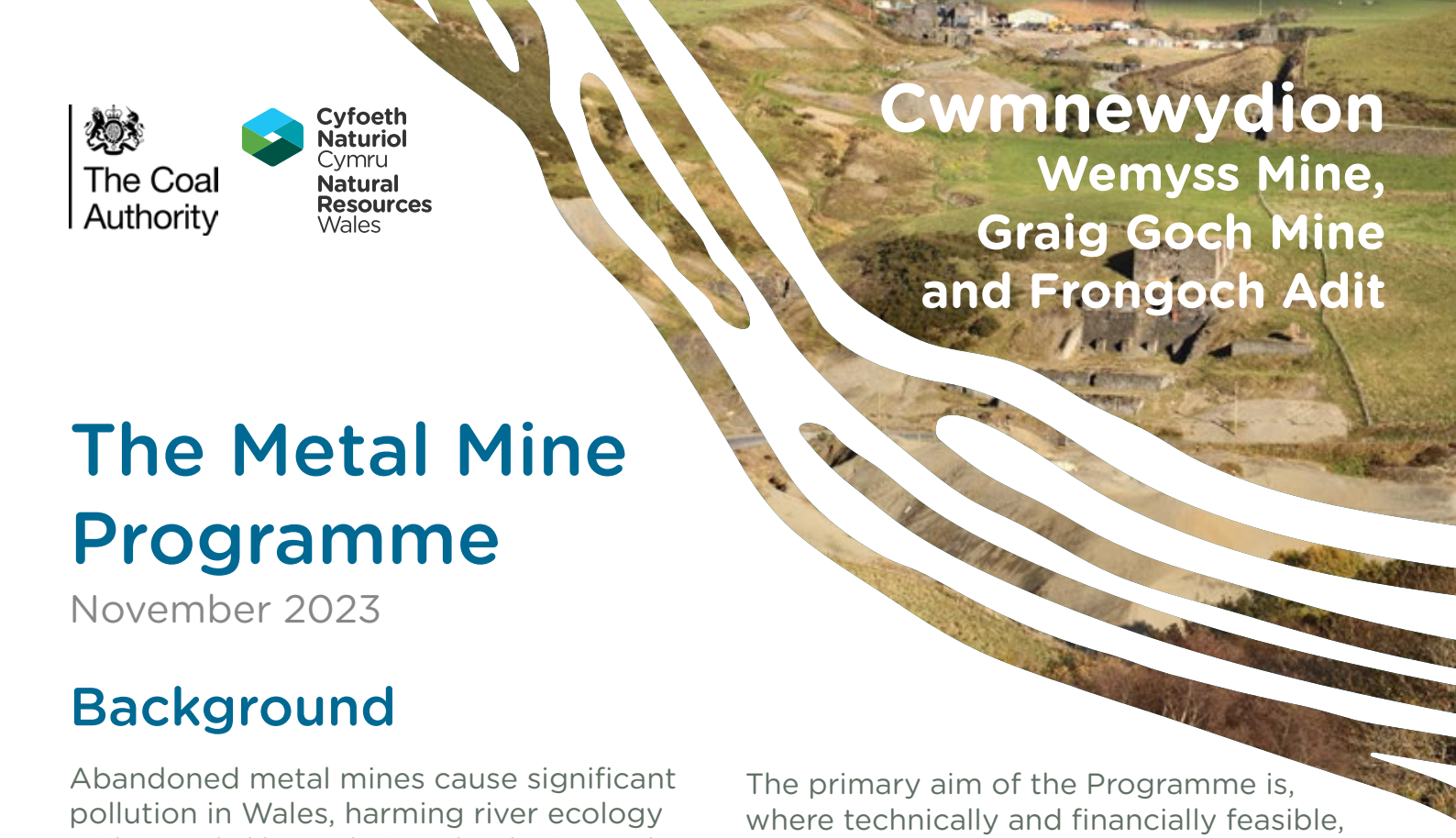


Cwmnewydion
Wemyss Mine, Graig Goch Mine and Frongoch Adit

The Metal Mine Programme

November 2023

Background

Abandoned metal mines cause significant pollution in Wales, harming river ecology with metals like cadmium, lead, zinc and copper. There are approximately 1,300 abandoned metal mines across Wales that have been estimated to impact over 700 km of rivers.

Natural Resources Wales (NRW) and the Coal Authority (CA) are working together on the Metal (Non-Coal) Mine Programme to address this polluting legacy. The Programme is funded by Welsh Government.

