



The Coal
Authority

**PROJECT TITLE: Metal Mines Programme
Design of Monitoring Structures
and Desk Top Study –Wheal
Exmouth**

PROJECT REF: CA18/2311/Instruction 175

DOCUMENT REF: CA18/2311/517_001

DATE: Version 1: June 2015

Project Scope General Engineering Contract



The Coal Authority

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1. Background to the Metal Mines Programme

Abandoned metal mines pollute up to 1,700km of rivers in England. All of these mines were abandoned before 2000, when legislation took effect that required operators to clean up any discharges. As a result, nobody is currently responsible for discharges that occurred pre-2000. The most significant sources of metals in our rivers are from abandoned mines - these contribute at least 50% of the cadmium, lead and zinc. This is equal or greater than that from all permitted discharges; more information on the scale of the problem has recently been published. The Department for Environment, Food and Rural Affairs (Defra) is beginning to address the pollution caused by abandoned metal mines in partnership with the Environment Agency and the Coal Authority through the WAMM programme. This programme will begin to clean up polluted rivers and help deliver the EU Water Framework Directive (WFD), which requires the water environment to be in “good status” by 2027.

2. Overview

This Scope is issued 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 design of monitoring structures and desk top study.
- propose activities required to undertake a scoping study

3. Scheme Background

The Wheal Exmouth site is a former valley that has been filled with mining waste from an old lead mine. These tips are composed of crushed local slate in places stained with iron or yellow lead oxide. A public footpath runs from the top to bottom of the works.

The waste tip between the road and the river yields galena and barite in reasonable quantity and small soft samples of pyromorphite. The rest of the tips are almost barren except the big tip at the top end of the works which contains galena, arsenopyrite and sphalerite.

Preliminary monitoring by the Environment Agency has demonstrated that the site causes EQS failures in the River Teign for cadmium, copper and zinc. The EA has identified one adit discharge and several diffuse sources on site, however monitoring structures need to be installed to allow more accurate quantification of the key sources of metals. The main source appears to be the spring arising from the spoil at the top of the site. Further information is contained in the Environment Agency reports.



Confluence of two discharges, Wheal Exmouth

4 Site location and Constraints

Site Location : Wheal Exmouth, near Christas, Exeter, Devon EX6 &PA
The Grid Reference for Wheal Exmouth is (SX) (284146,082994)

5. Scope of Services

5.1 Objectives and Purpose of Study

The objective of the project is to reduce the impact of the site on the River Teign, ideally so that EQS compliance is achieved immediately downstream of the confluence.

The purpose of the study is to develop a conceptual model for the site, and assist the Environment Agency to quantify the key sources of metals by designing monitoring structures for installation by the Coal Authority.

Design of Monitoring Structures

Undertake a site walk over to establish location and number of monitoring structures required. The Environment Agency has recommended four structures:

1. Spring from spoil – appears to be key source of metals
2. Upstream of the adit – to identify any additional inputs from spoil
3. Adit – appears to be relatively minor input from EA monitoring to date.
4. Prior to confluence with Teign (downstream of road) – total flux from site

Provide drawings and specification to enable The Coal Authority's Framework contractor to install the flow monitoring structures.

Install data loggers and propose a monitoring and sampling protocol.

Desk Top Study

Undertake a desk top study of available information to develop a conceptual model for the site.



Wheal Exmouth – Footpath Sign in middle of site.

The positioning of the monitoring structures will help determine long term treatment of the discharges. There is scope for two possible areas for treatment on site (a comprehensive review of potential locations has not yet been carried out).

The desk top study will accelerate the program by undertaking scoping work at this early stage. The desk top study will appraise all available information and recommend any further information required to complete the scoping study.

The key questions that will need to be addressed include:

1. Can the mine water be treated, and if so, what treatment options are available?
2. Can the mine water be captured?
3. Is suitable land for a treatment system likely to be available?
4. Is diffuse pollution (e.g. spoil heaps, tailings ponds) a significant source of pollution?
5. What options are feasible to deal with diffuse sources of metals?
6. Is there a risk of mine water outbreak?

A review of available mine plans and other information (e.g. internet sources) should be carried out to assess the likelihood of any changes in mine water flows, outbreak risk, and other issues relevant to the mine water discharges. This review will inform the conceptual model, and should make recommendations for future work.

