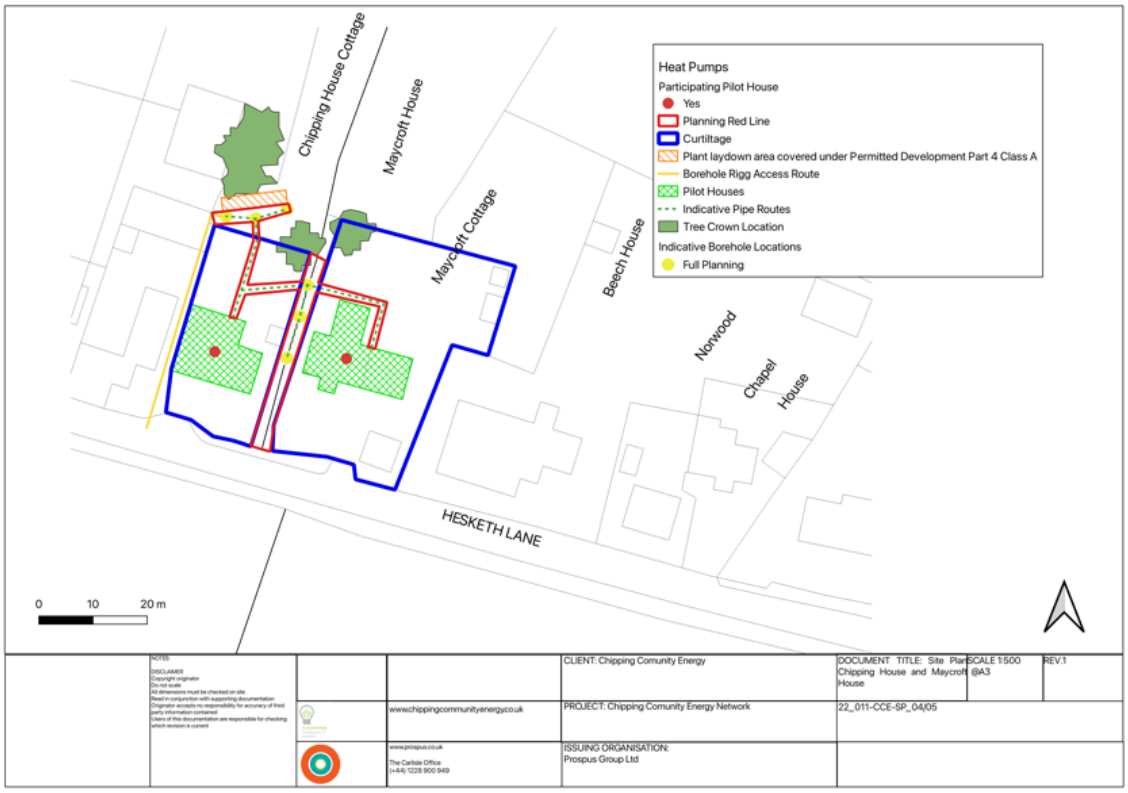
Planning, Design and Access Report

Proposal: Drilling of boreholes for ground source heating purposes and associated underground pipework on land to the rear and side of Chipping House Cottage, Hesketh Lane.

Site: Land to the rear and side of Chipping House Cottage, Hesketh Lane

Client: Chipping Community Energy Group (a working group of Chipping Parish Council)

LPA: Ribble Valley Borough Council



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1. Executive Summary

The proposal is for the installation of community-owned boreholes, underground pipework and ancillary equipment to provide ambient heat to two ground source heat pumps owned by the residents of Chipping House Cottage and Maycroft House, as part of a wider community-driven project to demonstrate a viable and replicable model to support the transition to low carbon heating for rural communities.

2. Introduction

Prospus Group has been instructed by Chipping Community Energy to submit a planning application for the drilling of boreholes and installation of supporting pipework and ancillary equipment as part of the wider village community heat network.

Within this document, Prospus will demonstrate a clear understanding of the site's constraints and opportunities and show a sensitive proposal that meets the particularities of the site and the requirements of the Client.

