Consultation on the proposed mine water treatment schemes in Nenthead and Nentsberry.

Report of open house session and evening workshop, Nenthead Village Hall, Nenthead, 13th March 2017

Introduction:

This report captures the discussion points raised at the public meetings which took place on Monday 13th March 2017 at Nenthead Village Hall, Nenthead. The evening meeting was facilitated and recorded by Simon Wilson and Karen Saunders from Wilson Sherriff. Wilson Sherriff are the independent facilitation and engagement specialists engaged by the Coal Authority to support the consultation and engagement activities for the proposed mine water treatment schemes in Nenthead and Nentsberry.

Two sessions were held:

- An open house drop-in session, held from 2-5pm, where people could come and meet members of the Coal Authority/Environment Agency project team to discuss individual concerns and queries.
- A public workshop, held from 6-8pm, involving a facilitated discussion, with a mixture of whole group and small group discussions.

15 people attended the drop-in session and 13 attended the evening workshop. Of these, some people had attended both sessions.

Feedback forms were available to complete during the event or return via post or email. The consultation is also being made available on-line https://www.gov.uk/government/publications/haggs-mine-water-treatment-scheme

The deadline for responses is 31st March 2017 and a separate summary of the feedback received will be produced and made available on the gov.uk website.

Open house drop in session:

A series of exhibition boards were available for people to have a look at to get information on the background to the overarching Water and Abandoned Metal Mine (WAMM) programme, the consultation process and the details of the proposed scheme. Members of staff from the Coal Authority/Environment Agency project team were available to speak to on a one to one basis. The boards included large-scale maps of the ‘long list’ of areas that had been identified for further assessment as potential locations for a mine water treatment scheme.

As well as having the option to complete the feedback form, people were also invited to write comments and/or thoughts on the different areas on post-its and leave them on the
flip chart for other people to read. These post-it notes were left on display throughout the
duration of the event and in the evening workshop as well.

Comments left on the flip charts:

- Areas 20, 2, 40, 41, 42 and 39 are the most preferable because they are the furthest
  away from people.
- 40 – possibly the better site, but worried about access.
- 23 – partly into the tailings dam. Locally known as ‘The Dam.’
- Village amenity should be paramount ➔ growing population in the village means a
  remote (or more remote) location with pumped storage is essential! People do not
  want what is a semi-industrial process in their village.
- Why can’t it all be piped to Nentsberry?
- Monthly reports on notice boards and to Councillors please – just to say what is
  happening such as monitoring visits; people in yellow coats out and about; any
  dredging etc.
- Area 17 – school playing field; reclaimed woodland area.
- 21 and 23 – former tailings dam, now replanted with scrub and hawthorn, with
  enhanced wildlife.
- If the scheme is acceptable at all, the original site (Area 38 on the map, with gravity
  feed) offers overwhelmingly the best. The objections now raised would apply to any
  of the sites, except perhaps the highest and most impractical – if the evidence
  supports them.
- Need to make sure the Primary School in Nenthead remains viable and that the
  village continues to attract new families with young children. ➔ concern if the
  scheme with ponds as a potential hazard is placed near the school or in the village.
- Not in the village because it would be an eyesore
- Not in the village – too many people live here.
- You already have problems at Force Crag

Evening Workshop – 6 pm to 8pm
The evening workshop was facilitated by Simon Wilson and Karen Saunders from Wilson
Sherriff. Simon welcomed everyone to the meeting and asked people to introduce
themselves.

Session One – The Story So Far
Cheryl Donohoe from the Coal Authority gave the group an update on the current status of
the project, reminded people of why there was a need to treat the mine water discharges
and explained that the focus of this round of engagement was to get feedback from the
local community on the ‘long list’ of potential areas that had been identified.
Following her update, participants were invited to ask questions of clarification, which are
shown below:
**Question:** If half of the Zinc in the River Tyne comes from the River Nent, where does the rest of it come from and why aren’t you addressing that?

**Response:** About half of the Zinc is from the River Nent; 10-20% enters the river upstream of Alston; 20-30% is from the River Allen and the remainder is from heavy metals bound up in sediment in the river banks in the River South Tyne downstream of the Nent and Allen. The Coal Authority/Environment Agency are looking at 8-10 different mine water treatment schemes at the moment, including addressing runoff from spoil heaps.

