

# Nenthead Mine Water Treatment Scheme

Otter and Water Vole Survey Report

Coal Authority

Project number: 60596575  
MWTS-AEC-NC-XX-RP-Y-3112 P2

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## Quality information

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Revision	Revision date	Details	Authorized	Name	Position
P1	3/11/2022	First Issue	LW	Lewis Wardle	Project Manager
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## Executive Summary

Surveys have been undertaken for otter and water vole in June/ July 2022 on the River Nent and other small watercourses within the Survey Area that flow into the River Nent across the old mine workings.

No signs of otter or water vole were recorded. There is desk study evidence indicating the likely presence of otter on sections of the Nent downstream of the Survey Area, and therefore it is likely to be present on the section within the Survey Area occasionally although the heavy metal contamination of the river has inhibited fish populations.

There are known populations of water vole in the North Pennines relatively close to the Survey Area (e.g. at Alston approximately 7 km north-west), although the lack of field signs indicates the likely absence of this species from watercourses in the Survey Area.

The findings of the 2022 surveys re-affirmed the results of otter and water vole surveys undertaken at Nenthead mine site in 2018 as part of a feasibility study for an earlier iteration of the mine water treatment scheme.

It may be necessary to adopt precautionary methods of working and/ or to undertake pre-construction update surveys of habitats once the impacts of the scheme on the watercourses are fully identified.

To ensure wildlife is protected, a Precautionary Working Method Statement (PWMS) for otters and water voles will be prepared which will inform the Construction Environmental Management Plan (CEMP) that will be submitted with the planning application.

# 1. Introduction

## 1.1 Background

The Department for Environment, Food and Rural Affairs (DEFRA) set up the “Water and Abandoned Metal Mines” (WAMM) Programme in 2011 to begin to tackle pollution from the hundreds of metal mines across the country. The programme is delivered as a partnership between DEFRA, the Environment Agency and the Coal Authority.

The River Nent fails to achieve good status for cadmium, lead, zinc, fish and invertebrates. The Northumbria River Basin Management Plan (RBMP), published in 2015, includes steps for addressing pollution from abandoned mines and managing the impacts to 2027. The WAMM programme has ranked the River Nent as the lowest quality in the Northumbria RBMP, and one of the lowest quality rivers in England, with respect to mine water related pollution. The pollution from the River Nent contributes to pollution in the River South Tyne up to 60km downstream. Due to these impacts, the Nent Catchment has been a priority for investigation, assessment and targeted improvement measures.

AECOM has been appointed by the Coal Authority to undertake the feasibility and outline design for a mine water treatment scheme (MWTS) at the Caplecleugh Adit and Rampgill Adit which are two of the point source contributors to the failure of the River Nent under the RBMP. The aim is to reduce the metal loading (principally lead, zinc, cadmium) within the mine water discharge from the Caplecleugh Adit and Rampgill Adit by between 70% and 90%, providing betterment to the River Nent, whilst adhering to the conditions required for consents, licences and permits. The scheme will also incorporate surface water management across the site to limit the volume of water coming into contact with contaminants.

This Otter and Water Vole Survey Report has been prepared by AECOM to assess the ecological constraints in connection with the proposed mine water treatment scheme (MTWS) (hereafter referred to as the Scheme) at Nenthead. The Scheme is located at the Nenthead Coal Mines, as shown by the red line boundary in Appendix A. All land situated within the red line boundary is hereafter referred to as the Site.

The assessment of riparian mammal constraints has been undertaken with reference to current good practice<sup>1</sup> and forms part of the technical information commissioned by the Coal Authority in connection with the Scheme. The report addresses relevant wildlife legislation and planning policy as summarised in Appendix B and is consistent with the requirements of *British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development*.

This report is intended for advice in respect of Scheme design, site layout and / or site investigation. Further ecological surveys and / or ecological impact assessment (EclA) (including detailed mitigation measures) may be required in connection with a planning application or to contribute to an Environmental Impact Assessment (EIA) once the Scheme proposals have been finalised and any required surveys have been completed.