3. Background

The application forms part of the work being undertaken by the Chipping Community Energy Working Group. Further details can be found on the Group's website:
https://www.chippingcommunityenergy.co.uk/

The Working Group is seeking to develop a viable low carbon heat option for residents of rural villages like Chipping, to enable their transition from fossil fuel-based heat sources. By developing this pilot project, the Working Group are seeking to demonstrate that:

- low carbon technology can effectively deliver lower cost heat to rural communities, including those harder to heat old stone properties at the very heart of villages like Chipping; and
- that the model that is developed is replicable in rural communities more widely.

This technical solution builds on work completed by the Working Group over the last 3 years. It seeks to develop and deliver an innovative technical and commercial solution, that captures ambient ground heat from community owned boreholes as a heat source for ground source heat pumps owned and operated by the property owners.

The development of a network of community financed, developed and owned boreholes that are not hydraulically connected, enables those members of the community that seek to join the scheme the opportunity to benefit from access to:-

- **Economies of Scale**, achieved by delivering multiple systems at the same time, to reduce costs.
    - For example, approximately 30% of the cost of drilling borehole is associated with the cost of mobilising the borehole drilling rig to site. By drilling multiple boreholes at the same time, the cost per borehole reduces.
- **A community Scale Solution,** that enable all properties to benefit from low carbon heat, regardless of their location and available space.

- The ability to adopt a heat pump (air source or ground source) requires that the respective property has sufficient external space. Not all properties have sufficient external space in their own curtilage to adopt a heat pump. Examples of this in Chipping that are included in this application include 7 & 9 Windy St.

- **Access to community finance**, to enable all properties to benefit from low carbon heat regardless of their access to capital.
  - The typical cost of a borehole is in the range of £15,000 - £20,000, representing a significant cost barrier for many homeowners. The proposed scheme in Chipping seeks to overcome this by developing the boreholes through a community financed vehicle and charging homeowners an annual standing charge to access the ambient heat provided.

- **Access the most efficient heat pump technology**.
  - Ground source heat pumps benefit from being able to access warmer ambient heat input from the borehole (typical temperature range 50C to 100C) through the peak heating season, that an air source heat pump can access from the air (typically -50c to 50C) through the peak heating season. This means the ground source heat pump will be more efficient when most energy is needed, offering energy savings to the homeowner.
  - Work completed by Element Energy1 found that ground source heat pumps could reduce the annualised heat costs for homeowners by 16% - 18% compared to air source heat pumps.

In time, if the % of ground source heat pumps (by comparison to air source heat pumps) can be increased as communities transition to low carbon heating, then the peak electrical loads on the electrical grid can be reduced with significant benefit to local communities in terms of delaying or removing the need to install costly grid upgrade works. Work completed by Element Energy2 found that greater deployment of ground source heat pumps at a UK wide level could deliver 6.4TWh/year of electrical savings by 2050, broadly equivalent to 2.2 million homes.

The project team has undertaken significant research over the last three years, supported by grants from the Rural Community Energy Fund and the Green Home Finance Accelerator scheme. The research confirms that there is:

- **Wide consumer demand for such a solution**. Approximately 17% of the properties in the Chipping Ward have responded to community wide surveys to express interest in joining the scheme if the solution can be tested and proven.

- **Community interest in financing the project**, both locally and nationally. The community finance sector: has raised over £210M to support wider community projects since 2012; is well tested; and has legislation in place to support it.

- **Suitable geology and hydrology in the Chipping area**, following the installation of a test borehole in early 2023.

[1] Element Energy. Low Carbon Heat Study: An assessment of the impact of ground and air source heat pump deployment and heating demand flexibility on the GB electricity system and households. May2023.
[2] ibid.

- **A technically viable solution**, including in older stone properties. Detailed energy surveys have been completed on 14 of the properties included in the proposed pilot phase of the project.

4. Planning History

There is no relevant planning history on the site

5. Description of Proposal

This proposal is for the ambient heat loop for Chipping House Cottage and Maycroft House. In terms of a formal description of the planning application the following is offered:

Drilling of boreholes for ground source heating purposes and associated underground pipework on land to the rear and side of Chipping House Cottage, Hesketh Lane.

