



STUDENT SUSTAINABILITY COMMITTEE

Semesterly Report

Thank you for your commitment to green initiatives at the University of Illinois. One of the ongoing requirements listed in the terms of the funding agreement for your project is the submission of semesterly reports with key information about your project. In addition to this form, please provide additional financial documentation and/or progress photos if available.

Please be as accurate as possible in describing the project (including possible setbacks or challenges in meeting the initial goals of the project). Not fully meeting your project's goals will not disqualify you from making future funding requests as long as your reports are as complete and accurate as possible. If you have any questions, please contact the Student Sustainability Committee, at sustainability-committee@illinois.edu.

Project Name: Geothermal exchange for greenhouses at UIUC Woody Perennial Polyculture Research Site

Date of Report Submission: 6/6/2019

Project Purpose:

The proposed project will involve the design, construction, and installation of a geothermal system to heat one greenhouse at the UIUC Woody Perennial Polyculture (WPP) Research Site, located near the southwest corner of Race Street and Windsor Avenue).

Detailed Accounting of Expenditures to Date:

Spring 2019

No expenses incurred.

Summer/Fall 2018

\$825.54 – Engineering design services by UIUC Facilities and Services (F&S)
\$1,323.62 – Soil moisture/temperature probe with auger from Fondriest Environmental, Inc. - to be used to measure soil moisture/temperature during winter when greenhouse is being heated by propane – data needed to help design geothermal system for winter 2019/2020.

Project Progress to Date:

Spring 2019

F&S determined that to meet the electrical load for the geothermal heat pumps, a new power source (transformer) would need to be installed at the WPP Farm. Initial estimates for the work range from \$50,000 to \$100,000. Because of this new information, we have decided to consider the greenhouses at the Energy Farm for installing the geothermal system. Tim Mies, the farm manager has agreed to be involved, and ample power is available for the system. The

greenhouses are operated by Dr. Erik Sacks, Crop Sciences. We have had a private company (TCI Geothermal provide us a high-level cost for installing a geothermal system at both the WPP Farm and Energy Farm.

Summer/Fall 2018

The project was initially to be designed by F&S, but then moved to a capital project because of complexity. Now F&S retained engineering firm Grumman/Butkus Associates is assisting. Because of the delay bringing retained firm into project, installation of the borefield has been delayed to spring/summer of 2019. The installation could not be completed before January 1, 2019 (start of research project by Dr. DK Lee). Now will wait to install system in 2019 once the growing season starts and the greenhouse is no longer heated.

Student Involvement and Outreach to Date:

Spring 2019

None

Summer/Fall 2019

Frank Holcomb, a Ph.D student in Civil and Environmental Engineering has been involved in the preliminary design of the geoexchange field. He attend meetings with F&S and Grumman/Butkus Associates.

Marketing and Promotion Efforts to Date:

Project was added to iCAP website.

Additional Comments:

Going forward, the project will now be known as “Geothermal exchange for greenhouses at UIUC Energy Farm.”