Monitor reporting BOD content from wastewater with analysis report.

Drain waste water out of BOD-Y filter rotation system that switch when BOD load exceeds capacity in active spot. When system auto-rotates, it will alert user to clean inactive filter.

Compartment to remove inactive filter for cleaning.

Speaker to sound alerts/text-to-speech.

Today's Summary:
- BOD: 70%
- Reduce:

Top View:
- Active Filter spot with drain water flowing through.

Battery pack: PUSH

Drain wastewater into BOD-Y

Inactive filter

Bi-filter rotational system that switch when BOD load exceeds capacity in active spot.

Remove BOD from your waters today!

A happier Earth is a healthier Earth!
**Manifesto**

What makes up most of the human body and most of the Earth? Water! Water is the very element that permits the existence of life. In our everyday routines, water is used for an unfathomable number of purposes from cooking to cleaning to drinking, which only shows how crucial clean water is. However, humans are not the only users of this clean water. We need to ensure other organisms, such as aquatic life, have access to sustainable water.

Before wastewater from our drains is discharged to a larger body of water like a river it must be tested for the amount of BOD (Biochemical Oxygen Demand) in the water. BOD is the amount of oxygen in water required for bacteria and other microorganisms to decompose organic matter. Water has a small amount of oxygen dissolved in the solution. If not enough BOD is removed prior to discharging, then the bacteria will consume most of the oxygen in the water, leading to dangerously low oxygen levels for certain aquatic life to survive.

Now, of course, water treatment plants will ensure that they’re doing their job to ensure discharged water meets the EPA’s regulations; however, this process can take up to days. Furthermore, there are times when sewage water goes straight to being discharged without treatment because the quantity of wastewater to process becomes too overwhelming for the plant like during rainy seasons. This becomes quite concerning for the sea life living in these waters.

While bringing awareness to this issue, I present the invention of BOD-Y, a smart filtration device to be installed in your drains. This home accessory can pre-filter out your wastewater before it joins the city Combined Sewer System, while also notifying you of the amount of BOD your wastewater contained. This notification is intended to bring awareness to the user in monitoring how much solid waste they’re slipping into the water drain. Hopefully, the user will be more mindful and input less waste into the wastewater. Pre-filtering the water fulfills two accomplishments: helps the water treatment plant and filters the water to a degree if water can’t get treated by the plant and discharged immediately. By reducing the amount of waste/BOD in sewage, treatment plants don’t have to work as hard in cleaning the water. Economically, consumers will see a decrease in their water bill as less funds are needed to maintain wastewater with the help of BOD-Y.

In a future where everyone uses BOD-Y, I envision a very prosperous world where surface waters are cleaner allowing for flourishing aquatic life. The initial integration of BOD-Y will help us get there with the overarching goal towards prevention. Prevention is the best approach so that waste doesn’t end up in waters in the first place. From one aspect, BOD-Y will filter most of the waste out of the water to prevent it from reaching the plant; however, not all of it will be removed. This is where the second aspect comes in play: when the user interacts with the innovation. The analysis reports serve as a daily reminder to watch what is flushed down the drain. The goal is to bring awareness to their issue and increase their mindfulness, which in turn leads to prevention. In a future where everyone is mindful of their wastewater, the Earth flourishes as the fish rejoice.