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6. Methods Statement

A summary of the installation process for the boreholes is included in Appendix One. This covers the key elements of the work involved in drilling the borehole and installing the flow and return pipework that will enable the borehole to supply ambient heat to ground source heat pumps in the respective adjacent property.

The boreholes are 'closed loop boreholes', in that they do not extract any water from the borehole, but instead circulates a heat transfer water mix through flow and return pipes that are installed in the borehole once it has been drilled to collect the ambient heat from the surrounding rock. This process is set out in more detail in Appendix One. The heat transfer mix will adhere to the Ground Source Heat Pump Association Vertical Bore Hole Standard and the Good practice guide for ground source heating and cooling.

7. Policy Assessment

National Planning Policy Framework

Chapter 14 -Meeting the Challenge of Climate Change, Flooding and Coastal Change - outlines how the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk.

Paragraph 156 - Local planning authorities should support community-led initiatives for renewable and low-carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.

Paragraph 158 – Determining factors for renewable and low carbon development – outlines that the applicant does not need to demonstrate the overall need for the development and approve the application if the impacts are acceptable.

Ribble Valley Borough Council Core Strategy 2008 – 2028 A Local Plan for Ribble Valley Adoption Version

The following policies are particularly relevant to this proposal and are copied out in full below:

Policy DMG1: General Considerations

Policy DME5 Renewable Energy

POLICY DMG1: GENERAL CONSIDERATIONS

IN DETERMINING PLANNING APPLICATIONS, ALL DEVELOPMENT MUST: DESIGN

1. BE OF A HIGH STANDARD OF BUILDING DESIGN WHICH CONSIDERS THE 8 BUILDING IN CONTEXT PRINCIPLES (FROM THE CABE/ENGLISH HERITAGE BUILDING ON CONTEXT TOOLKIT.
2. BE SYMPATHETIC TO EXISTING AND PROPOSED LAND USES IN TERMS OF ITS SIZE, INTENSITY AND NATURE AS WELL AS SCALE, MASSING, STYLE, FEATURES AND BUILDING MATERIALS.
3. CONSIDER THE DENSITY, LAYOUT AND RELATIONSHIP BETWEEN BUILDINGS, WHICH IS OF MAJOR IMPORTANCE. PARTICULAR EMPHASIS WILL BE PLACED ON VISUAL APPEARANCE AND THE RELATIONSHIP TO SURROUNDINGS, INCLUDING IMPACT ON LANDSCAPE CHARACTER, AS WELL AS THE EFFECTS OF DEVELOPMENT ON EXISTING AMENITIES.
4. USE SUSTAINABLE CONSTRUCTION TECHNIQUES WHERE POSSIBLE AND PROVIDE EVIDENCE THAT ENERGY EFFICIENCY, AS DESCRIBED WITHIN POLICY DME5, HAS BEEN INCORPORATED INTO SCHEMES WHERE POSSIBLE.
5. THE CODE FOR SUSTAINABLE HOMES AND LIFETIME HOMES, OR ANY SUBSEQUENT NATIONALLY RECOGNISED EQUIVALENT STANDARDS, SHOULD BE INCORPORATED INTO SCHEMES.

ACCESS

1. CONSIDER THE POTENTIAL TRAFFIC AND CAR PARKING IMPLICATIONS.
2. ENSURE SAFE ACCESS CAN BE PROVIDED WHICH IS SUITABLE TO ACCOMMODATE THE SCALE AND TYPE OF TRAFFIC LIKELY TO BE GENERATED.

3. CONSIDER THE PROTECTION AND ENHANCEMENT OF PUBLIC RIGHTS OF WAY AND ACCESS. AMENITY

1. NOT ADVERSELY AFFECT THE AMENITIES OF THE SURROUNDING AREA.
2. PROVIDE ADEQUATE DAY LIGHTING AND PRIVACY DISTANCES.
3. HAVE REGARD TO PUBLIC SAFETY AND SECURED BY DESIGN PRINCIPLES.
4. CONSIDER AIR QUALITY AND MITIGATE ADVERSE IMPACTS WHERE POSSIBLE.