## 1.2 The Site

The Site is located at Nenthead Mines at Ordnance Survey national grid reference NY 78395 43287 and is approximately 50ha in size.

The Site comprises of a disused mine including adits and buildings, several ponds, a reservoir, and the River Nent.

## 1.3 The Scheme

The client proposes to design and construct a MWTS to remove metals from the water discharging from the Caplecleugh and Rampgill Adits before it reaches the River Nent. A single storey pumping station is proposed adjacent to the Nenthead car park, which would pump mine water via an underground pipeline to two new treatment ponds near to the Handsome Mea reservoir. The treated water will be returned to the River Nent via an underground pipe. The general location of the proposed MWTS is shown in Appendix A.

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<sup>1</sup> CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester

## 1.4 Scope of the Report

This report presents ecological information obtained during the following:

- A desk-study undertaken in June 2022 to obtain records of protected and notable species<sup>2</sup> (including otter and water vole) within 2km of the Site (the area covered by the desk study is hereafter referred to as the Study Area); and,
- Two surveys were undertaken on 7<sup>th</sup> June 2022 and 7<sup>th</sup> July 2022 on all watercourses identified as suitable for riparian mammals.

## 1.5 Survey Aims and Objectives

The aims and objectives of the survey work and the subsequent report presented here were to:

- review existing ecological data to identify any records of water voles and otter within the Study Area;
- assess watercourses within the Survey Area for the suitability for otter and water vole;
- evaluate the survey results to determine the nature conservation value of any otter and water voles identified within the survey area, and incidentally record the presence of other riparian mammals through their field signs, where present (notably mink (*Neovison vison*) and brown rat (*Rattus norvegicus*)).
- determine the status (presence/likely absence) of water vole and otter within the Survey Area in order to inform the EclA for Proposed Development.

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<sup>2</sup> Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the *Natural Environment and Rural Communities Act 2006*; any species listed in an IUCN Red Data Book; and any other species listed under the Northumberland BAP.

## 2. Relevant Legislation and Planning Policy

This section sets out the legislative and policy framework within which sites, habitats and species have been identified by government and conservation organisations as the key focus for biodiversity conservation in the UK and which therefore are the focus of ecological assessment with respect to proposed developments.

### 2.1 Legislation

#### 2.1.1 Water vole

The water vole is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- intentionally capture, kill or injure water voles;
- damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- disturb them in a place of shelter or protection (on purpose or by not taking enough care); and
- possess, sell, control or transport live or dead water voles or parts of them (excluding water voles bred in captivity).

The Act provides a defence against the offences outlined above. However, the defence is only sustained if it can be argued that the potential offence was 'the incidental result of a lawful operation' and 'could not reasonably have been avoided' as set out in the Act. In order to demonstrate these two elements of the defence, as far as is reasonable, appropriate action would need to be taken to safeguard water vole and their shelters to ensure there is as little risk as possible of interfering with them. Short-term low-level disturbance which 'allows water vole to flee and then later return' is not considered likely to trigger an offence under the Act. Where development cannot avoid potential offences then a licence may be required.

#### 2.1.2 Otter

Otter and their resting places receive protection under both British and European legislation. Under European legislation the otter is protected under EC Directive (92/43/EEC), being listed under Annexes IIa and IVa. This is implemented in Britain under the Conservation of Habitats and Species Regulations, 2019 (as amended). Under this legislation it is an offence to damage or destroy an otter's place of shelter, whether intentionally or accidentally and to deliberately disturb an otter.

The otter is listed under Annex II of the Bern Convention and is also protected under Schedule 5 and 6 of the Wildlife and Countryside Act, 1981 (as amended). Under the Wildlife and Countryside Act, 1981 (as amended) it is a criminal offence to:

- 'intentionally' kill, injure, or take an otter without a licence;
- damage, destroy, or obstruct access to a place used by an otter for shelter or protection.

Due to the otter's protection, it is necessary to identify if they are utilising watercourses affected by the Scheme prior to any works commencing and to assess the likely effects of the works on otter. If otter is identified and will be affected by the proposed works, appropriate mitigation would be required, and it may be necessary to apply to Natural England for a European Protected Species (EPS) development licence.

