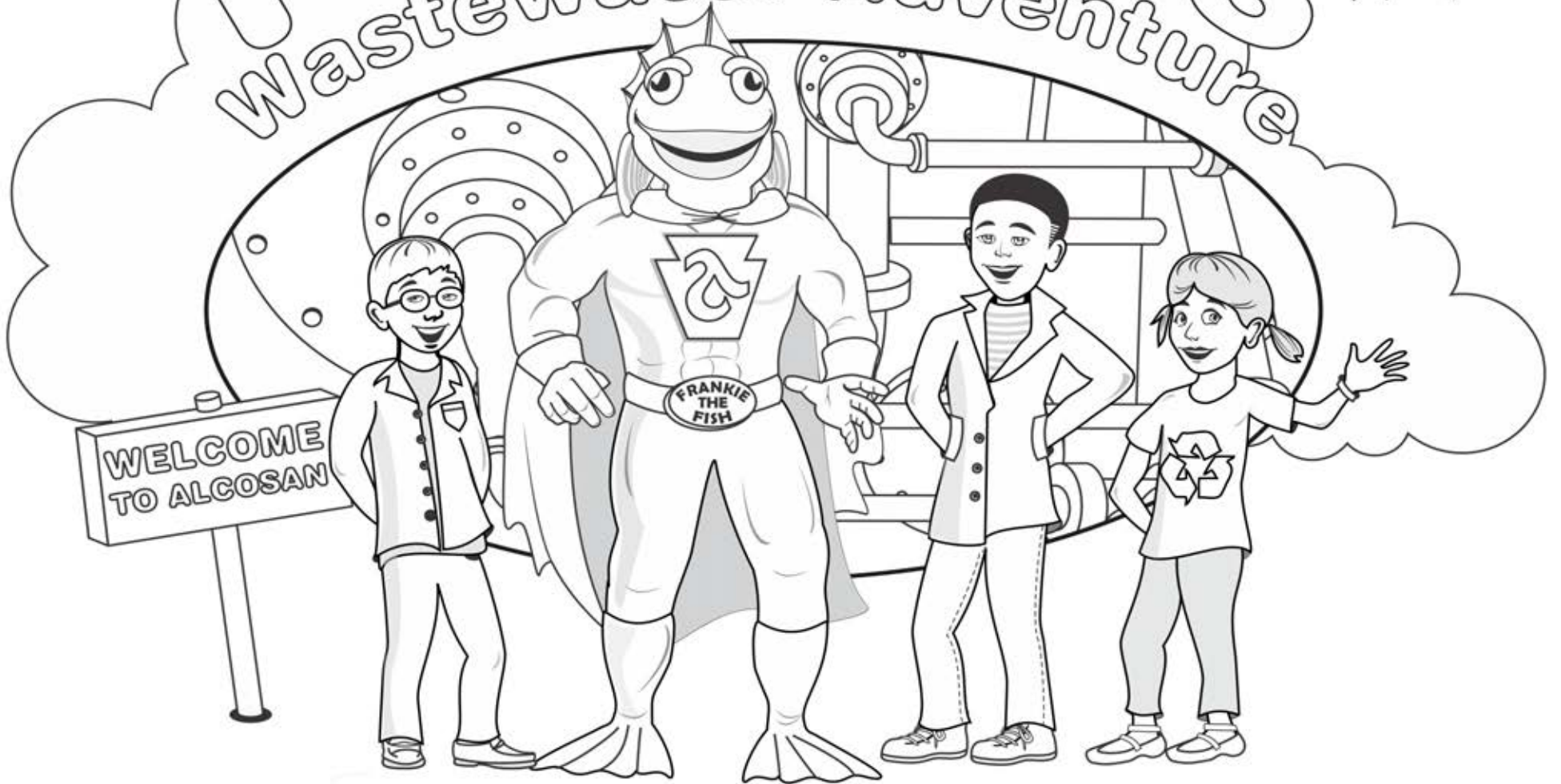
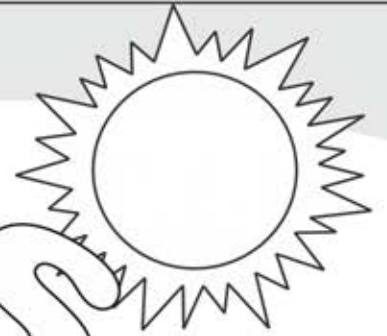


