:	River Ehen (Ennerdale Water to Keekle Confluence) SSSI

Site description:
The River Ehen forms the outfall from Ennerdale Water and flows some 20 km before reaching the Irish Sea at Sellafield. For much of its upper length the River Ehen is oligotrophic (nutrient-poor) and flows over bryophyte-dominated shingle, pebbles and rock. Above Ennerdale Bridge the catchment is largely composed of acidic rocks of the Borrowdale Series and Skiddaw Slates. Downstream from Ennerdale Bridge the river is slightly enriched by streams flowing from Limestones and Millstone Grits of the Carboniferous Series.

The designated stretch of the river, between Ennerdale Water and the confluence with the River Keekle at Cleator Moor, meanders across a narrow floodplain with areas of riparian woodland and trees. This stretch of the river supports outstanding populations of the freshwater pearl mussel *Margaritifera margaritifera*, which is known to have recruited successfully within the last 20 years. An important feature of this stretch of the Ehen is the amount of tree shade along the banks, as bank-side shade appears to be of great importance for the mussels. Along with the nutrient-poor status of the river, the shade from direct sunlight helps to reduce the amount of algal growth in the channel. This would otherwise dominate the river bed and make it unsuitable for the mussels.

Freshwater pearl mussels can live for over 100 years. Their life cycle is however complex and in part dependent upon the maintenance of a healthy salmonid population. The mussels do not mature until 15 years, when the females produce eggs. After initially remaining within the mother's shell the larvae (0.2mm) attach themselves for a short period to young salmon and trout. After dropping off, they remain buried within clean sand and gravel in the stream bed for a further five to ten years. This buried stage within the life cycle is particularly susceptible to changes in the flow regime, siltation and algal deposition.

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Freshwater pearl mussel *Margaritifera margaritifera*
- Atlantic salmon *Salmo salar*

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030057
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

European Site Conservation Objectives for River Ehen Special Area of Conservation Site Code: UK0030057

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of the habitats of qualifying species**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

S1029. *Margaritifera margaritifera*; Freshwater pearl mussel
S1106. *Salmo salar*; Atlantic salmon

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the “Habitats Regulations”). They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in regulation 3 of the Habitats Regulations..

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.