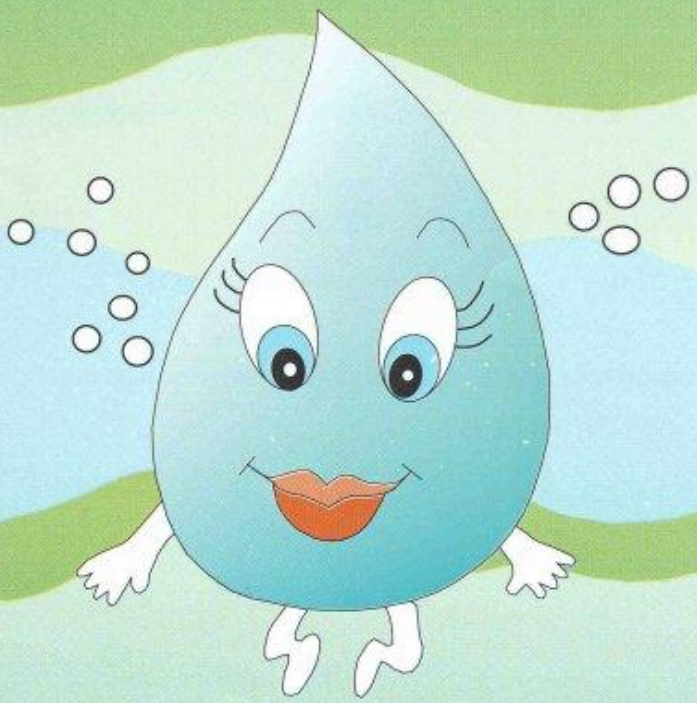
Once Upon a Wellfield

or....

The Adventures of "Dew"



Developed by the Ohio EPA for Ohio's
Wellhead Protection Program

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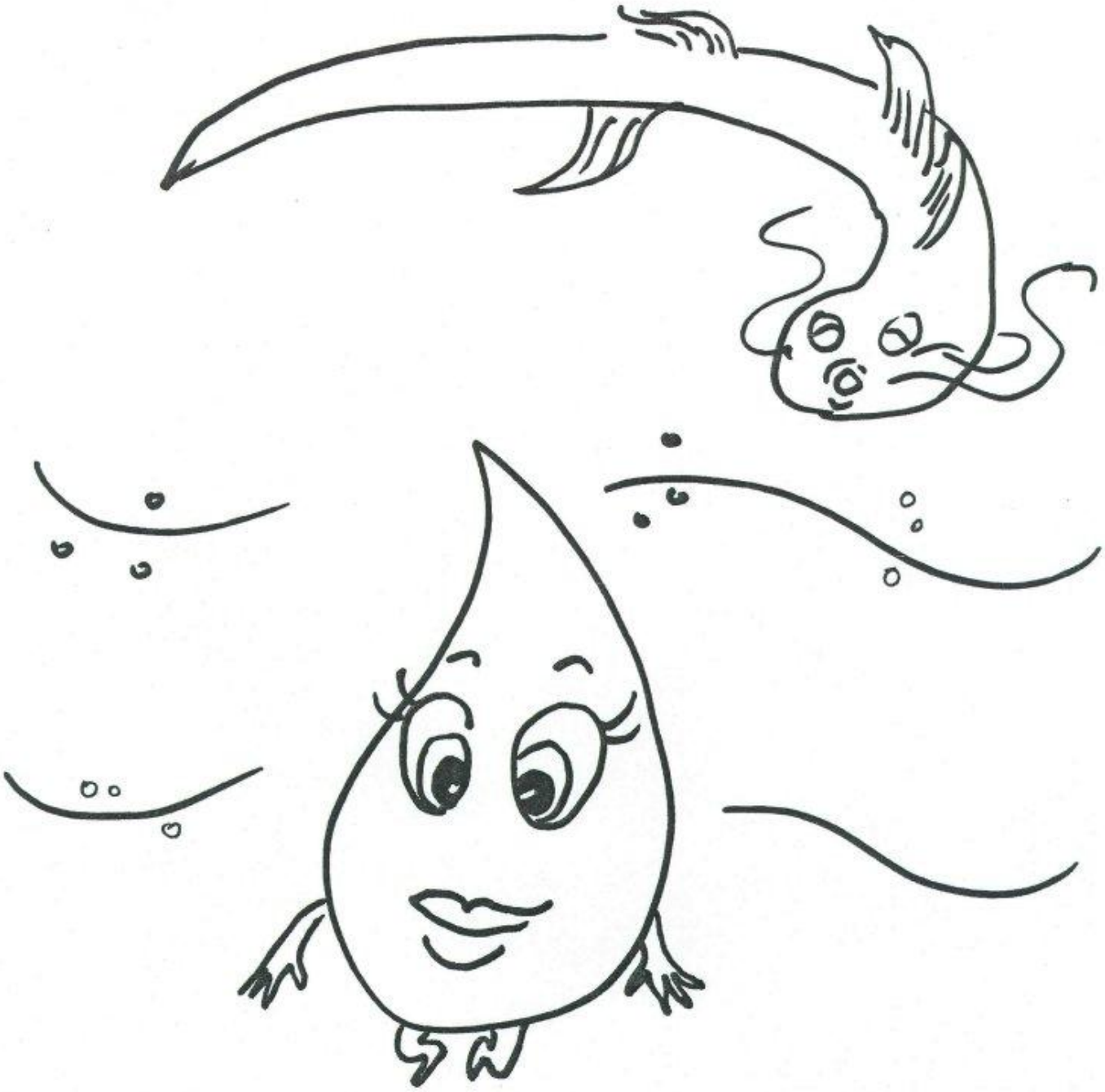


Once upon a time there was a drop of water named Dew. She lived deep in the ocean, surrounded by swimming animals. It was very dark and very cold there.

