**PROJECT TITLE:** **Metal Mines Programme**
**Remediation Scoping Study of – Cambokeels**

**PROJECT REF:** **CA18/2311/Instruction 174**

**DOCUMENT REF: CA18/2311/526_001**

**DATE:** **Version 1: February 2015**

# Project Scope
# General Engineering Contract

The Coal Authority

## 1. Background to the Metal Mines Programme

Historic metal mines impact approximately 6% of the water bodies in England and contribute up to 50% of the metal loads in surface waters. The WAMM (WFD Abandoned Metal Mines) project is investigating the extent of the problem with the objective to implement measures that deliver good chemical and ecological status in water bodies polluted by metals from abandoned metal mines.

DEFRA have allocated funds for the Coal Authority and the Environment Agency to implement a programme of site assessment and remediation. Each site requires a phased approach to establish the nature and extent of the problem and whether it is feasible to implement remedial measures.

Initially, the Environment Agency will carry out a characterisation study of the catchment(s). These studies require data collection in relation to flow, water quality and ecological status in order to help identify likely pollution sources. Those characterisation studies that highlight a significant impact, can identify the source and conclude that treatment is a feasible option are then passed to the Coal Authority. The Coal Authority will then further evaluate the impact and consider the feasibility of management options.

Following on from the preliminary catchment characterisation phase, a feasibility study is typically required to assess the possible remedial options for the identified mine water pollution. This scoping document details the activities required for such a study and provides guidance on delivering the required outputs.

Assuming this phase of work demonstrates that remedial action is technically feasible and represents value for money, the next phase would be to carry out a feasibility study and outline design of the preferred remedial option.

## 2. Overview

This Scope is issued is in accordance with the conditions of the Coal Authority's General Engineering Services Contract CA18/2311. A consultant will be appointed through the NEC 3 Professional Services Contract (PSC), Option E - Cost Reimbursable to:

- complete a scoping study to evaluate the identified option(s) to capture, transfer, treat and discharge mine water at Cambokeels
- confirm that there is a viable treatment option for the discharge
- highlight any constraints to taking the scheme forward
- recommend the option to take through to feasibility stage for agreement by the Coal Authority.

## 3. Scheme Background

Cambokeels Mine, is an abandoned lead and fluorspar mine. It is situated on the north bank of the river Wear between the villages of Eastgate and Westgate in upper Weardale. The mine was also known as 'Cammock Isle', 'Cumnock Isle' and 'Cammock Eals' and locally as 'Cambo'. Mining was started in 1847 and ceased in the late 1980's.

Cambokeels Mine

Further background information can be found in Section 10 Ref : A to F .

## 4. Scoping Study

Limited work has been done to the Cambokeels site. Therefore this scope is restricted to:

- a review of the adit flow and quality data, both of which are limited
- a review of mine plans
- a review of available literature including a search of www.aditnow.co.uk
- recommendation of a flow measurement structure
- initial remedial options appraisal for potential treatment
- capture options
- initial review of potential land for a treatment scheme

### 4.1 Site location and Constraints

The Grid Reference for Cambokeels Mine is 393484,538290

## 5. Scope of Services

### 5.1 Objectives and Purpose of Study

The scoping study is to appraise all available information and provide evidence based conclusions to enable the Coal Authority to determine whether remediation is a feasible option for the sources of contamination.

If remediation is considered feasible, a clear appraisal of the potential options should result in a preferred approach with recommendations detailing work required to enable detailed design and subsequent implementation.

The key questions that must be addressed include:

1. Do we understand the source term(s) sufficiently?
2. Can the mine water be treated?
3. Can the mine water be captured?
4. Is suitable land for a treatment system likely to be available?
5. Is diffuse pollution (e.g. spoil heaps, tailings ponds) a significant source of pollution?
6. What options are feasible to deal with diffuse sources of metals?