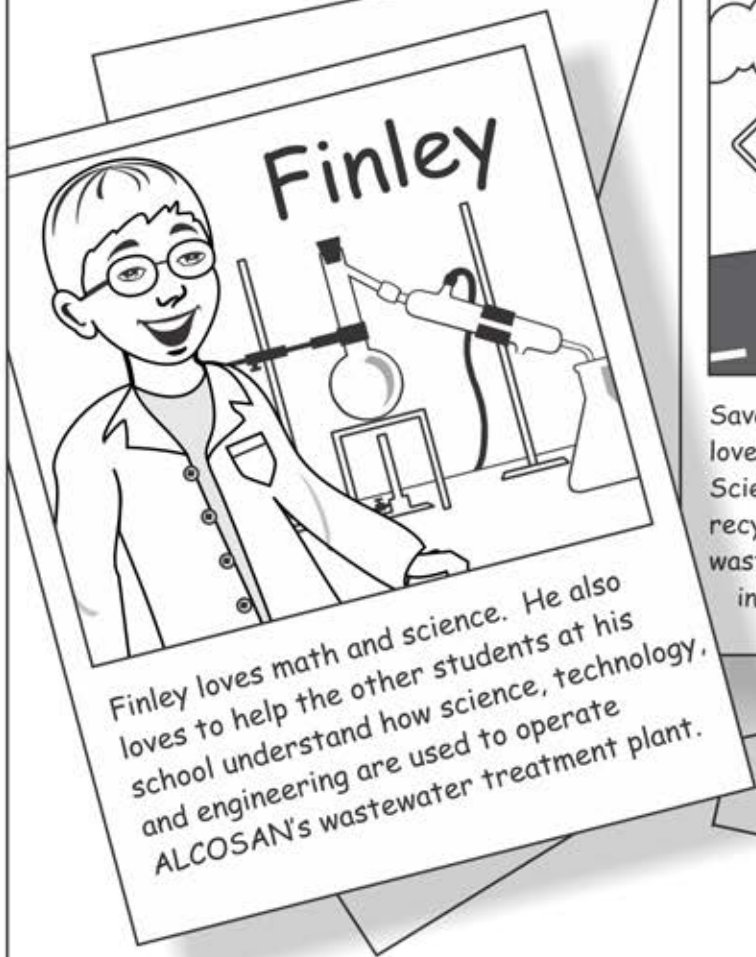
Frankie's Wastewater Adventure



Join ALCOSAN's Frankie the Fish and His Friends
on a Journey Through the Wastewater Treatment Process

Frankie's Wastewater Adventure

Meet Frankie's Friends




Finley

Finley loves math and science. He also loves to help the other students at his school understand how science, technology, and engineering are used to operate ALCOSAN's wastewater treatment plant.



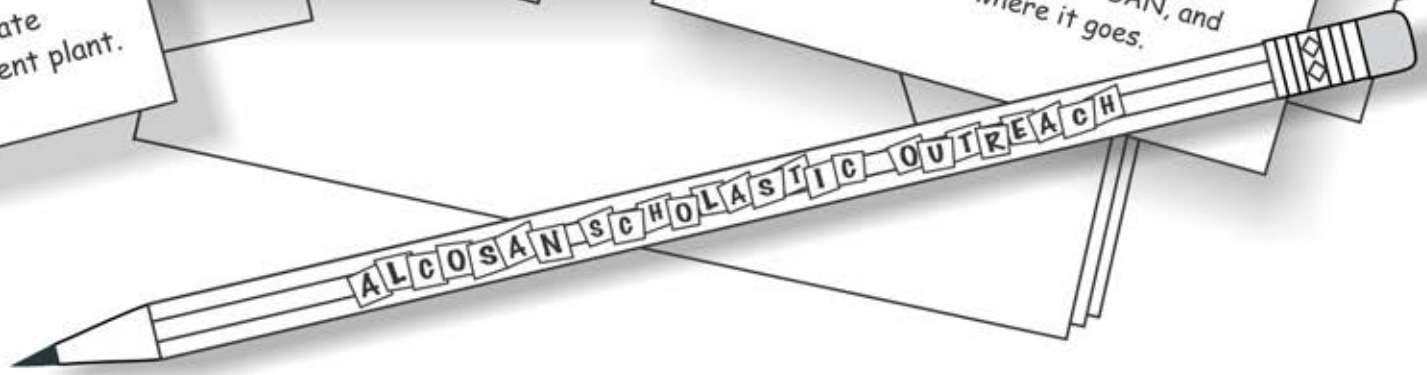
Savannah

Savannah cares about the environment and loves to recycle. At ALCOSAN's Summer Science camp, she learned that ALCOSAN recycles or reuses many materials, and that wastewater is cleaned up and discharged into the Ohio River.



Joe

Joe likes to explore new things and solve problems. He learned that not all wastewater makes it to ALCOSAN, and he wants to find out where it goes.