### 2.2 National Planning Policy

The Natural Environment and Rural Communities (NERC) Act (2006), as amended, put an obligation on public bodies to have regard, so far as is consistent with the proper exercise of their functions, to the purpose of conserving biodiversity. Under the terms of the Act, conserving biodiversity includes restoring or enhancing populations and/or habitats. The local planning authority (LPA) or other determining authority must therefore consider the effects of planning applications upon biodiversity and how it can be mitigated for or enhanced.

A list of species and habitats 'of principal importance for the purpose of conserving biodiversity' is published under Section 41 of the NERC Act (2006). The list which includes 56 habitats and 943 species has been drawn up in consultation with Natural England and draws upon the previous UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats which is now obsolete. Water vole and otter are listed as a priority species on the NERC Act, 2006.



The revised National Planning Policy Framework (NPPF) published on 21st July 2021 sets out the government's planning policies for nature conservation in England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in July 2018.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

## 2.3 Local Planning Policy

The relevant local planning policies specifically applicable to otter and water vole are provided in the Eden Local Plan and the Eden Biodiversity Action Plan (LBAP). Table 1 provides a brief summary of these policies and strategies. For the precise wording of each, please refer to the source document.

**Table 1. Summary of Relevant Local Planning Policies Applicable for Otter and Water Vole**

Policy Document	Planning Policy	Purpose
Eden Local Plan 2018	Policy – Biodiversity and Geodiversity	<p>New development will be required to avoid any net loss of biodiversity and geodiversity, and where possible enhance existing assets. Should emerging proposals identify potential impacts upon designated sites, regard should be given to the objectives for each of the hierarchy of sites. The following designations are of international importance and will be afforded the highest level of protection:</p> <p>International/European Sites</p> <ul style="list-style-type: none"> <li>• Special Areas of Conservation (SAC).</li> <li>• Special Protection Areas (SPA).</li> <li>• Candidate SACs or SPAs.</li> <li>• Ramsar sites.</li> </ul> <p>Where harm cannot be avoided, development will only be permitted where mitigation measures would result in no significant harm being caused. Where the proposal cannot rule out possible significant effects, no alternatives exist, and the proposal is deemed to be of overriding public interest, the proposals will only be permitted if adequate compensatory measures can be put in place.</p>
Eden Biodiversity Action Plan 2018	Water vole (winter) and otter are listed as key Local Priority Species	Ensure biodiversity targets are met and specific conservation objectives are achieved with respect to water vole and otter.

## 3. Methodology

### 3.1 Desk Study

An initial data search was undertaken in 2022. This search requested records for otter, water vole and other riparian mammals within the Study Area from the Cumbria Biodiversity Data Centre.

The desk study was restricted to data within the last 10 years (post 2012), so that the data collated would be more likely to reflect the current baseline conditions associated within the Study Area.

Reports from previous ecological surveys of the Site were also reviewed for relevant data, and the results summarised to assist with the conclusions and evaluation where appropriate.

### 3.2 Field Surveys

A total of nine watercourses (including the River Nent) were initially classified as requiring assessment for their suitability for water vole and/or otter during a Preliminary Ecological Assessment in spring 2022. Surveys were undertaken between June and July 2022 which encompasses the optimal window for water vole survey (April to September) enabling the identification of breeding territories as well as being suitable time for surveying for otter<sup>3, 4, 5, 6</sup>.

Surveys were conducted in weather conditions suitable for undertaking water vole surveys i.e. dry, mild with no recent heavy rain.

All wet watercourses were included in the surveys, any watercourse that was considered unsuitable at the time of the survey (e.g. lacking suitable vegetation, water depth or vegetation structure) was scoped out from further assessment.

Surveys involved searching both banks of the watercourses for signs of otter and water vole presence with searches taking place up to 2m from the water's edge including in-channel survey where safe for the surveyor to do so.

