

## **DANDELION**

### **Request to Amend the Order of Conditions for 64 Cushman Rd, Amherst, MA 01002, USA**

Enclosed is the formal request to alter the order of conditions for the installation of a geothermal heat pump at 64 Cushman Rd, Amherst, MA 01002. The original order of conditions was issued to the homeowner, Nathan Heard, DEP file number 286-0288.

This amendment was requested to resolve on site issues that arose when we attempted to mobilize the drilling phase of work at the site. We are proposing we alter the construction of silt fence and erosion control to better suit the two phases of work at the site. We are also requesting modifications to our drilling equipment and drilling spoils for the first phase of work at the site.

#### **Erosion Control Changes**

Previously the site plan proposed the installation of a straw dike as an extra barrier for run off during the drilling and trenching phases of work. We are requesting instead, the installation of a silt fence in the same area. The silt fence would remain in place during drilling, but would remain during trenching activities to protect the wetlands from erosion during the trenching aspect of this project.

#### **Drilling equipment changes**

We are also requesting an equipment change from a drill rig with a poly pool to contain the spoils, to a Comacchio drill rig with a metal container for spoils. With the Comacchio rig, a borehole is made in the ground with a compact drill rig using air as the primary medium to flush the drill cuttings up and out of the borehole as drilling takes place. The drill rig is outfitted with a diverter at the ground surface which creates a seal between the borehole and the drill rods. With this, the mud and cuttings removed from the bore as part of the drilling process is diverted into a hose that is connected to a metal container nearby. (See attached engineers letter for specifics on Comacchio drilling and site photos).

This will allow for a smaller area of impact at the drilling location, and will allow us to remove the solid cuttings from the site without needing to create an onsite silt fence pool to hold the cuttings.

As with other projects in the area, there is a concern about excess water generation while drilling. With the proposed set up, we would set up a 2" water pump in the metal container to pump out excess water from the drill cuttings after it has been allowed to settle. The water would be pumped through a hose to silt bags to remove additional fines. The silt bags will be placed to the north of the home in the wooded area outside of the riverfront resource area. Once the silt bag is filled they will be allowed to slowly dewater over time, allowing the

groundwater to return to the earth without causing erosion to the surrounding soil. (See updated figures for location of the container and silt bags on site). The amount of silt bags used will depend on the volume of water encountered while drilling.

The metal container of solid will be removed after the completion of the phase I work, the dewatered silt bags will be removed as part of the Phase II site work.

### **Practicable and Substantially Equivalent Economic Alternatives.**

The proposed alterations to the NOI should not lead to an overall change in the permanent impacts to the site. The excess water from the drill cuttings will be dispersed away from the wetlands and river front area, and should dewater at a rate slow enough to prevent erosion into the wetlands or river resource areas.

Other possible alternatives would require removing the water from the site, which is not economically feasible for this project.

# 64 Cushman Road, Shutesbury, MA: Ground-source Heat Pump Site Plan

Prepared by: Nate Heard, Updated by Hannah Kowalski April 25, 2023

