

Your ref: CA18/2311/Instruction 172

Our ref:

Tel: +44 (0)121 483 5000

Fax: +44 (0)121 483 5252

Ext no: +44 (0)121 483 5842

[REDACTED]

Project Manager
The Coal Authority
200 Lichfield Lane
Berryhill
Mansfield
Nottinghamshire
NG18 4RG

info@atkinsglobal.com

www.atkinsglobal.com

16 Mar 2015

Dear [REDACTED]

WFD Abandoned Metal Mines Programme Killhope – Park Level – CA18/2311 – Feasibility Study

This letter sets out our approach to successfully deliver the remediation feasibility study of Killhope Park Level on behalf of The Coal Authority (TCA). As requested, our approach will take into account the site constraints, key risks, and treatment options, to achieve the project milestones.

Approach/Methodology

The following outlines our approach/methodology, scope of services and deliverables to address the brief set out in Project Scope Document (CA18/2311/Instruction 172 for the required feasibility study). The works are split into:

1. Start-up Meeting and Site Visit;
2. Stakeholder Communication Plan;
3. Review of the Existing Information and Data;
4. Appraisal of Remediation Options;
5. Sampling and Monitoring;
6. Ground Investigation;
7. Environmental and Ecological Surveys;
8. Utilities and Services;
9. Health and Safety;
10. Risk Register;
11. Feasibility Reporting;
12. Review Meeting; and
13. Project Management.

It is proposed to develop a number of technical notes as summarised below which will inform the feasibility report and become appendices thereof:

- Review of previous studies;
- Ecological Desk Study;
- Archaeological Desk Study;
- Landscape Desk Study;
- Geo-environmental Desk Study; and
- Geotechnical Desk Study.

Where possible, it is envisaged that the technical notes will be fed through to TCA when complete for comment and as such will have been reviewed prior to input into the final feasibility report.

1. Start-up Meeting and Site Visits

It is proposed to combine the start-up meeting and site visit to streamline the process. It is proposed that when the contract is awarded a site visit will be organised by TCA and attended by the following organisations TCA, EA, ANUP project team. We assume the meeting will also be fed into by TCA's Operations, Estates and Planning Teams to provide early advice on treatment options from previous experience/schemes, requirements of easements of pipe-works, planning and permitting issues, and a stakeholder engagement strategy where appropriate.

2. Stakeholder Management and Engagement

A Stakeholder Communications Plan will be produced for the scheme, similar to the Force Crag scheme plan. The Communications Plan should be updated regularly to reflect consultation outcomes.

It is acknowledged that historically the communications for the North Pennines schemes have been carried out by the AONB Partnership (Sarah Tooze) and Sarah will lead the stakeholder liaison going forward. It is understood this is the case for this scheme. Therefore, our cost estimate makes provision for research to identify the key stakeholders associated with the project along with details of suitable contact details only. It does not allow for actual discussion with identified stakeholders.

3. Review of Previous Studies

- Review the historical work and data available for the site to identifying the headline issues and constraints and focus on the areas of required future work;
- Carry out a site visit (see meetings section); and
- Refine conceptual site model as appropriate.

It is understood that the following reports have been prepared in relation to the proposed scheme:

- Killhope Burn Non-coal Fact Sheet – TCA;
- Killhope Metal Mine High Level Feasibility Report – Atkins July 2012;
- Killhope Metal Mine (Burtree Pasture) High Level Scoping Report – Atkins November 2013; and
- Examination of the Mass Loading of Zinc in the Killhope Burn Catchment – Chris Hood, 2010.

Information of particular relevance from the reviewed reports will only be summarised and cross referenced in the feasibility review. It is not intended that the feasibility report re-iterates information which has already been covered in previous studies.

In addition to the previous studies the following historic documentation and site information will also be required for review. It is assumed that this information would be supplied by the Coal Authority and no allowance has been made for obtaining the information from third parties (excluding the historical maps or BGS borehole logs).

- Mining reports and plans if available;
- All water quality and flow data to date for the discharges and water courses;
- Topographical survey information or LIDAR data;
- Aerial photographs;
- Historical OS Plans supplied by Envirocheck;
- BGS Borehole Logs; and
- Services search information.