ENVIRONMENT

1. CONSIDER THE ENVIRONMENTAL IMPLICATIONS SUCH AS SSSIS, COUNTY HERITAGE SITES, LOCAL NATURE RESERVES, BIODIVERSITY ACTION PLAN (BAP) HABITATS AND SPECIES, SPECIAL AREAS

OF CONSERVATION AND SPECIAL PROTECTED AREAS, PROTECTED SPECIES, GREEN CORRIDORS AND OTHER SITES OF NATURE CONSERVATION.

2. WITH REGARDS TO POSSIBLE EFFECTS UPON THE NATURAL ENVIRONMENT, THE COUNCIL PROPOSE THAT THE PRINCIPLES OF THE MITIGATION HIERARCHY BE FOLLOWED. THIS GIVES SEQUENTIAL PREFERENCE TO THE FOLLOWING: 1) ENHANCE THE ENVIRONMENT 2) AVOID THE IMPACT 3) MINIMISE THE IMPACT 4) RESTORE THE DAMAGE 5) COMPENSATE FOR THE DAMAGE 6) OFFSET THE DAMAGE.
3. ALL DEVELOPMENT MUST PROTECT AND ENHANCE HERITAGE ASSETS AND THEIR SETTINGS.
4. ALL NEW DEVELOPMENT PROPOSALS WILL BE REQUIRED TO TAKE INTO ACCOUNT THE RISKS ARISING FROM FORMER COAL MINING AND, WHERE NECESSARY, INCORPORATE SUITABLE MITIGATION MEASURES TO ADDRESS THEM.
5. ACHIEVE EFFICIENT LAND USE AND THE REUSE AND REMEDIATION OF PREVIOUSLY DEVELOPED SITES WHERE POSSIBLE. PREVIOUSLY DEVELOPED SITES SHOULD ALWAYS BE USED INSTEAD OF GREENFIELD SITES WHERE POSSIBLE

INFRASTRUCTURE

1. NOT RESULT IN THE NET LOSS OF IMPORTANT OPEN SPACE, INCLUDING PUBLIC AND PRIVATE PLAYING FIELDS WITHOUT A ROBUST ASSESSMENT THAT THE SITES ARE SURPLUS TO NEED. IN ASSESSING THIS, REGARD MUST BE HAD TO THE LEVEL OF PROVISION AND STANDARD OF PUBLIC OPEN SPACE IN THE AREA, THE IMPORTANCE OF PLAYING FIELDS AND THE NEED TO PROTECT SCHOOL PLAYING FIELDS TO MEET FUTURE NEEDS. REGARD WILL ALSO BE HAD TO THE LANDSCAPE OR TOWNSCAPE OF AN AREA AND THE IMPORTANCE THE OPEN SPACE HAS ON THIS.
2. HAVE REGARD TO THE AVAILABILITY TO KEY INFRASTRUCTURE WITH CAPACITY. WHERE KEY INFRASTRUCTURE WITH CAPACITY IS NOT AVAILABLE IT MAY BE NECESSARY TO PHASE DEVELOPMENT TO ALLOW INFRASTRUCTURE ENHANCEMENTS TO TAKE PLACE.
3. CONSIDER THE POTENTIAL IMPACT ON SOCIAL INFRASTRUCTURE PROVISION.

OTHER

1. NOT PREJUDICE FUTURE DEVELOPMENT WHICH WOULD PROVIDE SIGNIFICANT ENVIRONMENTAL AND AMENITY IMPROVEMENTS.

POLICY DME5: RENEWABLE ENERGY

THE BOROUGH COUNCIL WILL SUPPORT THE DEVELOPMENT OF RENEWABLE ENERGY SCHEMES, PROVIDING IT CAN BE SHOWN THAT SUCH DEVELOPMENTS WOULD NOT CAUSE UNACCEPTABLE HARM TO THE LOCAL ENVIRONMENT OR LOCAL AMENITY. IN ASSESSING PROPOSALS, THE BOROUGH COUNCIL WILL HAVE PARTICULAR REGARD TO THE FOLLOWING ISSUES:

1. THE IMMEDIATE AND WIDER IMPACT OF THE PROPOSED DEVELOPMENT ON THE LANDSCAPE, INCLUDING ITS VISUAL IMPACT AND THE CUMULATIVE IMPACTS OF DEVELOPMENT.