#### 3.2.1 Water Vole

Water vole surveys were undertaken following guidance provided in the Water Vole Conservation Handbook<sup>5</sup> and the Water Vole Mitigation Handbook<sup>6</sup>. Depending on where safe to access, watercourses were searched for field signs along all of their route within the Survey Area. Water vole field signs that were searched for during the survey include:

- Faeces – these are 8-12 mm long and 4-5 mm wide, varying in colour from green to black, and odourless with a putty-like texture;
- Latrines – found throughout the territory, often comprising a pile of flattened droppings, with fresh droppings on top;
- Feeding stations – comprise a neat pile of chewed feeding remains;
- Burrows – these are typically wider than they are high, with a diameter of 4–8cm, and are usually located along the water's edge;
- Lawns – around burrows there is often an area of grazed vegetation, surrounded by taller vegetation, these are most often produced when the female is nursing young;
- Nests – these comprise a large ball of shredded material, often woven into the bases of rushes and reeds, and are normally found in areas where the water table is high, such as wetlands;

<sup>3</sup> Chanin, P (2003a). *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.

<sup>4</sup> Chanin P. (2003b) *Monitoring the Otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No.10 English Nature, Peterborough.

<sup>5</sup> Strachan, R. and Moorhouse, T. (2011), *Water Vole Conservation Handbook*. Third Edition. Wildlife Conservation Research Unit (WildCRU), Oxon.

<sup>6</sup> Dean, M., Strachan, R., Gow, D., Andrews, R., Mathews, F. and Chanin, P. (2016) *The Water Vole Mitigation Handbook*. The Mammal Society, London.

- Footprints – as with other rodents, the footprints of the fore foot, show four toes in a star arrangement, with the hind foot showing five toes. The size of footprints for the hind foot is 26-34 mm;
- Runways – these are low tunnels within the vegetation; and
- The presence of water vole can also be confirmed by sightings and from the characteristic ‘plop’ of the water vole entering the water, which acts as a warning to other voles.

### 3.2.2 Otter

Otter surveys were undertaken following standard survey guidance<sup>7</sup>. Depending on where safe to access, watercourses were searched for field signs along all of their route within the Survey Area.

- Spraints – These are usually black in colour and smell of fresh cut hay. The otter uses spraints to define its home range, and are located at prominent points such as on boulders and ledges;
- Anal jelly;
- Footprints – The otter has five toes that are webbed. The footprints are very characteristic and easy to recognise. Each print is around 50-60 mm wide;
- Paths found along river banks;
- Flattened vegetation;
- Holts and ‘couches’ - Holes in the riverbank, hollow trees, cavities amongst tree roots, piles of rocks, wood or debris may all be used as holts or couches; and
- Feeding remains.

The presence and distribution of these signs can be used to assess the likely importance of the watercourse for the local otter population.

## 3.3 Survey Limitations

There are no limitations to the survey work undertaken. The surveys were completed in appropriate weather conditions and were spread across late spring and early summer period. Although the optimum recommended period for undertaking water vole surveys is April/ May, surveys were undertaken in June/ July. This is not considered to represent a constraint to the survey because of the localised climate of the Survey Area, which is over 400 m above sea level, meaning that the standard recommended survey period was adjusted to take this into account.

## 3.4 Quality Assurance

All water vole and otter surveys were undertaken by suitably qualified and trained ecologists, who have previous documented riparian mammal survey experience and are competent in identifying otter and water vole field signs. The report has been written, reviewed and approved by members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at the appropriate level.

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<sup>7</sup> Chanin P. (2003b) *Monitoring the Otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No.10 English Nature, Peterborough.

## 4. Results

### 4.1 Desk Study

The desk study returned no recent records within 1 km of the Study Area of otter or water vole.

The Cumbria Biodiversity Data Centre information sheet on water voles in the county indicates that although mainly a lowland species, there are upland populations of water vole in the North Pennines on small upland streams (noted to be possibly at altitudes that mink do not normally reach), which build above-ground nests of reeds and grasses in tussocks of grass<sup>8</sup>. The species is known to be present in the River South Tyne (into which the Nent flows) with a core population centred at Alston (approximately 7 km north-west of the Survey Area), and the East/ West Allen, and therefore it is possible that there are upland populations in/ around the Survey Area.