The primary aim of the Programme is, where technically and financially feasible, to reduce pollution from abandoned metal mines to improve the health of our rivers, benefiting the environment, people and the economy.

In doing so, this will directly contribute to the sustainable management of natural resources in Wales, and present opportunities to enhance community well-being benefits, as detailed in the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015.

Project context

We are looking at the impact of Wemyss Mine, Graig Goch Mine and Frongoch Adit on the Nant Cwmnewydion which rises approximately 2 km southwest of Trisant village and 3.75 km northwest of Pont-rhyd-y-groes, Ceredigion.

The Nant Cwmnewydion is heavily contaminated with zinc, lead and cadmium with the largest source being the Frongoch Adit, which drains the underground workings of Frongoch and Wemyss mines.

The stream is subsequently a major source of metals to the Nant Magwr and Afon Ystwyth, causing failures of zinc, lead and cadmium standards. Metals remain elevated until the Afon Ystwyth meets the tidal limits just outside Aberystwyth.

These ecotoxic metals cause significant environmental and ecological damage, reducing fish populations and the diversity of invertebrate fauna.

The principle long term objective is the reduction of metal loadings entering the Nant Cwmnewydion tributary, and ultimately the Afon Ystwyth, creating a healthier river for future generations to enjoy.

Project progress

Over the past few years we have been gathering information to better understand the pollution risk from Wemyss Mine, Graig Goch Mine and Frongoch Adit to identify a list of potential mitigation solutions.

Graig Goch Mine and Frongoch Adit are being progressed together under one project called Cwmnewydion, while Wemyss Mine is being progressed as a separate project within the overall Programme.

The two project teams are working closely to seek efficiencies and maximise benefits.

We have commissioned a Scoping Report that includes both Graig Goch Mine and Frongoch Adit and conducted archaeological and ecological assessments, in order to identify the problems that are causing pollution of the watercourse/ water quality issue and which need addressing.

Wemyss Mine

At Wemyss Mine a Feasibility Study identified that the primary pollution sources are the metal-rich spoil heaps that characterise the site. Erosion, mobilisation and leaching of metals is occurring where the watercourses and rainfall interact with this mine waste.

Cwmnewydion

We have installed a flow monitoring structure at Frongoch Adit to record flow and continue to monitor the water quality monthly in locations along the Nant Cwmnewydion.

Possible mitigation options

- Surface water management e.g. mine site drainage
- Mine Water Treatment
- Sediment control
- Mine waste capping
- Mine waste reprofiling
- Watercourse management e.g. separation

Next steps

Cwmnewydion

At Graig Goch Mine and Frongoch Adit the next step is to undertake a Feasibility Study to assess the technical, environmental and economic suitability of the various possible mitigation options.

We are exploring possible intervention options to mitigate pollution to the surrounding waterways, with the aim of improving water quality.

Each site is unique and presents its own challenges and opportunities. It is likely that a combination of the high-level potential mitigation options will be needed to successfully improve water quality in the Nant Cwmnewydion, Nant Magwr and Afon Ystwyth.

We welcome your input as we continue to develop our options, as well as wider environmental, social and economic opportunities available.

This will lead to a short list of feasible options from which a preferred remediation strategy for the site will be selected. It is likely that this will be a phased strategy, targeting specific pollution sources over a number of years, allowing design, construction and then assessment of each intervention.

We would like the local community and other stakeholders to play a key part in this process.

We will be holding public consultation events later in the project, and issuing newsletters to communicate progress on the project.