5.2 Tasks

The Tasks required for the Design of Monitoring Structures & Desk Top Study:

Task No.	Task Requirement
S1	Start Up Meeting Discussion and clarification of the requirements of the Wheal Exmouth Scheme including agreeing the approach to the required deliverables.
S2	Site Visit 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 of the existing information. The Consultant shall consider the locations of raw discharge, capture, optional sites for treatment and point for outfall.
S3	Monitoring Structures The Consultant shall review the existing data available for the site and recommend the number and type of monitoring structures to be installed at Wheal Exmouth to enable a meaningful scoping study to be undertaken. The consultant will provide the monitoring structures specification and associated drawings to allow The Coal Authority to pass onto its Operational Contractor to install The Consultant will liaise with the Local Authority for any consent required for working in waterways.
S4	Environment and Ecological Surveys The Consultant shall undertake an Envirocheck of the area. The site is located in/adjacent to the National Park.
S5	Health & Safety

Task No.	Task Requirement
	<p>Ensure a Site Visit Risk Assessment is completed prior to any site visit. This should be reviewed post site visit and amended as necessary.</p> <p>Note: Be aware that the tip contains contaminants to an extent that nothing grows on the tip site in some areas. Use PPE to prevent inhaling wind borne particles.</p> <p>Some areas of the site can become waterlogged – wellington boots are advised.</p>
S6	<p>Risk Register</p> <p>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 Desk Top survey.</p>
S7	<p>Desk Top Study</p> <p>The Desk Top Study should incorporate all the tasks below plus recommendations for a subsequent phase scoping study.</p> <p>The following should be included:</p> <ul style="list-style-type: none"> • A review of all available mining plans associated with the location and make suitable reference in the Desktop study detailing the mining history local to the site. • A review of all hydrology information available. • Obtain an Envirocheck report and make suitable reference in the desk top study Report. • 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). • A review of the local plan to identify and potential for renewables and joint funding. <p>Provide a fully itemised and costed scope for this next phase of work i.e. Scoping Study. This will need to include a detailed description of all activities to be undertaken</p> <p>Reports should be delivered in electronic format to enable review by the Coal Authority (The report should be sent to Chrissie Mittenshaw-Hodge).</p>
S8	<p>Desk Top Study Document</p> <p>Taking into account the comments made under Task S7, the Consultant will produce the final desk top study and specification documents.</p> <p>Reports should be delivered in electronic format to enable review by the Coal Authority for final approval.</p>
S9	<p>Project Management</p> <p>The consultant must nominate a lead member of staff who will act as their Project Manager responsible for delivering this scheme.</p> <p>Fortnightly progress reports should be submitted to the Coal Authority. All project documents to be stored on Conject.</p>

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
Fortnightly progress reports.	Commencing from x Within x days of
Programme of deliverables	With Fee Submission
Desk Top Study and Monitoring Structure's design and specification.	As per agreed programme

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

- Scoping 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.

Submission of Invoices

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

Your invoices must be based on the contract rates/prices and be in sufficient detail to enable the contract to be easily identified.

Please clearly display the following information on your invoices and accrual schedule:

Name:	What to include	Date	Issue
Accruals	<p>Estimate of total spend to be undertaken within the month.</p> <p>All projects on the Attached Accrual template.</p>	Working day minus five (working day is the first working day of the calendar month)	<p>Emailed to financedepartment@coal.gov.uk</p>
Pre-approval	Actual value of works for the month. Must including a breakdown of costs	When costs available for month.	<p>Onto Conject, into the Finance consultant section for the appropriate project.</p> <p>For approval by appropriate Project manager.</p>
Invoice	<p>Invoice – the following information must be provided on the front of the invoice :-</p> <p>Cost Centre: 338</p> <p>Account Code: 39523</p> <p>Site Code:517</p> <p>Contract Number CA18/2311/Instr 198</p> <p>breakdown of hours spent by each member of staff on what tasks</p> <p>Contract / order reference</p> <p>Project title, including the site name</p> <p>The Coal Authority Project Manager</p>	Once approval received for pre-approval information on Conject.	<p>Emailed to financedepartment@coal.gov.uk or posted to Finance Department.</p>

8. Programme

- The PSC award date is planned for w/c 6th July 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	<p>EA internal report on preliminary monitoring including MINDAR spreadsheet and raw data. These data include results from the wider catchment but the focus of this contract is solely on Wheal Exmouth (also known as Canonteign Barton).</p> <div>   </div> <p>Microsoft Office Word 97 - 2003 Docu Microsoft Office Excel 97-2003 Works</p> <div>  </div> <p>Microsoft Office Excel 97-2003 Works</p>	2013	Environment Agency
B	<p>EA summary of flows on site (Word), and recommendations for flow structure locations (PPT)</p> <div>   </div> <p>Microsoft Office Word 97 - 2003 Docu Microsoft Office PowerPoint 97-2003 I</p>	2015	Environment Agency
C	<p>Working With Others – EA Guide for Staff</p> <div>  </div> <p>Working With Others.pdf</p>	-	Environment Agency
D	<p>EA Mine Waters Communications Plan Template</p> <div>  </div> <p>Comms Template.docx</p>	-	Environment Agency
E	<p>Risk Register</p> <div>  </div> <p>Risk Register.xlsx</p>	-	The Coal Authority