**Question:** How much heavy metals can you take out using sediment traps? Can you do more of them?

**Response:** The proposed new sediment trap at Nenthall will capture 1-2 tonnes per year, which equates to about 1-2% of the total amount entering the estuary. The Coal Authority dug out about 340 tonnes of sediment from the sediment traps in Nenthead last March, which removed 7-10 tonnes of zinc, cadmium and lead. These traps were installed by Cumbria County Council in the late 1990s but we don’t know how long it took for them to fill up. In the River Nent, the metals are in bigger particles, but in the River South Tyne the metals are associated with finer material, making it more difficult to remove using sediment traps.

**Question:** Have you done any empirical modelling?

**Response:** No, we haven’t done any empirical modelling, but we look at how much metal comes from where, and how polluted the river is for each round of monitoring. The amount of metals in the water changes in direct response to the amount of rainfall. At low river flows, the levels of zinc are up to 130 times the acceptable level and at high flows, the river is still polluted by 20-30 times the acceptable level.

**Question:** Why doesn’t more metal fall out as it passes the weirs?

**Response:** The weirs don’t slow the flow down sufficiently for all the sediment to ‘drop out’ of the water. The metals are also partially soluble in water and the levels of heavy metal carried in the “dissolved phase” are high enough to be damaging to wildlife.

**Question:** How damaging is it? We don’t want the SSSI to be affected.

**Response:** We won’t be able to restore the river to a pristine, “pre-mining” condition, but at the moment about 60km of the river is being impacted.

**Session Two – Your views on the long list**

Michael Sherman from the Coal Authority then explained the process that the project team used to identify the areas that have been identified for further assessment and consideration as potential locations for a mine water treatment scheme.
Following the presentation, participants were invited to ask questions of clarification. These are summarised below and grouped into themes, so do not appear in the exact order in which they were asked:

**Land for a Scheme:**

**Question:** What happens if a site is on land and the landowner says he/she won’t sell?

**Response:** Then a scheme would not progress on that site. There is no option to do a compulsory land purchase.

**Question:** Could you do both schemes in one place?

**Response:** Potentially, but we haven’t considered that option in detail.

**Question:** If you have to cross another landowner’s land to get pipes to or from your chosen site, would that need permission from all those landowners as well as the site owner?

**Response:** Yes, and so it becomes a more complex process. In that situation, we would explore the potential for laying the pipeline along an existing route such as a road. We are in the process of contacting all the landowners for the different areas.

**Question:** If you haven’t already checked if a landowner is willing to sell their land, aren’t we wasting our time, as we might choose a site and then the landowner says no.

**Response:** We are doing both stages in parallel i.e. considering the different areas and contacting landowners to see if they would be interested in selling their land.

**Proposal:** If we unanimously say ‘no’ to a number of sites and then they appear on the short-list, the team won’t be welcomed back. Can we propose ‘no’ to all the orange sites?

This proposal was returned to at the end of the meeting and a participant asked the group to vote on whether they agreed that all the orange sites should be excluded from further consideration. 12 out of 15 people agreed.

**Question:** What happens if no one wants to sell any land?

**Response:** If no landowner was willing to sell their land, then it wouldn’t be possible to do a scheme.

**Odour management:**

**Question:** What about the odour from Force Crag? The site is failing and no one would want that next to their house.

**Response:** There is odour at Force Crag, but that is expected. The site is not failing. Due to its remote location, about three miles from the nearest house, there was no need to install any odour management measures. What we know is that the odour is coming from a particular point and we know where the H₂S comes from. We are confident that we can treat any odour generated from the process so that there is no odour beyond the site boundary by designing it not to cause an odour problem. Our design consultants will be reviewing the design so that it doesn’t cause an odour problem.
**Question:** Where does the gas come from?