There are records of water vole around Burnhope Reservoir, which is approximately 6.5 km south-east of the Survey Area, and the upper reaches of the River Wear, as well as from tributaries of the Wear along the A689 corridor to the south and east of the Survey Area<sup>9</sup>. A document published by the North Pennines Area of Outstanding Natural Beauty (AONB) specially states that “...*water quality is not a major factor [in the suitability of water courses for water vole] and water courses with a high heavy metal content like the Nent and the Rookhope Burn are still suitable for water voles*”<sup>9</sup>.

A previous survey of the Nenthead Site for the Coal Authority by AECOM in 2018 did not record any evidence of otter or water vole on the small tributary streams of the Nent, although the Nent itself was not within the red line boundary of the scheme at that time and was therefore not surveyed. The PEAR concluded that transient otter presence could not be ruled out, although there was no suitable habitat for couches/ holts within the area surveyed. There are previous records of otter on downstream sections of the Nent from surveys undertaken by AECOM in 2015 and 2016 for other projects on behalf of the Coal Authority.

### 4.2 Field Survey

#### 4.2.1 Habitat Suitability Assessment

Prior to the presence/ absence survey a habitat suitability survey was undertaken for each watercourse, and was based on an inspection of the watercourses for features suitable for supporting otter and water vole respectively. Watercourses that were found to be dry in the survey period were not surveyed for otter and water vole, and have not been considered within this report. Descriptions of watercourses and their suitability for each species is detailed in Table 2 below.

**Table 2. Water Vole Habitat Suitability**

Watercourse	Description	Suitability for Water Vole	Suitability for Otter
WC 1 – River Nent	River Nent, approx. 5m wide x 30cm deep. Water often shallow and fast flowing	Low Limited areas of earth banks for burrow creation, limited cover and limited food resources for water vole.	Moderate Areas of rocky outcrops suitable for sprainting and laying up, likely to be fish within the river.
WC 2	Approx 50cm wide and 60cm deep. Water was slow flowing.	Moderate Areas of cover and food resources found throughout the watercourse. Earth banks were present which were suitable for burrow creation.	Moderate Largest of the streams within the Study Area, areas available for sprainting and laying up. Suitable for transitory purposes
WC 3	40cm wide and 30cm deep.	Moderate Earth banks present, with limited cover and food resources available.	Low Small watercourse only suitable for transitory purposes
WC 4	40cm wide and 30cm deep.	Moderate Earth banks present, with limited cover and food resources available.	Low Small watercourse only suitable for transitory purposes.

<sup>8</sup> CBCD data sheet on water vole: <http://www.cbdc.org.uk/uploads/cbeb/statements/CBEB-WaterVole.pdf>

<sup>9</sup> North Pennines Area of Outstanding Natural Beauty (2011) *Water voles in the North Pennines. Where they can be found, what they need to survive and how you can help*. North Pennines AONB, Stanhope, County Durham: <https://www.northpennines.org.uk/wp-content/uploads/2019/12/Watervoles.pdf>

Watercourse	Description	Suitability for Water Vole	Suitability for Otter
WC 5	40cm wide and 20cm deep. Flows into Handsome Mea reservoir.	Low Earth banks present, with limited cover and food resources available.	Low Small watercourse only suitable for transitory purposes
WC 6	30cm wide and 20cm deep. Flows out of Handsome Mea reservoir.	Low Areas of water course covered with brick banks. No food resources available but areas uncovered were suitable for burrow creation.	Low Small watercourse only suitable for transitory purposes.
WC 7	20cm wide and 20cm deep.	Low Areas of watercourse dry during survey. Areas of food resource, cover and earth banks available.	Low Small watercourse only suitable for transitory purposes.
WC 8	20cm wide and 20cm deep.	Low Areas of watercourse dry during survey. Areas of food resource, cover and earth banks available.	Low Small watercourse only suitable for transitory purposes.
WC 9	20cm wide and 20cm deep.	Low Areas of watercourse dry during survey. Areas of food resource, cover and earth banks available.	Low Small watercourse only suitable for transitory purposes

The man-made reservoir (Handsome Mea) is not suitable for water vole as there are no banks to provide burrowing habitat, and no marginal/ emergent vegetation to provide a source of food and cover. Similarly this habitat, although potentially suitable for foraging/ passage otter, has no bankside cover or trees to provide couch or holt sites for the species.