Frankie's Wastewater Adventure

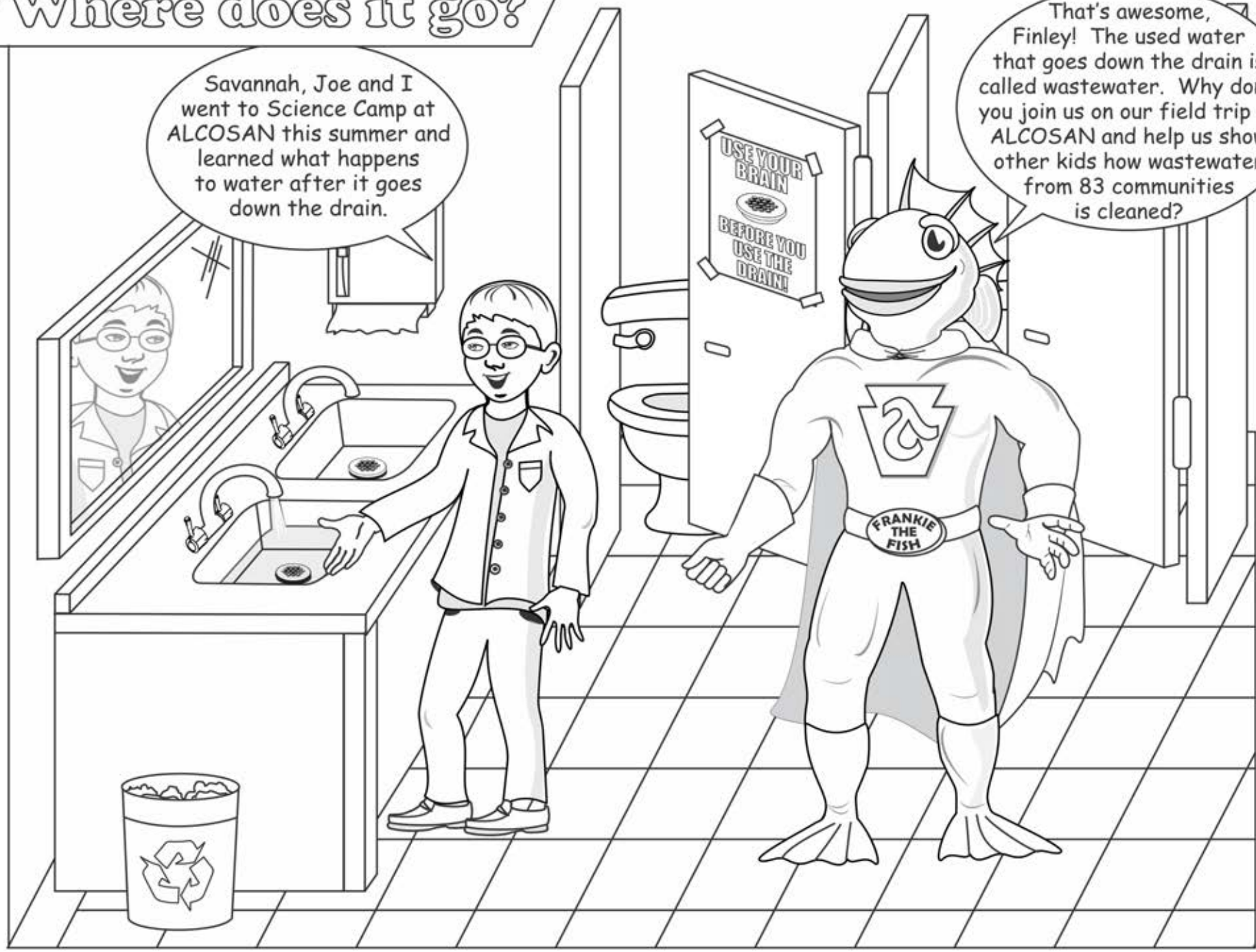
Where does it go?

Savannah, Joe and I went to Science Camp at ALCOSAN this summer and learned what happens to water after it goes down the drain.

That's awesome, Finley! The used water that goes down the drain is called wastewater. Why don't you join us on our field trip to ALCOSAN and help us show other kids how wastewater from 83 communities is cleaned?

USE YOUR BRAIN
BEFORE YOU USE THE DRAIN!