1. THE MEASURES TAKEN TO MINIMISE THE IMPACT OF THE PROPOSALS ON RESIDENTIAL AMENITY

2. THE POTENTIAL BENEFITS THE PROPOSALS MAY BRING
3. THE VISUAL IMPACT OF THE PROPOSALS, INCLUDING DESIGN, COLOUR AND SCALE
4. THE DEGREE TO WHICH NUISANCE CAUSED BY NOISE AND SHADOW FLICKER TO NEARBY RESIDENTIAL AMENITIES, AGRICULTURAL OPERATIONS, RECREATIONAL AREAS OR THE FUNCTION OF THE COUNTRYSIDE CAN BE MINIMISED
5. NATIONAL OR LOCAL TARGETS FOR GENERATING ENERGY FROM RENEWABLE SOURCES AND FOR REDUCING CARBON EMISSIONS AS SPECIFIED WITHIN POLICY DMG1
6. THE POTENTIAL IMPACT ON BIODIVERSITY.

THE COUNCIL WILL REQUIRE DECENTRALISED AND RENEWABLE OR LOW CARBON ENERGY IN NEW DEVELOPMENTS TO MEET NATIONAL STANDARDS

DEVELOPMENT PROPOSALS WITHIN OR CLOSE TO THE AONB, SITES OF SPECIAL SCIENTIFIC INTEREST, SPECIAL AREAS OF CONSERVATION AND SPECIAL PROTECTION AREAS, NOTABLE HABITATS AND SPECIES, LOCAL NATURE RESERVES, BIOLOGICAL HERITAGE SITES OR DESIGNATED HERITAGE ASSETS AND THEIR SETTING WILL NOT BE ALLOWED UNLESS:

7. THE PROPOSALS CANNOT BE LOCATED OUTSIDE SUCH STATUTORY DESIGNATED AREAS
8. IT CAN BE DEMONSTRATED THAT THE OBJECTIVES OF THE DESIGNATION OF THE AREA OR SITE WILL NOT BE COMPROMISED BY THE DEVELOPMENT
9. ANY ADVERSE ENVIRONMENTAL IMPACTS AS FAR AS PRACTICABLE HAVE BEEN MITIGATED

8. Commentary on Policy

There are no specific policies in the Local Policy Framework that deal specifically with the installation of Ground Source Heat Pumps, but there are policies that provide sufficient guidance for policy makers. These relate mostly to the protection of Heritage Assets, residential amenity and supporting the use of renewable energy technology. There is also recognition of the potential cumulative impact of certain renewable energy technologies. In this case the use of ground source heat pumps is a better alternative than air source heat pumps; which, although potentially less disruptive to install, likely contribute to greater amenity impacts to the resident with regards to potential visual and noise impacts. Within the AONB such factors are considered to be important when multiple deployments of this technology is proposed.

In general, the proposal will be unseen being mostly underground and the intention is to return the affected land surface to the condition it was in prior to the development; therefore any impact is likely to occur during construction only. Those impacts are discussed in the Construction Working Method statement in Appendix 1 and in the section on Archaeology below, and may be subject as appropriate to highways licences where the equipment needed is located temporarily on the public highway.

The proposal is supported by those policies that seek to encourage community based renewable energy proposals.

9. Material Considerations

10. Ecology

The areas involved are very small parcels of land and are not considered to be a significant habitat, being of grazing land. The works are temporary and the land will be restored to its previous condition in a few days following commencement. If necessary, an Ecological Clerk of works can be present during the works to ensure that impacts are minimised and no protected species or important habitats are adversely affected.

11. Trees

There are no trees affected by the proposal. Any trees close to the application sites are shown on the plans which demonstrate that the trees will not be affected.

12. Flood Risk

The site lies within Flood Zone 1

13. Proximity to Existing Water Extraction Points

To satisfy the Environment Agency's Good Practice Guide for GSHC the site was assessed to make sure that there are no existing water extraction points within 50 meters of the proposed boreholes and that the site isn't within 10 meters of a watercourse. See Appendix Two.