**Response:** The gas, H$_2$S smells like rotten eggs. As water leaves the mine, it contains sulphate which it has picked up from being in contact with the rocks as it moves through them. The sulphate doesn’t smell. Natural bacteria in the treatment compost converts the sulphate to sulphide which binds the metals in the water into metal sulphide (as it was originally in the mine). This process creates an excess of sulphide which reacts with the hydrogen in water to form Hydrogen Sulphide, which is dissolved in the water. When the water effluent emerges and meets the air, the Hydrogen Sulphide is released from the water, creating the bad egg smell.

**Question:** Hydrogen Sulphide is heavy and in confined spaces can be deadly. Does the team know what levels are considered safe and has it done any safety investigations into it?

**Response:** There are two aspects to the release of H$_2$S. One relates to safety, which the Health and Safety Executive set levels for and the other is a nuisance issue, for which levels are measured in odour units. Gas analysers have been installed at Force Crag and would be installed for this scheme, including a monitoring point which would be used as a compliance check point by planners to ensure that no odour went beyond the site boundary.

**Question:** Will the odour control method be tested?

**Response:** Many industries have to control odours from hydrogen sulphide and so there are several widely used technologies. The treatment system designers are developing the best way to control odours at the moment. Our consultants carried out a small trial at the Force Crag site to test how effective hydrogen peroxide is at converting hydrogen sulphide to sulphate. This information will be used to inform the design of the scheme.

**Question:** Can you put odour control measures in at Force Crag?

**Response:** Unfortunately, we can’t retrofit odour control measures in at Force Crag. But we have done some trials looking at using dosing to control odour and the results of those will be used to influence the design of this scheme.

**Question:** Has the odour review been peer reviewed?

**Response:** It has not been subject to academic peer review, but the original consultant’s report has been independently peer reviewed by another consultancy firm. This peer review included some recommendations which have been fed back in to the report completed by the original consultants.

**Question:** Have you thought of doing a small-scale scheme as a trial somewhere in this valley, which could help to give some confidence in the odour management?

**Response:** Newcastle University did a small trial at the Rampgill Level about 5 years ago in a treatment system containing 2.5 – 3 m$^3$ of compost which ran for two years. There was a faint smell near this, but the site was in a slightly confined space. We would need to do a much larger pilot to test it properly.
Comment: It is really important not to belittle or take the issue of H2S lightly. In the COSHH (Control of Substances Hazardous to Health) assessment for H2S, it says that the following effects can happen:

- 2-5 ppm – tearing of the eyes, headaches, bronchial issues in some asthma patients
- 500-700 ppm – staggering, collapse and potentially death within 30-50 minutes.

Response: We don’t take it lightly, but the levels of H2S that would be generated here are much lower than those quoted in the COSHH assessment.

Question: What is the gas bubbling up at Force Crag?

Response: It is not clear what the gas is. We are looking at that, but we believe that it is either Carbon Dioxide or methane.

Question: What would the chemicals be that you’d use for the dosing?

Response: Hydrogen Peroxide (as used to bleach hair) or Ozone, which would be generated on site.

Question: The ponds at Force Crag are being raked over at the moment – would that be normal here?

Response: At Force Crag, a mat of blue/green algae has developed. This restricts the flow of water down through the ponds, which affects the performance of the scheme. In designing a new scheme, the potential for this to happen will need to factored in, so that it doesn’t cause problems.

Question: Wouldn’t it be better to take another year to sort out the issues at Force Crag and then come back to develop a scheme here?

Response: We will feed the learning from Force Crag into the design of this scheme.

Question: Aren’t we effectively going to be an experimental site?

Response: No. Odour control measures are used effectively by lots of different industries in different situations.

Question: What would the discharge of the effluent do to the river after it’s been treated?

Response: The gases would be removed to meet the effluent target needed.

Question: If a site is developed and then there is an odour problem, what happens then?

Response: If we were unable to control odours, then ultimately we would have to switch off the scheme; it wouldn’t be in our interest to keep operating a scheme that is causing an odour issue. There would also be a compliance point at the site boundary, as part of our planning conditions because of concerns in relation to odour being a nuisance as well as for occupational health reasons.
**Question:** If the scheme was closed down, what would happen then?

**Response:** The water would bypass the treatment plant and flow directly into the river as it does now.

**Visual Impact and Safety:**

**Comment:** At Force Crag, the ponds are very ugly. No effort was made and ugly black plastic can be seen on the margins of the ponds.