For further information see:
bit.ly/CwmnewydionMetalMine

Wemyss Mine

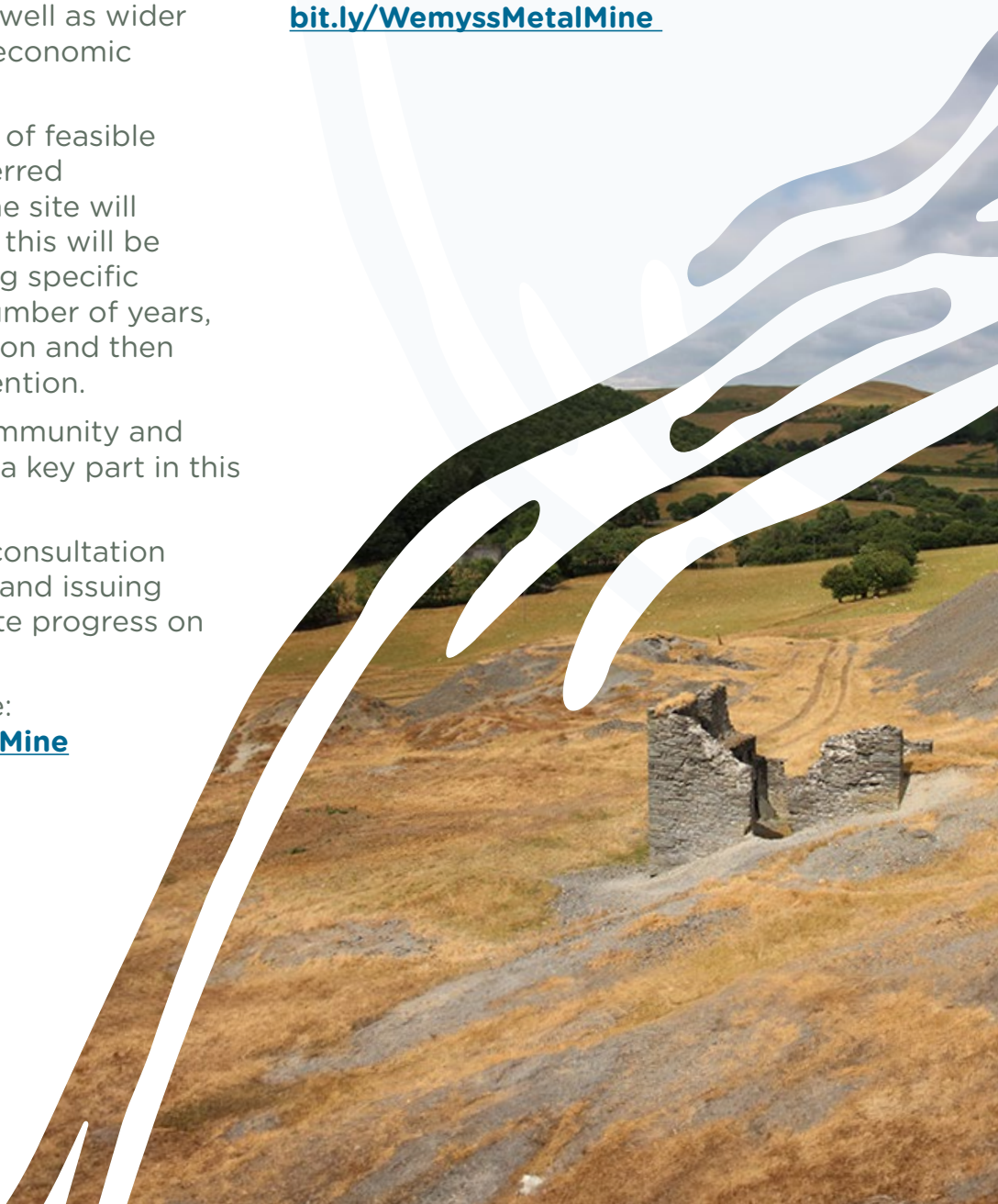
At Wemyss Mine we are currently taking a number of surface water management engineering interventions to outline design.

Outline design isn't the final plan for the site; it represents the key components of a system we think will be implemented.

The interventions include flow management, spoil reprofiling, spoil scour protection, stream diversion and enhanced drainage.

The goal of these interventions is to pre-vent water from interacting with metal-rich spoil heaps in this area, which will reduce the amount of harmful metals entering into the watercourses.

For further information see Citizen space:
bit.ly/WemyssMetalMine



Timeline

An indicative timeline is presented below, which is subject to securing the required funding.

To date

Assessment

Baseline surveys and water quality monitoring to inform a Scoping Study and long list of remediation options.

Summer 2024

Defining the problem

Feasibility Study to assess long list options and identify a suitable short list.

Spring 2025

Short List Options

Stakeholder consultation event to seek feedback on the short list of options.

Summer 2025

Preferred Remediation Strategy

Development of the preferred Remediation Strategy for the site with ranked intervention options for further consultation.

2026 Onwards

Preferred Option

Design and construction of the highest ranked intervention option, followed by assessment of its impact on water quality.

Keeping in touch and how to get involved

We want to hear from you as we progress the projects and explore the wider environmental and social opportunities that can be developed as part of the preferred remediation strategies.

If you'd like to find out more information, please see the Citizen Space pages.

Please get in touch if you'd like to find out more; be added to an email mailing list or share your views and comments.

If you have any feedback on the projects so far, or any of the points in this newsletter, please get in touch.

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The Coal Authority

Cyfoeth Naturiol Cymru
Natural Resources Wales