FRANKIE THE FISH



Frankie's Wastewater Adventure

Primary Treatment

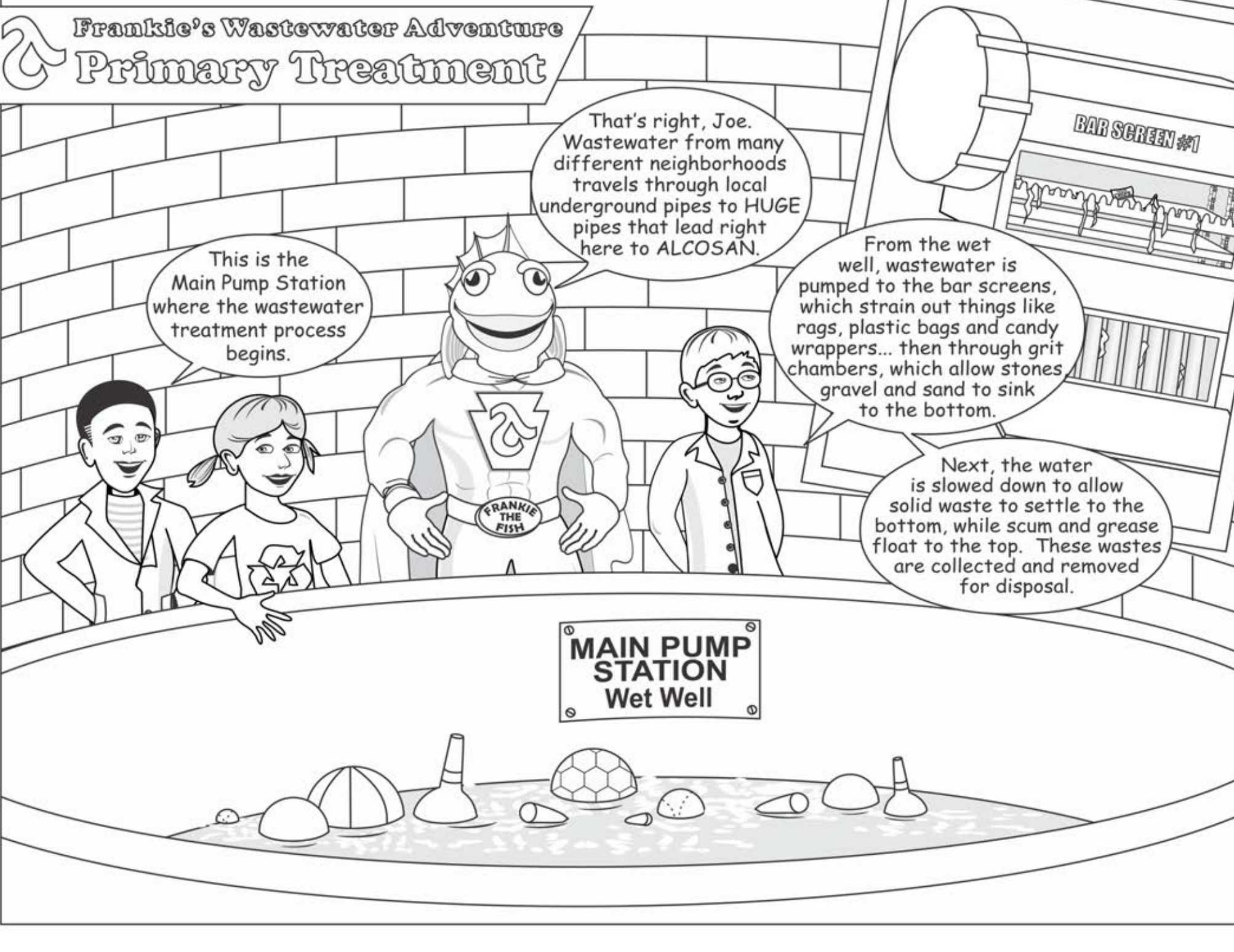
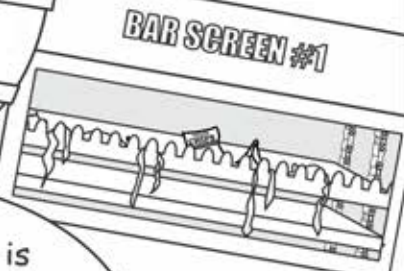
This is the Main Pump Station where the wastewater treatment process begins.

That's right, Joe. Wastewater from many different neighborhoods travels through local underground pipes to HUGE pipes that lead right here to ALCOSAN.

From the wet well, wastewater is pumped to the bar screens, which strain out things like rags, plastic bags and candy wrappers... then through grit chambers, which allow stones, gravel and sand to sink to the bottom.

Next, the water is slowed down to allow solid waste to settle to the bottom, while scum and grease float to the top. These wastes are collected and removed for disposal.

MAIN PUMP STATION
Wet Well





Frankie's Wastewater Adventure Secondary Treatment

Now the partially cleaned water goes into these open air tanks where good "bugs" eat the remaining solid waste. The bubbles in the tanks provide air to keep the tiny bugs alive while they work.




Once the tiny bugs have eaten for a while, some are taken out while others keep working.

FRANKIE
THE
FISH



Frankie's Wastewater Adventure

Disinfection/Discharge



Then, a kind of bleach called Sodium Hypochlorite is added to kill harmful germs in the wastewater. This bleach is removed before the water goes into the river.

That's correct, Savannah. Believe it or not, the plant at ALCOSAN can process up to 250 million gallons of wastewater every day!