**Response:** At Force Crag, the landscape is protected for its industrial heritage and the Coal Authority were encouraged to submit the design that is in place, in order for the scheme to fit with its industrial history. At any location in this area, the ponds would be lined, open water ponds but the shape could be more irregular, rounded +/- islands based on feedback from the community and other stakeholders.

**Question:** Will the water level go up and down?

**Response:** At Force Crag, the water levels fluctuate by 20-30 cm. The design would need to allow a bit of freeboard. A black liner may not be needed here, or could be covered up – it could be designed to blend into the landscape better.

**Comment:** Concern about safety and the visual impact as the ponds will need to be fenced, which isn’t suitable in an AONB.

**Response:** We can’t assess the potential safety issues for individual sites until the actual development site is known.

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**Session Three – Table Discussions and Feedback**

Each table was then asked to discuss the following questions:

1) Which of the areas are worth considering further and which are not?
2) What is important to you in choosing which areas to consider further?

**Feedback on the Areas:**

- A number of areas are easy to eliminate:
  - 23 – is sitting on an eroding spoil heap;
  - 21 – is sitting on a clay-capped mound of mine waste;
  - 17 – is the school playing field;
  - 18 – is the car park and also has some nice flora;
  - 22 – is where the orchids are;
  - 19 – is on a hillside, surrounded by houses
  - The orange sites on the map are just not viable.
- Area 26 – house there isn’t on mains water and this field is the source of water for the house
- You can rule out every site except 35 and 39 as these ones aren’t near any dwellings and while respecting the EA’s view on odour control measures, people are very concerned about the potential for odour, particularly given the odour at Force Crag.
- Area 22 – exclude, as it’s immediately in front of a house. Somewhere up on the fell would be better.
- Area 2 – most of the northern part of this area sits on old mine workings, water enters the mine here and would then be treated, so just creating a cycling of polluted water.
- Areas 35 and 39 seem to be the most obvious, but how would you reach them to do a scheme? **Response:** The areas have passed an initial screen on the ease of access, which is why they have been included.
- Instead of buying small pieces of land, why not use the money to take the water as far away as possible from habitation to help allay concerns over odour?

**Question:** Haven’t you chosen a site already?

**Response:** No. There is no preferred site at the moment. Each one has its own pros/cons and we will use a combination of the results of the site assessment using the Site Evaluation Criteria, information on land availability and feedback from the public and other stakeholders to help choose the short-list of sites.

**Question:** Are there any areas that you don’t think you’ll get planning for?

**Response:** We will need planning permission and we want to find a technically feasible solution which takes account of the communities’ views, but looking at the areas on the maps at present, we would certainly be unlikely to get planning permission on the school playing field.

**Question:** I am concerned that the Council don’t really care and all the orange areas shown on your map are all owned by the Council. If no site-specific discussions have been held with the Council recently, is the only site you’ve discussed with them, the previous one that you were going to submit?

**Response:** An outline proposal for the Haggs discharge was submitted in spring 2016 and we had also started landowner discussions, but as a result of the feedback we received we didn’t submit the application and changed our engagement approach, as well as widening the search area to start the process again. We have purchased the land that was the area for the original proposal for the Haggs mine water because we were already in discussions. The site is still ‘on the table’ along with all the other areas that have been identified, but if a scheme was progressed on that site, it would not be the same one. We are also in discussions with other landowners, but we haven’t bought any other land.

**Question:** if you want to be open about what you are doing, it would be good to know which landowners you have spoken to.

**Response:** We are still in the process of contacting landowners and they would not want us to say who they were. We need to respect that.
**Question:** You wouldn’t purchase land if you didn’t already have it as a preferred site.

**Response:** Our normal practice is to sometimes purchase land without necessarily knowing if a scheme will go ahead at that location. If needed, we would offer the land back up for sale, if we didn’t use it.

**Question:** So, if a landowner says yes, would you buy it?

**Response:** We are contacting and discussing this with all potential landowners and if someone was interested in selling their land, we would discuss ‘optioning it’ which we could do on several different sites. For the short-list though, all the relevant landowners would have said yes (although formally securing an “option” or buying the land will take some time).