14. Archaeology

There is potential for features of archaeological interest to be disturbed during the construction. However, all due diligence has been undertaken insofar as it can be at this stage of the process. The County Historic Environment Record has been assessed for possible impact and the County Archaeologist has been contacted to seek any guidance as to the likelihood of any other potential areas of interest within the scope of the proposal. None has been identified. In addition to this, the Working Method Statement indicates that the works will be dug by hand for the first 1m depth. This is to ensure that no unknown services are disturbed and to allow any discovered features to be examined.

Overall the area of construction is small, comprising a borehole of about 150mm in diameter and a trench for the connecting pipework of about 500mm wide

15. Balancing Exercise

Planning decisions should be informed by a balancing exercise in which any negative impacts can be weighed against the positive policy and other material benefits of the proposal. Policies at both National and local level provide strong support for proposals of this type and encourage developments to transition to a low carbon future. The potential negative impacts of the proposal relate only to temporary impacts during construction or to as yet unknown impacts on small areas of potential

archaeological interest. It is not considered that these impacts outweigh the public benefit of securing a more sustainable heating system for those in the pilot phase of this rural community initiative and could, in any event be ameliorated by condition, if necessary. For sustainable development such as this, consent should be granted without delay.

16. Design and Access Statement

17. Context and Use

The site lies adjacent to the benefiting properties, the area is currently used as a footpath or grazing land and will be returned to that use once the work has been completed

18. Amount

The proposal will be for up to 6 borehole

19. Layout

The proposal will unalter the layout of the properties. The positions of the proposed boreholes are shown on the layout plans the exact location of the boreholes for these properties will be subject to a final engineering assessment regarding access to the drilling site and will likely either be to the rear of Chipping House Cottage or on the footpath land between Maycroft House and Chipping House Cottage.

20. Appearance

The appearance of each of the sites will be unaltered after the construction phase of the project

21. Landscaping

There is no landscaping associated with this proposal. All land affected will be returned to its previous condition after construction.

22. Access

Where the proposal will impact the public highway, public footpaths or land which functions as a public right of way, the appropriate licenses for the temporary deposit of equipment and appropriate Road Traffic Orders for temporary closures will be obtained in advance of any work taking place.

23. Conditions

There are no matters that could warrant refusal of this proposal and which could not be dealt with by condition.

As always it is considered good practice for an LPA to discuss any proposed conditions with the applicant before the decision is issued to avoid any unnecessary or unduly onerous ones.

24. Summary

This planning proposal seeks to provide up to 6 boreholes and connecting pipework for two properties which will form part of a pilot project for delivering a low carbon heating system to properties in rural settings. The impacts of the proposal are all small, temporary and connected to the construction phase of the project. The proposal is supported by a range of planning policies at both local and national level and the public benefits in terms of reducing greenhouse gas emissions are sufficient to outweigh any negative impacts caused during the construction phase. In addition the proposal will provide a replicable model for further deployment of this technology in areas which cannot transition to low carbon technology easily due to similar planning constraints such as heritage or landscape issues.

Appendix One: Summary of installation process.

Summary

The planning application for the low carbon heat network in Chipping relies on the installation of boreholes up to 200m deep adjacent to dwellings adopting a ground source heat-based heating system.

Once drilled the borehole, which comprises a drilled shaft of around 130mm (~5 inch) in diameter will have a continuous flow and return pipe installed throughout its length and then the gap between the pipe and the surrounding rock will be filled with grout to maintain the integrity of the surrounding rock and its strata, as required.

The flow and return pipe will be filled with water, pressure tested and sealed, or connected to the ground source heat pump in the adjacent property, through pipe work installed in trenches. The heat pump will then extract ambient heat from the rock by circulating chilled water through the borehole, and working like a fridge in reverse, will convert this ambient heat to usable heat for the property's heating and hot water.

The total length of the borehole will be carefully assessed to ensure that the surrounding rock can sustainably deliver heat to the property in the long-term. This heat will be recharged from surface summer heat & geothermal heat from the surrounding rock, to ensure that each year the extracted heat is naturally replenished.