### 5.2 Tasks

*The Tasks required for this Remediation Scoping study are:*

| Task No. | Task Requirement |
|---|---|
| **S1** | **Start Up Meeting**<br>Discussion and clarification of the requirements of the Cambokeels Scheme Scheme including agreeing the approach to the required deliverables. |
| **S2** | **Site Visit**<br>One site visit to gain a better understanding of the immediate environment and any associated site constraints. This visit should be arranged in discussion with the Coal Authority's Project Manager, and ideally should take place after initial review |

| Task No. | Task Requirement |
|---|---|
| | of the existing information.<br><br>The Consultant shall consider the locations of raw discharge and method capture of the discharge. |
| **S3** | **Review of Existing Information and Data**<br><br>Review the following information and provide a focused and succinct summary of the key points. A wider desk study should be undertaken to enhance the understanding of the site, the nature of the problem and possible mitigation measures.<br><br>This assessment should provide a thorough understanding and refinement of the ***conceptual site model*** which will form the basis for the remedial feasibility study.<br><br>Outputs required:<br><br>• Site location and setting<br>• WFD catchment boundaries and status<br>• Nature of the problem and drivers for remediation<br>• Treatment objectives i.e. target water quality<br>• Key contributing sources and potential improvements<br>• Urgent issues e.g. unstable spoil or tailings, outbreak risks, blocked adits etc. |
| **S4** | **Appraisal of remedial options**<br><br>A review of key pollution sources (as identified in the refined conceptual site model) and a screening assessment of the most appropriate remedial options for each. The source zones must be prioritised in order of importance i.e. nature and extent of impact.<br><br>Outputs required:<br><br>• Review and refinement of the conceptual site model including any constraints and sensitivities<br>• Identification of data gaps<br>• Evaluation all suitable remedial techniques and technologies to address identified pollution<br>• Evaluation of the practicability of the technology (in terms of technical, site, time and regulatory constraints)<br>• Assessment of the effectiveness of the technology<br>• Assessment of the durability of technology<br>• Appraisal of costs and benefit (both monetary and non-monetary i.e. multi criteria analysis)<br>• Identify the associated risks of each approach<br>• Provide an explanation as to why technologies have been rejected<br>• Any barriers to implementing a scheme<br>• Summarise the results<br><br>Following evaluation of each option, we require selection of the preferred capture option with full justification. Consideration should be given to any uncertainties or data gaps associated with the preferred approach. |

| Task No. | Task Requirement |
|---|---|
| S5 | **Health & Safety**<br>Ensure a Site Visit Risk Assessment is completed prior to any site visit. This should be reviewed post site visit and amended as necessary. Please include this as an Appendix to the Scoping Report as it will form the basis of a live document. |
| S6 | **Risk Register**<br>The Consultant shall develop the Project Risk Register and at regular intervals record risk mitigation and identify new risks that become apparent. The risk register should be appended to the Scoping Report. |
| S7 | **Draft Scoping Report**<br>The draft Scoping report should incorporate all the tasks above plus recommendations for a subsequent phase feasibility study to refine the selected remedial approach, in readiness for outline design and implementation.<br><br>In addition the following should also be included:<br>• A review of all available mining plans associated with the location and make suitable reference in the Scoping Report detailing the mining history local to the site.<br>• Obtain an Envirocheck report and make suitable reference in the Scoping Report.<br>• Stakeholder Communication Plan (no direct contact is to be made with stakeholders without the Coal Authority's permission). The Consultant shall undertake research to identify the Key Stakeholders associated with the Project along with details of suitable contact details. Details to be included in the Communication Plan (See Ref E in Section 10).<br>• Consider preliminary land requirements to accommodate the preferred option and engage the Authority's Property team.<br>• A review of the local plan to identify and potential for renewables and joint funding.<br><br>Provide a fully itemised and costed scope for this next phase of work i.e. Feasibility Study. This will need to include a detailed description of all activities to be undertaken, including any necessary site works plus a programme e.g. on-site evaluation of geotechnical and geoenvironmental parameters. This scope should be sufficiently detailed to allow tendering of service providers.<br><br>Reports should be delivered in electronic format to enable review by the Coal Authority. The report should be sent to [redacted] at least two weeks before the Review Meeting in Task S8. |
| S8 | **Review Meeting**<br>Presentation of the Draft Scoping report –the options appraisal and the justification behind the preferred remedial strategy and recommendations for additional work. This will allow technical discussion and comment prior to the finalisation of this scoping report.<br><br>The scoping report will be reviewed against the objectives & purpose of the study to |