#### 4.2.2 Presence/ Absence Survey

No evidence of water vole was found within the Survey Area. Numerous burrows were found on WC5; however these were assessed to be from brown rat due to lack of other field signs, size, shape and use of burrows, and the lack of food plants available to water vole on that watercourse. Some watercourses are suitable for water vole within the Study Area, namely WC2, however with a lack of field signs, it is assumed that water vole is likely absent.

No evidence of otter was found within the Survey Area.

Evidence of brown rat was found on WC2, no other riparian mammal signs were observed during the surveys.

The surveyed sections of watercourse are shown in Appendix B.

## 5. Conclusions and Evaluation

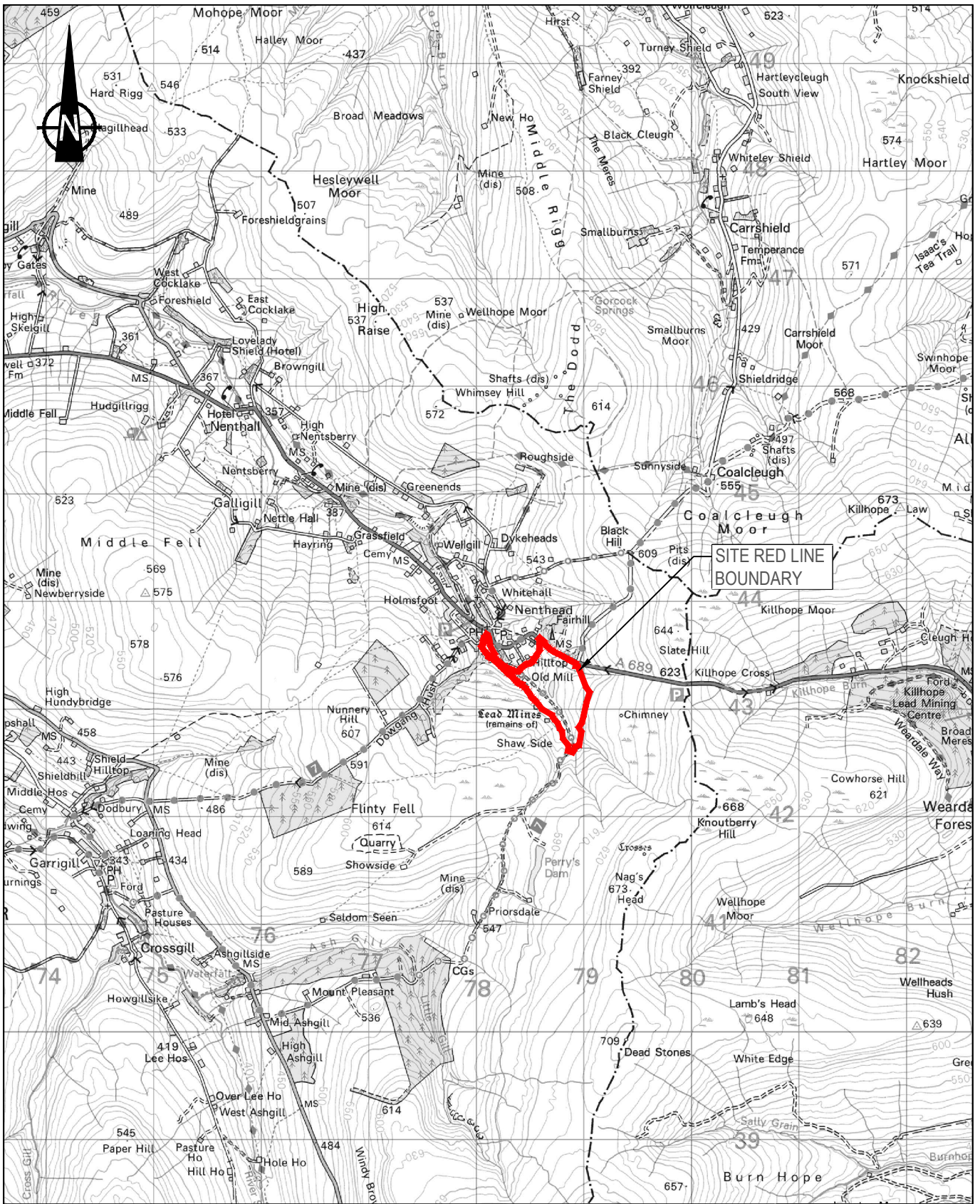
Despite the lack of positive field signs indicating the presence of otter on the surveyed section of the River Nent as it is a wide-ranging species it is considered they may be present along the river within the Study Area, particularly given that there have been records downstream of the Survey Area. The levels of heavy metal contamination of the river may reduce the likelihood that this species is regularly present within the section that runs through the Survey Area, as the fish populations are reduced, however, it may be present on an occasional and transient basis.