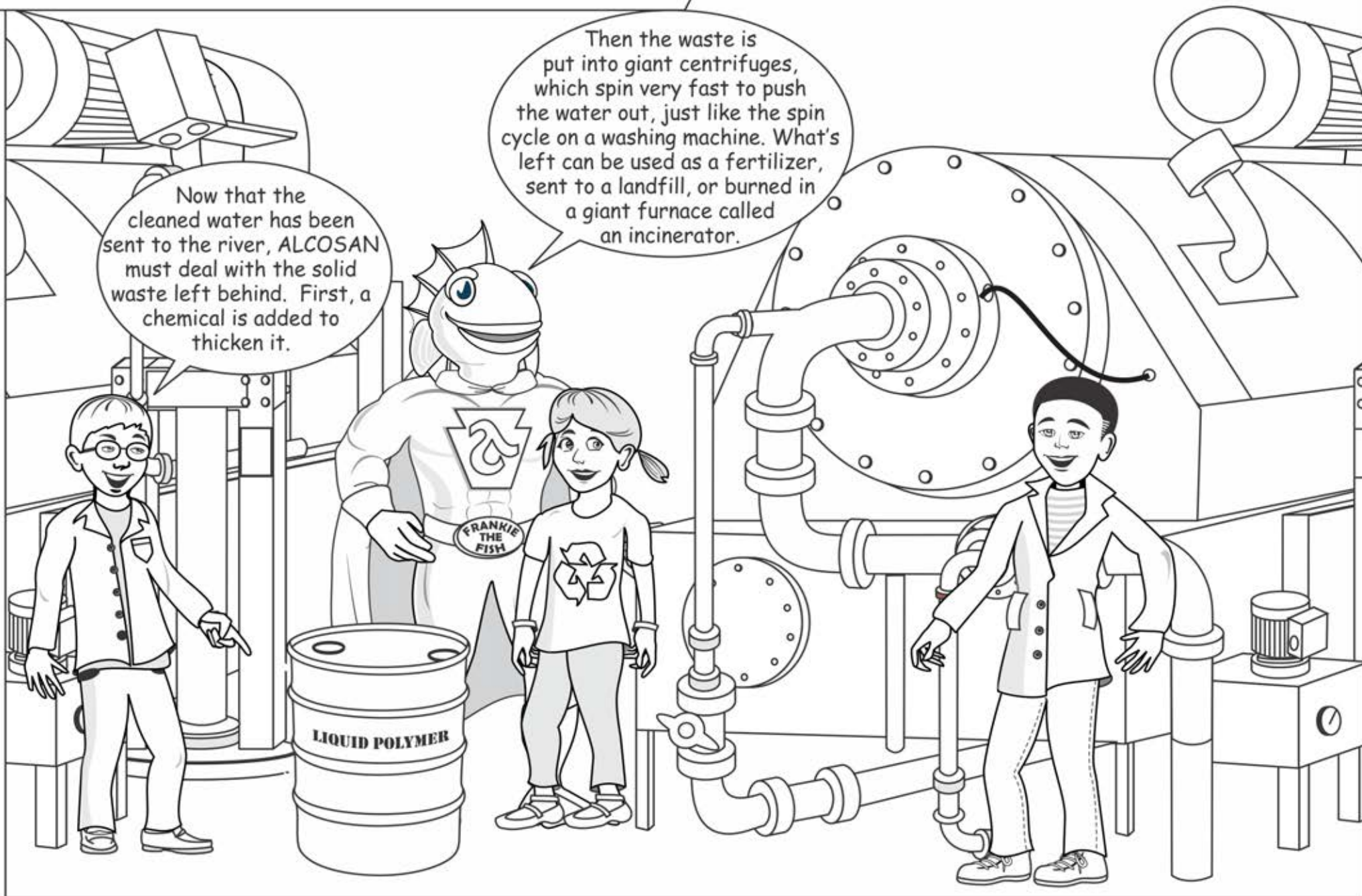
FRANKIE
THE
FISH

Frankie's Wastewater Adventure

Solid Waste Processing

Now that the cleaned water has been sent to the river, ALCOSAN must deal with the solid waste left behind. First, a chemical is added to thicken it.

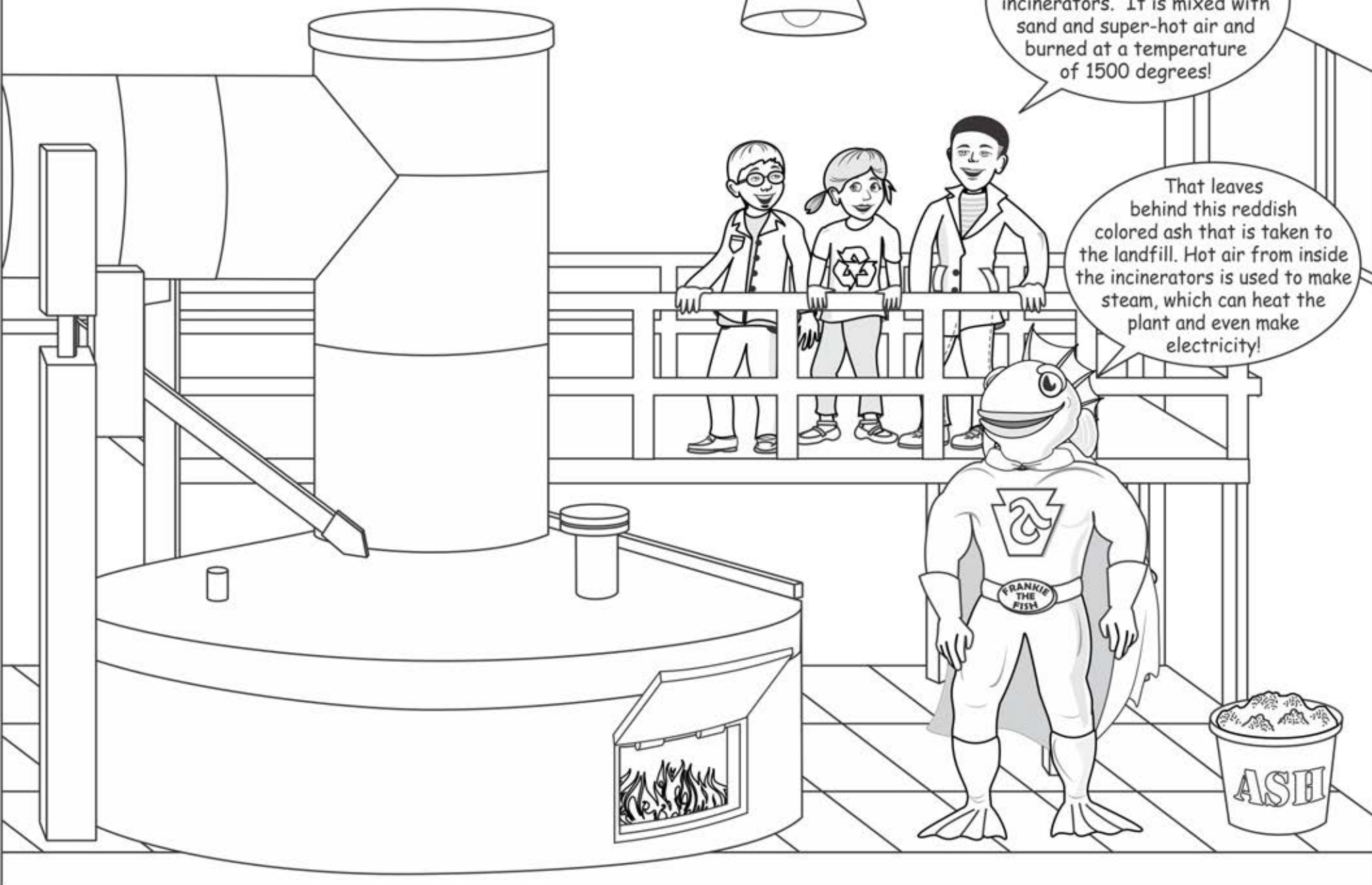
Then the waste is put into giant centrifuges, which spin very fast to push the water out, just like the spin cycle on a washing machine. What's left can be used as a fertilizer, sent to a landfill, or burned in a giant furnace called an incinerator.