The borehole size will depend on the amount of heat required by the house, calculated through detailed energy modelling for the property, using a computer simulation (based on the property size, rooms, usage, and fabric) and local weather data. A modern, well insulated 4 bed property may require a single borehole 50m deep, whereas an older large 5 bed stone property may require 2 boreholes of 200m in depth.

Drilling the borehole

The drilling of each borehole will be carefully manged with a method statement and risk assessment and in compliance with the MCS Specification for Ground Source Closed-loop Drilling.

As part of the risk assessment and method statement, the drilling contractor will undertake a risk assessment to evaluate the risks associated with the borehole and mitigation measures required. This process will include (but will not be limited to): a desk top search for buried services and utilities; an assessment of Coal Authority records for current or historical mine workings; and an evaluation the risk of artesian ground water. The risk assessment and method statement will also include for suitable mitigation plans for the identified risks, including hand digging for approximately the first metre for each borehole; safety fencing to keep members of the public at a safe distance from the works; and arrangements to drain any water emerging from the borehole as it is being drilled to suitable disbursement areas or drains.

Whilst the drilling rig technology for boreholes varies, they typically have a drilling rig and a supporting compressor unit, which are connected by hydraulic pipe. The sediment arising from the drilling process is removed by continuous process, typically involving the pumping water from a hose pipe through the borehole to collect the sediment dislodged by the drill head. This sediment is then filtered out of the water extracted from the borehole and piped to a skip, for removal from site. The filtered water is then discharged to a suitable disbursement area or drains. The number of skips will vary depending on the

total dept on the borehole but would typically be between 1&2 skips per borehole. The use of the water to remove the spoil also prevents any dust from being generated during the process.

The drilling process does induce some local vibration, but the drilling teams will comply with the MCS Specification for Ground Source Closed-loop Drilling, which also requires adherence to the Ground Source Heat Pump Association Vertical Bore Hole Standard and the Good practice guide for ground source heating and cooling.

The following photo was taken when the trial borehole was being installed at the Community Hall in Chipping and is considered reasonably reflective of what will be required the next phase of the works in Chipping. The photo shows the drilling rig, connected by orange pipe to the compressor unit and the water circulation and spoil removal pipe (black), which is connected to a filtration unit and a skip. Both the compressor unit and the skip can be located remotely from the drilling rig.

The drilling rig is highly manoeuvrable and comes with its own ground mats where required, as illustrated in the photograph.

Once the borehole has been drilled the flow and return pipes are installed along its entire length (as shown in the following photograph) and then the gap between the pipe and the borehole is grouted (as required). Once the work is completed and the borehole pipes are connected by underground trench to the property there remains no visible presence on the surface once the works have been completed and the surface treatment has been re-instated, or the grass / vegetation has grown back.

Drilling safety and environmental protection

The drilling of each borehole will be supported by a method statement and risk assessment.

This includes appropriate safety precautions for each site, including:

- Full risk assessment completed.
- Hand digging down to 1 m in depth to locate any unrecorded services or utilities prior to drilling.
- The drilling site will be securely fenced off.

The works will be undertaken in accordance with:

- Health and Safety at Work Act 1974.
- Management of Health and Safety at Work Regulations 1992.
- Guidance on Managing the Risks of Hazardous Gases when Drilling or Piling Near Coal
- Closed-loop Vertical Borehole Design, Installation & Materials Standards

The Method statement will detail the working methods to mitigate environmental impacts.

Borehole installation programme

It typically takes 2 – 3 days to drill the borehole and install the associated pipework, grout and then tidy and reinstate the site.

Subject to the overall programme the pipes can then be sealed and covered (to be connected to the property heat pump at a later date) or connected to the pipes laid in the trenches to the individual properties.

Third party impacts

The process does create some noise, but this noise will be managed by the delivery contractors and will be within the noise levels for temporary construction works as defined by BS 5228.

The drilling rig and associated equipment will be located on privately owned land, with agreement from the landowner, or in areas agreed in advance with the Highway Authority to manage impacts on road users.

The location and movement of skips or other equipment using the highway will be subject to the usual highway licensing arrangements.

Appendix Two: Existing Water Extraction and Water Courses.