4. Appraisal of Remedial Options

It is proposed to appraise the capture, transfer and treatment options for the mine water at Park Level. The appraisal will cover the following aspects as requested by TCA.

- An evaluation of suitable remedial techniques and technologies to address the discharges from Park Level. It is anticipated that both active and passive treatment options will be discussed at the site visit and these options will be taken forward to the appraisal in conjunction with input from TCA following the findings from the URS treatment technologies assessment;

- Evaluation of the practicability of the technologies with respect to technical issues, site area and constraints, time scales and regulatory constraints;
- Assessment of the effectiveness and durability of the technologies not screened out due to the above constraints;
- Identification of possible sources of diffuse pollution in the immediate environs Park Level and possible ways of managing such impacts;
- High level appraisal of costs (capital and operational) and benefit;
- Identify the associated risks of each of the technologies not screened out due to the above constraints;
- Justifications for screening out certain technologies;
- Identify barriers to implementing a scheme; and
- Identification of uncertainties or data gaps associated with the preferred approach.

Costs have been included to compile a constraints plan summarising the constraints identified from the site visit, desk studies and appraisal work for inclusion in the feasibility report.

Approximate high level whole life costs for the preferred option will be developed for inclusion in the feasibility report. Where appropriate, liaison will be carried out with TCA and their construction and operation contractors to include scheme development and construction costs and on-going maintenance and operational costs. The whole life costs will be reviewed against the benefit for the catchment (assumed to be provided by TCA) and the other constraints and environmental benefits for the scheme.

As part of the initial geotechnical desk study, any recent topographical survey data, where applicable, and previous desk based land suitability studies will be reviewed to inform GI recommendations and capture, transfer and treatment options appraisal. The cost for this aspect of work are included in the options appraisal and geotechnical desk study packages of work.

Time has been included in this offer to liaise with TCA Property Manager to understand the land ownership issues and the impacts on the scheme including access and services and to scope the site surveys that will be required during outline design stage such that suitable licences can be obtained.

5. Sampling and Monitoring

A review of sampling and monitoring data associated with Park Level will be undertaken and suitably referenced in the feasibility report. It is accepted that a large proportion of this data has been reviewed as part of the 2012 Killhope Metal Mine High Level Feasibility Report, produced by Atkins. However, since issue of the report it is understood autonomous flow monitoring has been conducted at Park level and therefore some extended data review and analysis will be necessary to inform the basis of the feasibility assessment.

In order to identify at an early stage if additional monitoring data is required to complete the study it is proposed to consult [REDACTED] as part of the ANUP partnership to inform whether the data is sufficient upon which to base a concept treatment design. We will inform the TCA if the data is insufficient at the earliest possible opportunity outlining our recommendations for further sampling and monitoring.

6. Ground Investigation

In conducting the remediation feasibility study we shall consider the nature of ground and land in vicinity of the site and include descriptions within the feasibility report to help inform subsequent ground investigation (GI) and outline design. However, our offer specifically excludes provision of GI design, site observation/supervision and associated interpretive reporting services.

Geotechnical Desk Study

Our proposed scope of geotechnical works are as follow:

- Site visit by Principal Geotechnical Engineer and Geotechnical Engineer to inform desk study;
- Compilation of existing desk study and ground investigation information provided by TCA;
- Enquiries to the local council and Mines Society and Killhope Mining Heritage Museum to obtain possible records for the mine and surrounding area if pertinent; and

- Geotechnical review of information and input to feasibility report, outlining recommendations for future GI, where required.

7. Environment and Ecological Surveys and Assessments

It is proposed to undertake desk based assessments for the following disciplines, where applicable, to provide the necessary details of the site and features to be surveyed by one of the TCA framework surveyors:

- Ecology;
- Heritage and Archaeology;
- Landscape; and
- Geo-environmental.

It is recognised that comprehensive assessments for ecology, geo-environmental, heritage and archaeology have been provided for the site and surrounding land at Killhope Park Level as part of the 2012 Killhope Metal Mine High Level Feasibility Report produced by Atkins. Information of particular relevance from the reviewed reports will be summarised and cross referenced in the respective assessments; however it is not intended that the work re-iterates information which has already been covered and which remains valid. Principally, the revised desk studies will focus on outlining the key constraints to be incorporated into the feasibility assessment but also provide survey recommendations for the site(s) that are considered feasible for implementation of a Mine Water Treatment Scheme (MWTS). In limiting duplication of existing work, cost savings will be made wherever possible.