Frankie's Wastewater Adventure Incineration/Energy Recovery

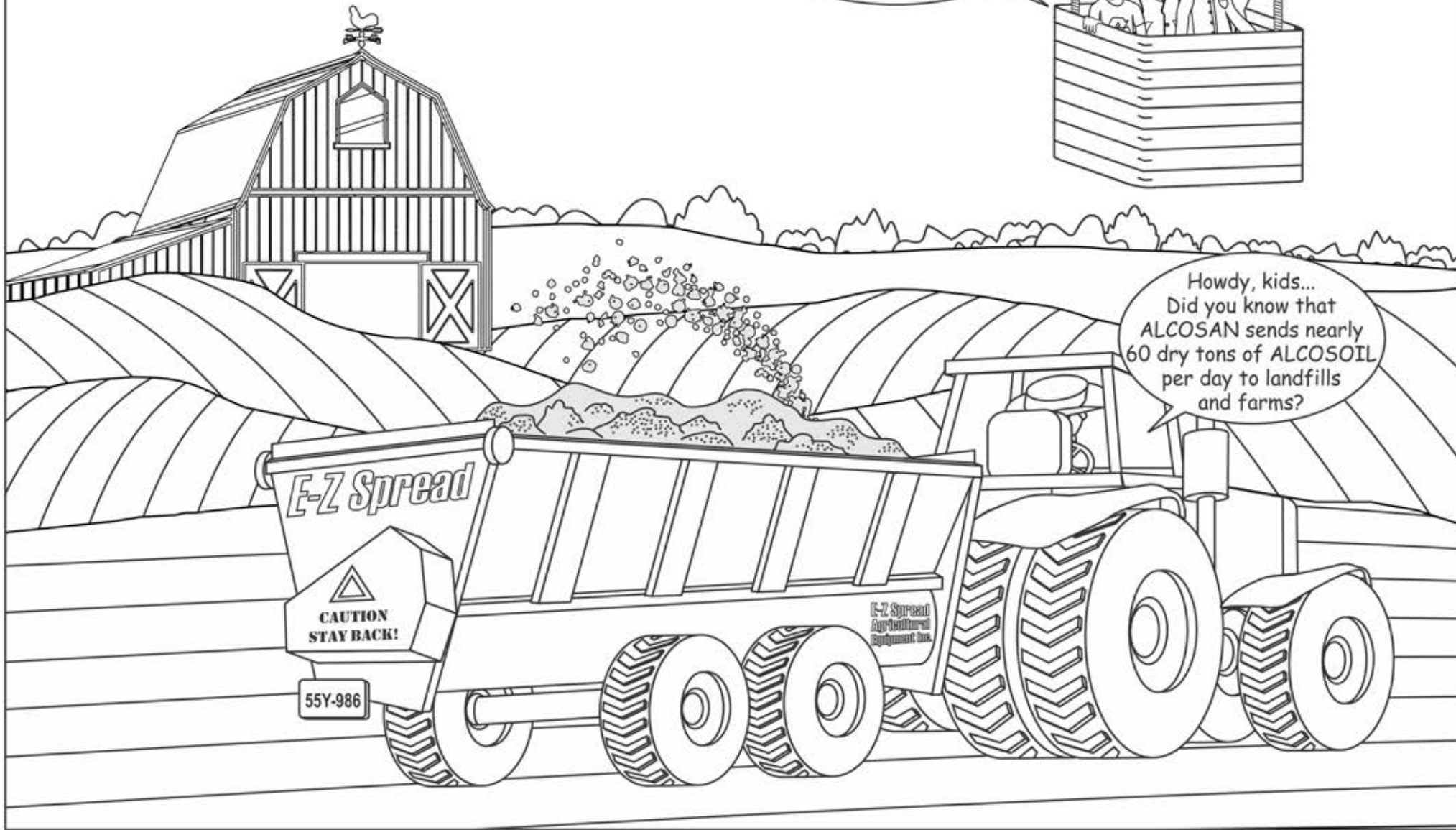
About half the solid waste from the centrifuges comes here to the incinerators. It is mixed with sand and super-hot air and burned at a temperature of 1500 degrees!