**Technical Issues:**

**Question:** What were the findings of the paper examining the potential for the scheme to increase midges?


The three issues of concern were mosquitoes, biting midges and non-biting midges. The report concluded that that the habitat that would be created would not increase biting midges or mosquitoes, but that there was potential to increase the number of non-biting midges if a population already existed in the area. We would monitor the site and can manage it at time of the year when we know that an increase in population is likely and the report suggested five possible management measures.

**Question:** How often will the ponds need cleaning out?

**Response:** Based on experience in America and from laboratory tests, we expect they will need cleaning out every 10-20 years. The compost material will need replacing or topping up when it stops being effective. To do that, we would drain the pond down, dig the material out and dispose of it. A soil treatment plant in the Midlands has said that it would be able to accept the material.

**Question:** So if the material has to go somewhere else, you are just moving the problem around aren’t you?

**Response:** Yes, the material would be moved, but the heavy metals would be concentrated in a much smaller mass and taken to a safe, secure site for disposal. We could consider trying to recover the heavy metals for reuse, but at the moment it would not be economically viable to do that.

**Question:** Could you cover the ponds in some way, as was shown with the recent example on Countryfile.
Response: We will get our design consultant to consider this as part of the scheme.

Question: We have heard rumours about closing the mines and/or restricting access to them. Do you know about this?

Response: We are not aware of this and it is not part of our considerations for treating the mine water.

Feedback on Communications:

Comment: You need to do a survey of the whole village – not just the people in the room.

Response: In addition to these meetings, we are also making the information available online, we’ve held some individual meetings with stakeholders and extended communications via a Royal Mail letter drop to the whole of the CA9 postcode.

Comment: Several people said that they had not received a letter, despite having a CA9 postcode. There was a request for the team to improve its communications and:

- To communicate more via email
- Consider employing someone to do a letter drop to all properties instead of using the Post Office.

Response: For people on-line, information is made available on the gov.uk website and the maps/response form will be there from Wednesday morning. People can provide comments by email or post. For those not on email, a local information point(s) could be set up.

Comment: There was a suggestion that information/leaflets could be left in the village community store in Nenthead. [Note: after the meeting, there were a couple of additional suggestions that hardcopies could also be left in the library, which is an information centre and the local pub. They could also be posted on the Parish Council noticeboard, but would need to be laminated as there is no protection from the weather].

Comment: There was a request to change the time of the meeting. Many residents have a long commute and may not be able to get back in time to for a 6-8pm meeting. A weekend might be better.

Question: How long do we have to respond?

Response: The deadline is 31st March.

Question: Why is the consultation period only for two weeks? Given that lots of people didn’t know about the meeting and won’t know the information is available, two weeks is very short.

Response: The Coal Authority needs to continue with the assessment of the different areas ready for the next meeting towards the end of June.

Question: Do you have a deadline to implement the scheme?

Response: No, but at the meetings in October/November 2016, we set out an indicative timetable. By June we hope to identify three possible sites to get your views on, after which
we would identify a preferred site and come back to discuss the detailed design and layout of the scheme with you, which we are aiming to do in September.

**Question:** Have you discussed this with the Council, AONB etc?

**Response:** Yes, we have had some initial discussions with them and will continue to have discussions with them throughout the decision making process. At the short list stage, we will look at the detailed costings for a scheme on each site but would only have detailed discussions with local planners once a preferred site has been identified.

**Comment:** Information is not getting back into the community. There are about 2000 people here – many of us haven’t seen the minutes from the other meetings.

**Response:** Royal Mail delivered an invitation letter to all residents in CA9 and the minutes from the last event in October/November 2016 are on the gov.uk website.

**Question:** what about the minutes of your meetings with the County Council and AONB.

**Response:** Those meetings were general discussions about principles. We haven’t discussed any individual sites at those meetings.

**Comment:** You should make more use of social media. It’s useful and people look at it.

**Response:** We will look at this as part of an action to review communications for the project.

**Actions Agreed:**

1) CA/EA to review communications for the project to ensure information is available and accessible.

Simon Wilson then thanked everyone for attending and closed the meeting.

Wilson Sherriff
March 2017