Ecology

We propose to undertake a Preliminary Ecological Appraisal of the site and surrounding area as part of the feasibility study. We will detail the baseline ecological conditions of the site and surrounding land, identify any potential ecological constraints, recommend appropriate avoidance and mitigation measures, and identify the requirement for any further ecological surveys or assessment, e.g. legally protected species surveys if those species are identified. Existing ecological information for the site and its immediate surroundings will be obtained to inform the desk study. A review of the Multi-Agency Geographic Information for the Countryside (MAGIC) website will be undertaken to gather information on SPA, SAC, SSSI, NNR and LNR within 2km of the scheme and notable habitats within 1km. A data request will be made to Cumbria Biodiversity Data Centre (the Local Environmental Records Centre) in order to obtain the information on Local Wildlife Site (LWS) and legally protected species (fauna and flora).

It is not proposed to undertake an ecological walkover survey of the area.

Heritage and Archaeology

Should a Historic Environment Desk Based Assessment or Heritage & Archaeology Impact Assessment report be required to support the planning services it will include the following:

- Brief review of past archaeological investigations and assessments where available;
- Review of any geotechnical data of relevance to heritage & archaeology (e.g. borehole logs);
- Review of the proposed treatment concept that is relevant to heritage & archaeology; and
- Recommendations for any further studies or mitigation work in respect of heritage assets.

The heritage and archaeology works will be carried out in reference to the Institute for Archaeologists Standards and Guidance on Historic Environment Desk Based Assessment (2012) and English Heritage's Guidance the Setting of Heritage Assets (2012).

It is not proposed to undertake a heritage/archaeological walkover survey of the area.

Landscape

We propose to undertake a high level Landscape and Visual Appraisal which aims to be a supporting document to inform the layout and final design of a preferred scheme and inform the production of the Feasibility Report. The appraisal reporting will follow a methodology developed in accordance with current best practice guidance (including the 2013 Guidelines for Landscape and Visual Impact Assessment). A desk study will be undertaken to identify the potentially sensitive landscape receptors (the landscape character area(s) and associated value and sensitivity to change) by reference to OS maps and existing character studies. Potential effects on landscape character will be assessed by taking into the account characteristics and management guidelines of relevant landscape character assessment at the local level.

It is not proposed to undertake a landscape and visual walkover survey of the area.

Geo-environmental Assessment

We propose a geo-environmental desk study will be carried out to use the existing information from TCA and other available resources to establish current conditions at the site. We will provide the geo-environmental desk study as a technical note including advice on the chemical suite and incorporating the estimated amount of environmental sampling likely to be required as part of a future GI. The outcomes of the geo-environmental desk study will inform the Feasibility Report.

8. Utilities and Services, Licences and Permits and Planning

The services required for this aspect of work will include the identification of the extents required for the services and utilities search. It is assumed TCA will order a Cornerstone report to input into the feasibility reporting. A composite services plot will be provided for the site providing CAD ready (DWG or equivalent) layers are obtained from Cornerstone to facilitate drawing production.

It is proposed to undertake an assessment of constraints and availability of capacity for required services and assess the viability of supplying utilities for the options considered. The outcome of these assessments will be summarised in the feasibility report.

No time has been included for liaison with the Environment Agency, Natural England and English Heritage to determine the permits and licences, consents and permits required to implement a preferred scheme.

It is assumed that TCA's planning team will carry out all planning services with ANUP providing support through the initial liaison period. However, due to the infancy of a preferred option no time has been included to support TCA during this time.

9. Health and Safety

Atkins will consider health and safety throughout the project and will liaise with TCA SHE team, early in the process. Where significant risks are identified then we will make design mitigation recommendations for inclusion in the feasibility report.

10. Risk Register

It is proposed to develop the risk register for the scheme following the initial site visit. The risk register will be updated following each progress meeting and will be included in the final feasibility report.