No signs of water vole were found during the surveys, and it is concluded that the species is likely absent from the Survey Area, although there is desk study evidence that there are upland populations of water vole in the North Pennines.

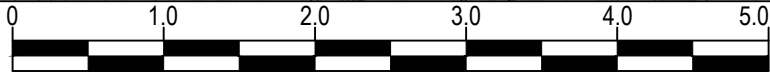
It may be necessary to implement precautionary working practices to mitigate the low residual risk of both otter and water vole being present within the Survey Area, depending on the impacts of the scheme. The requirement for this will be detailed within an ecological impact assessment for the scheme. It may also be necessary to undertake updated surveys for otter and water vole prior to works commencing.

## Appendix A Site Location Plan





**SITE RED LINE BOUNDARY**



SCALE 1:50 000

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Plot Date : 26/10/2022  
File Name : MWTS-AEC-NC-XX-DR-Y-3120-NENTHEAD.MWTS\_SITE\_LOCATION\_PLAN

Drawing Title  
**FIGURE 1 -  
NENTHEAD MWTS  
SITE LOCATION PLAN**

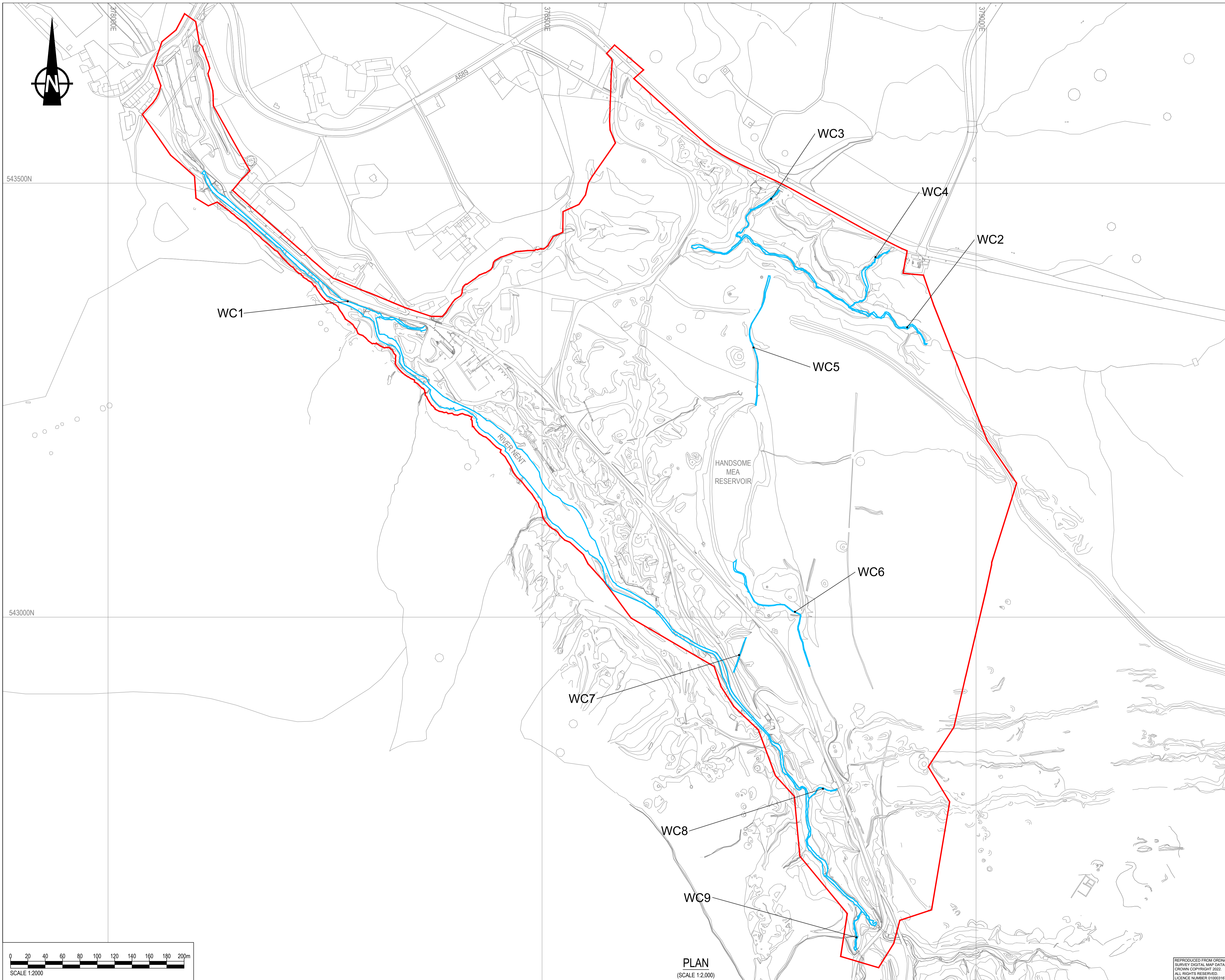
Purpose of issue <b>PRELIMINARY</b>		
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## Appendix B Watercourse Survey Location Plan





IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

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  4. TOPOGRAPHICAL SURVEY IS BASED ON RPS DRAWINGS 'TOPOGRAPHICAL SURVEY' SHEETS 1-6 REF UAM3149\_A DATED JULY 2019 AND PMC SURVEYS LTD DRAWINGS 'RIVER NENT CATCHMENT METAL MINE REMEDIATION' REF 600/1 TO 600/3 DATED 08/10/2013.

KEY

- RED LINE BOUNDARY
- SURVEYED WATER COURSE

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Revision Details	By	Check	Date	Suffix

Purpose of issue: **PRELIMINARY**

Client: **COAL AUTHORITY**

Project Title: **NENTHEAD MWTS**

Drawing Title: **FIGURE 2 - WATERCOURSE SURVEY LOCATION PLAN**

Designed	Drawn	Checked	Approved	Date
SW	SW	AR	AR	25/10/22

AECOM Internal Project No. **60596575** Suitability: -

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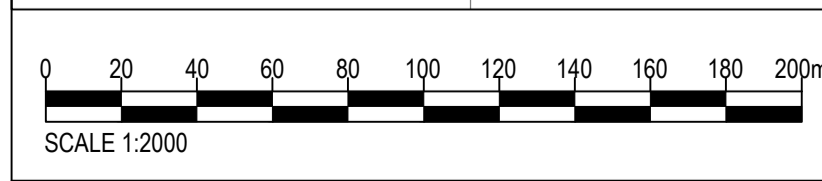
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Drawing Number: **MWTS-AEC-NC-XX-DR-Y-3122** Rev: **P1**

Plot Date: 11/03/2022 9:22 AM  
 File Name: MWTS-AEC-NC-XX-DR-Y-3122 WATERCOURSE SURVEY LOCATION PLAN



PLAN  
(SCALE 1:2,000)



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