That leaves behind this reddish colored ash that is taken to the landfill. Hot air from inside the incinerators is used to make steam, which can heat the plant and even make electricity!



Frankie's Wastewater Adventure Land Application

Waste that isn't burned has crushed limestone added to it to kill any remaining germs. It can be used to repair damaged land and by farmers to help crops grow. We call it **ALCOSOIL**.



Howdy, kids... Did you know that **ALCOSAN** sends nearly 60 dry tons of **ALCOSOIL** per day to landfills and farms?

E-Z Spread

CAUTION
STAY BACK!

55Y-986

E-Z Spread
Agricultural
Equipment Inc.

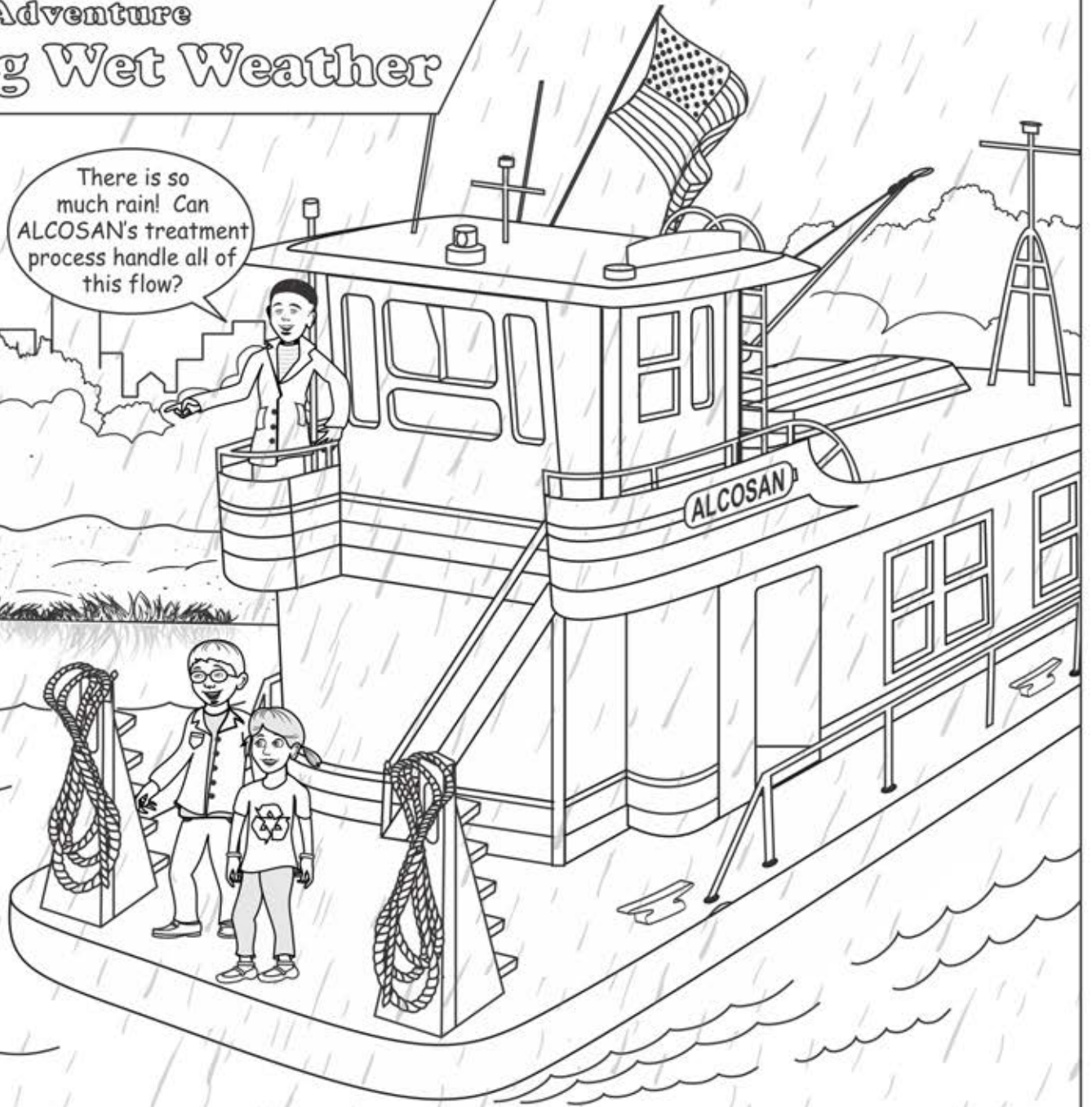
Frankie's Wastewater Adventure

Understanding Wet Weather

There is so much rain! Can ALCOSAN's treatment process handle all of this flow?