11. Reporting

Costs have been included to compile the information in the technical notes together with comments from the Environment Agency, Stakeholders (providing a single summary is provided by Sarah Tooze at AONB) and TCA to produce the feasibility report document and appendices.

The outcome of the feasibility report will be to provide recommendations for a preferred solution option for forward development taking into account the constraints identified as part of this commission (i.e. planning, licences, land acquisition, cost benefit ratios and environmental impacts etc.).

The production of the following plans and drawings are proposed as part of this scope of services, however these may vary due to the outcome of the data review and site visit discussions:

- Site location plan;
- Constraints plan;

- Indicative capture and transfer locations/routes plan;
- Indicative treatment site plan; and
- Composite services pan.

12. Review Meeting

Our offer includes a nominal half day meeting at the TCA offices to present the findings of the draft feasibility assessment. A nominal amount of time has been included to pull together a presentation (PowerPoint or similar) of the principal outcomes to be delivered to key stakeholders at the review meeting.

It is understood the feasibility report will be reviewed against the objectives and purpose of the study such that a number of queries and comments may need to be addressed following the initial review and taking into account the actions of the review meeting. We have allowed for nominal amount of time to address such concerns prior to issue of the final feasibility report. However, multiple revisions to the draft feasibility report are excluded from our cost estimate.

13. Project Common Services

As indicated in TCA's Project Scope, the programme for this package runs from the contract award to the completion of the final feasibility report (approx. 16 weeks after contact award). We will produce and maintain monthly a detailed Master Project Programme, spanning activities up to and including the post construction stage based on the indicative programme issued with this offer.

We will provide regular updates to the TCA PM through telephone conferencing with respect to the project risk register, accruals and invoicing during the duration of the instruction; it is assumed these will be held fortnightly, as outlined in the scope of services. Progress reports will be updated on a monthly basis throughout the project.

As part of our role we will develop and maintain the project Communication & Stakeholder Management Plan in conjunction with TCA PM.

Meetings

Our budget includes provision for the following meetings:

- One site visit and project start-up meeting to be undertaken at the start of the project (2 staff attending);
- One site visit (2 staff attending) to be undertaken as part of the Geotechnical Desk Study; and
- One review meeting with TCA and other stakeholders in Mansfield to present the findings of the feasibility assessment.

Future Work

It is anticipated that additional future work will be required for Park Level however such activities have not been identified at this time and are not included in this scope of services. A future instruction would be needed where additional services are required.

Assumptions and Exclusions

- It is understood from Section 2 of the offer document that the scope is to complete a feasibility study to evaluate the identified option(s) to capture, transfer, treat and discharge mine water at Killhope (Park Level), County Durham only;
- It is recognised that the TCA are also keen to identify sources of diffuse pollution which may be contributing to pollution to the Killhope Burn. As part of the remediation feasibility study of Killhope Park Level we will outline whether diffuse pollution is implied through the assessment of chemical loading data. At high level, we will also attempt to identify areas of potential sources of diffuse pollution that can be observed during site visit and restricted to those areas accessed. Our offer excludes assessment of catchment wide impacts from diffuse sources of pollution and potential mitigation measures. We cannot guarantee that the full extent of potential diffuse sources of pollution will be characterised as part of the assessment;
- Only one site visit has been requested in the scope of services. We have also provided costs for one additional site visit to be conducted by the geotechnical team to inform the Geotechnical Desk Study once the project is underway;

