

Mentor Visit Assessment #1

Mentor: Eric Phillips

Profession: Mechanical Engineer, Plant Manager

Location: Zoom Conference

Date: February 19, 2021

Time: 6:00 PM- 7:00 PM

Assessment:

I had a great first Mentor visit. My mentor Mr. Phillips is a mechanical engineer who is now a plant manager for the company Dana Inc. He has plenty of experience and knowledge in the mechanical engineering field, so I knew he would be a great mentor to help guide me and show me how an engineer may think. On Friday I got the chance to meet with him over a zoom call. What may seem crazy is that my mentor is in a whole other state. Although we are in different states, he has been able to help me. In the first meeting that we had, we discussed the overall plan of my assignment to see if I was on track and to make some adjustments if they were needed.

With my assignment, I initially wanted to create an anaerobic digester that would be able to work in cold conditions, but I have tweaked this idea a little bit. After talking to my father, who is also an engineer, and Mr. Phillips I have decided to create a separate device that would be able to be attached to the anaerobic digester. Right now creating an anaerobic digester from scratch is not feasible as it deals with flammable agents that I may not be allowed to use or expose my family to. Also if I did make this digester from scratch it could possibly not work properly and make the whole experiment nonvalid. This is why we are going to see if I will be able to buy an anaerobic digester to make sure that it will work properly and then I can make some modifications and additions to it. Mr. Phillips has told me that he wants to now help me find one to purchase since they can run up the price of \$1300. I do not want to have to spend that much money for this project, so I either have to build one or find a cheaper alternative.

After deciding that I was most likely not going to build the anaerobic digester I decided to create a device that can be added on. Mr. Phillips gave me some ideas such as using mulch or using an insulator. I suggested that I use solar power to heat up water to keep the digester warm, but Mr. Phillip brought up a great point. He said that when I use solar power I have to see if it is actually efficient. This is because if I built it using solar power rather than using something else I could be using it less efficiently. Meaning that it would almost be pointless if it cancels itself out. I think using solar power should be efficient since I will have an initial cost of the solar panel

and the setup, but the digester should be able to continue making more energy. I still need to do some more research though and calculate and find the best eco-friendly alternative energy.

This week I plan to create various designs of the design that will be used to heat up the digester. I have done plenty of research toward the different sources, so this should not be a problem, but I just need to make sure I come up with as much as I can so that I will be able to have lots to choose from.