| Task No. | Task Requirement |
|---|---|
| | ensure the questions in section 5.1 of this project scope have been fully addressed.<br><br>This meeting will either take the form of a live meeting via computer and telephone, or a face-to-face meeting. |
| S9 | **Final Scoping Document**<br><br>Taking into account the comments made under Task S8, the commissioned party will produce the final report.<br><br>Reports should be delivered in electronic format to enable review by the Coal Authority for final approval. |
| S10 | **Project Management**<br>The consultant must nominate a lead member of staff who will act as their Project Manager responsible for delivering this scheme.<br>Monthly progress reports should be submitted to the Coal Authority with an interim fortnightly telecom. |

## 6. Project Deliverables and Timescales

The appointed Consultant will produce the deliverables detailed in the table below. These deliverables are to be identified within the programme that forms part of the Fee Proposal.

| Description | Latest Submission Date |
|---|---|
| Monthly progress reports Interim fortnightly telecom. | Commencing from x<br>Within x days of |
| Programme of deliverable for the Scoping Report | With Fee Submission |
| Draft Scoping Report, including all elements described in section 5.2 above | 8 weeks after the Consultants' appointment |
| Review Meeting | 2 weeks after submission of Draft feasibility report. |
| Final Scoping Report | 2 weeks after Review Meeting |

The Coal Authority reserves the right to award further stages of the project to alternative consultants. Following completion of the scoping study, the project milestones will be:

- Feasibility Study – Late 2015

**7. Accruals and Invoice Information to be provided by the Consultant**

The appointed Consultant shall:

- submit via email (financedepartment@coal.gov.uk) either an accrual or invoice value for this project by the close of business of working day minus five; whereby working day one is the first working day of the calendar month. The Coal Authority will write to the appointed Consultant with the reporting requirements for the end of financial year. The Coal Authority is content for the appointed Consultant to target +/-10% between the accrual and invoice values.
- provide invoices that clearly detail:
  - breakdown of hours spent by each member of staff
  - Contract / order reference
  - Project title, including the site name
  - The Coal Authority Project Manager

**Please submit a DRAFT invoice via CONJECT to the Project Manager for Approval prior to submission to the finance department.**

**8. Programme**

- The PSC award date is planned for w/c 16th March 2015.

**9. PSC Award**

The Consultant will be appointed based upon their financial and quality submissions via Lot 11 of the Coal Authority's General Engineering Services Contract 2013-2017 (2311) through Option E - Cost Reimbursable of the NEC 3 Professional Services Contract (PSC).

A financial ceiling will be set, based upon the appointed Consultant's financial submission. The financial ceiling will not be exceeded by the appointed Consultant without prior justification and the written authorisation of the Coal Authority's Project Manager.

Change will be managed on this project by the Coal Authority and the appointed Consultant through the NEC 3 Early Warning and Compensation Event process.

## 10. Project Documents

| Ref | Title | Date | Author |
|---|---|---|---|
| **A** | Site Location | 2014 | OS Mapping |
| **B** | Mining map | | |
| **C** | Environment Agency Data | 2015 | Environment Agency |
| **D** | Working With Others – EA Guide for Staff | - | Environment Agency |
| **E** | EA Mine Waters Communications Plan Template | - | Environment Agency |
| **F** | Risk Register | - | The Coal Authority |