- Our cost estimate makes provision for research to identify the key stakeholders associated with the project along with details of suitable contact details only. All liaison with stakeholders shall be undertaken by AONB Partnership (Sarah Tooze), apart from those meetings proposed in the cost breakdown. Should attendance of further meetings by Atkins be required, additional fees will be agreed with TCA in the form of a Compensation Event (CE);
- Only areas either identified in the monitoring reports or specifically identified during the site visit will be investigated for the feasibility assessment;
- Indicative whole life costs including capital and annual operational costs of each option will be high level estimates based on assumptions made from the available information. However, it should be noted that all the estimates of costs and maintenance requirements in the remediation options appraisal likely to be subject to evaluation by full scale trials and will require input from TCA Operations team;
- No flood risk assessments will be undertaken although the associated risks will be identified within the site constraints;
- Any consultation required with landowners will be undertaken by TCA;
- No ecology, landscape or archaeology site surveys are included in this fee estimate;
- Heritage & archaeological input assumes no new constraints are identified during the site check. Should additional works be required, a variation to the scope and fees will be provided;
- Any additional ecological (e.g. for legally protected species) surveys, assessments, reporting implementation of any recommended avoidance, mitigation or compensation measures, other than those stated above, are excluded from the scope of this fee estimate;
- No allowance has been made for permit/consent/licence or planning application fees or the production of the applications themselves. The fees are to be paid by TCA;
- No allowance has been made for carrying out any monitoring at the site and surrounding area;
- It is not envisaged that licences for works within a highway are required however if needed TCA (or their contractor as delegated) is responsible for obtaining licences to undertake any works within the highway boundary including traffic management approvals;
- Only recommendations for future GI will be made in the feasibility assessment. Our offer specifically excludes any GI design and specification, GI site observation/supervision and associated interpretive reporting of GI findings;
- Our offer excludes provision for providing a planning appraisal relating to the site or the preferred scheme;
- Our offer excludes provision for providing a planning application and associated support relating to the site or preferred scheme;
- Consents to access the site will be obtained by TCA;
- The cost of detailed services surveys are excluded from this fee estimate as it is assumed this will be provided by TCA;
- The site is safe to access and there are no H&S constraints which cannot be easily mitigated;
- Our offer excludes services for providing outline or detailed design of the preferred scheme option that the TCA wish to progress;
- Excluding the Historical OS Plans and Borehole Logs, all of the documents and data detailed in Task 3 will be supplied by TCA and no allowance has been made for obtaining the information from third parties other than detailed in the ;
- It is assumed TCA will supply the relevant mine records, monitoring data, service information, topographical survey data and OS tiles for the site at no extra cost to Atkins;
- Where changes to the scope of services or work packages are identified a compensation event (CE) will be provided to the TCA for approval and no additional services will be conducted until instructed;
- Only one revision of the draft deliverables is budgeted based on a single set of comments from TCA, where additional amendments be required, a CE will be provided for approval; and
- This offer excludes printing costs as it assumes electronic submission of all deliverables.

Deliverables

Atkins will prepare the following reports:

- Monthly progress updates;
- Monthly financial reporting; and
- Feasibility report including appraisal of remedial options and supporting appendices.

Budget Estimate

Our budget cost estimate for consultancy services are detailed in the Priced Work Breakdown attached based on the CA18/2311 General Engineering contract. Please note that we have included the [REDACTED] costs as a pass through expense. The costs for each package of works will be reviewed and revised where appropriate prior to the commencement of each stage. All costs are exclusive of Value Added Tax (VAT).

| Task | Ref | Atkins Costs | [REDACTED] | Expenses | Total |
|---|-----------|--------------|------------|------------|----------------|
| Project Management | F16 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Start-up Meeting and Site Visit | F1 & F2 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Stakeholder Communications Plan | F3 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Review of Previous studies & background information | F4 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Appraisal of Remedial Options | F5 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Sampling and Monitoring | F6 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Ground Investigations | F7 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Environment and Ecological Surveys | F8 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Utilities and Services | F9 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Health and Safety | F10 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Risk Register | F11 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Reporting | F12 & F13 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Review Meeting | F14 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Final Feasibility Report | F15 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Total | | [REDACTED] | [REDACTED] | [REDACTED] | £44,915 |

Programme

On appointment we would expect the works to be programmed as detailed in the table below.

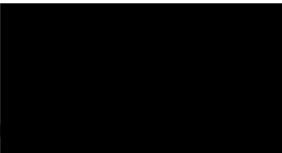
It is envisaged that the technical reports will be fed through to TCA when complete for comment and as such will have been reviewed prior to input into the final feasibility report.

| Task | Time Scale |
|--|--|
| Monthly programme and progress updates and financial reporting | 1 st report one month after award and monthly thereafter. |
| Draft feasibility report, including all tasks described above. | 19 th June 2015 |
| Review meeting | 6 th July 2015 |
| Final feasibility report | 20 th July 2015 |

We trust this budget estimate meets your requirements. Please do not hesitate to contact myself should you need further information.

Yours sincerely,

For Atkins Limited


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Framework Manager