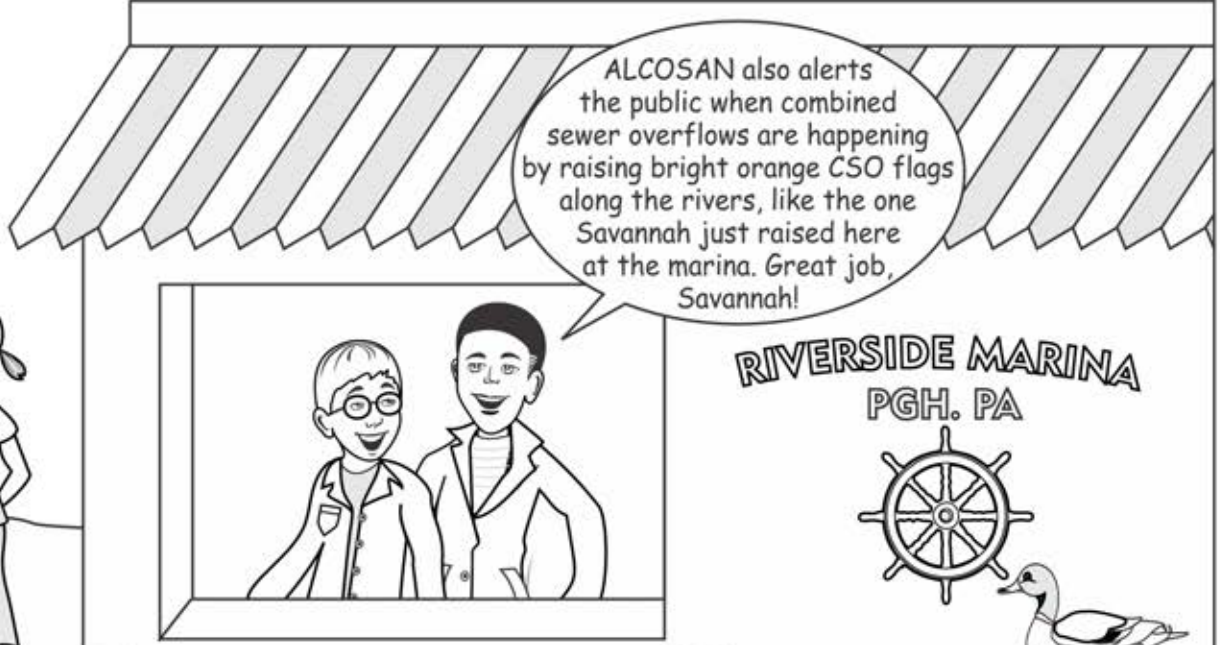
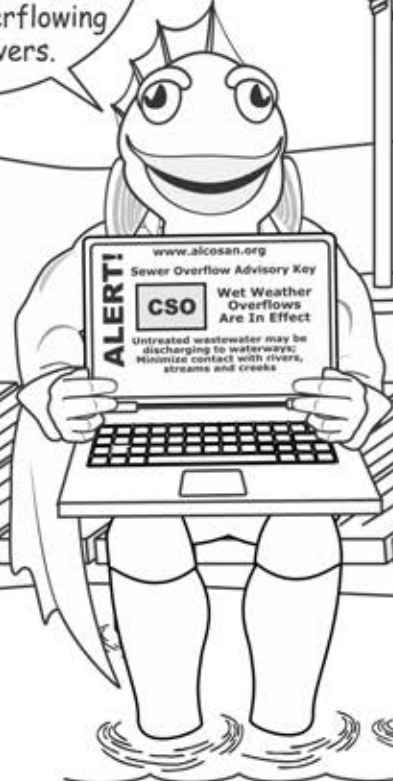
Well, Joe, when the sewer system is overwhelmed, some of the sewage doesn't reach ALCOSAN and can overflow into our rivers and streams!



Frankie's Wastewater Adventure

Sewer Overflow Advisory Key/CSO Flags

The Sewer Overflow Advisory Key, SOAK, is an online program that lets people know when sewers are overflowing into the rivers.



RIVERSIDE MARINA
PGH. PA



Frankie's Wastewater Adventure Be an Environmental Steward!

A a B b C c D d E e F f G g H h I i J j K k L l M m N n

Each of us is a leader, helping protect our rivers and streams. What are YOU doing to help the environment. What are YOU doing to protect our rivers and streams?

Savannah A+
Finley A+
Joe A+

June 5



Class Assignment:
Celebrate World
Environment Day!