One day, Dew noticed that she was rising. Up, up, up she went. The water got warmer and warmer. Dew felt very light. She felt so light that she could ...

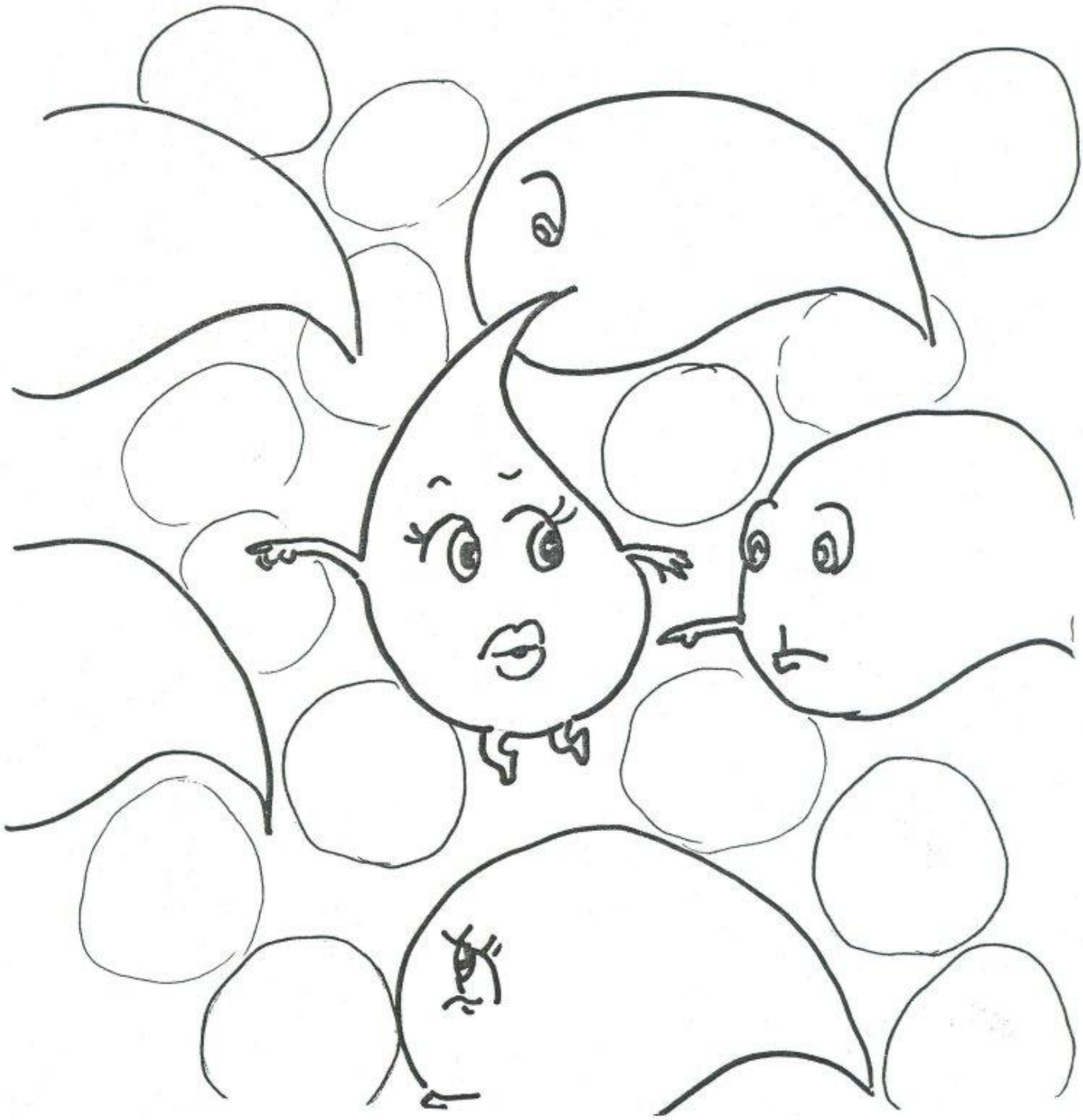
Fly! Suddenly, Dew found herself flying upward into the sky, up with the birds. WHEEE! Dew, the deep ocean water drop, was now part of a CLOUD!

Looking down, she saw high mountains and flat plains, just like on the bottom of the ocean. But the animals looked very different. Some flew in the air and some ran on the ground.

Suddenly, the air got colder and Dew began to fall. HELP!! She cried. But it was too late. Dew had become a **RAINDROP**!

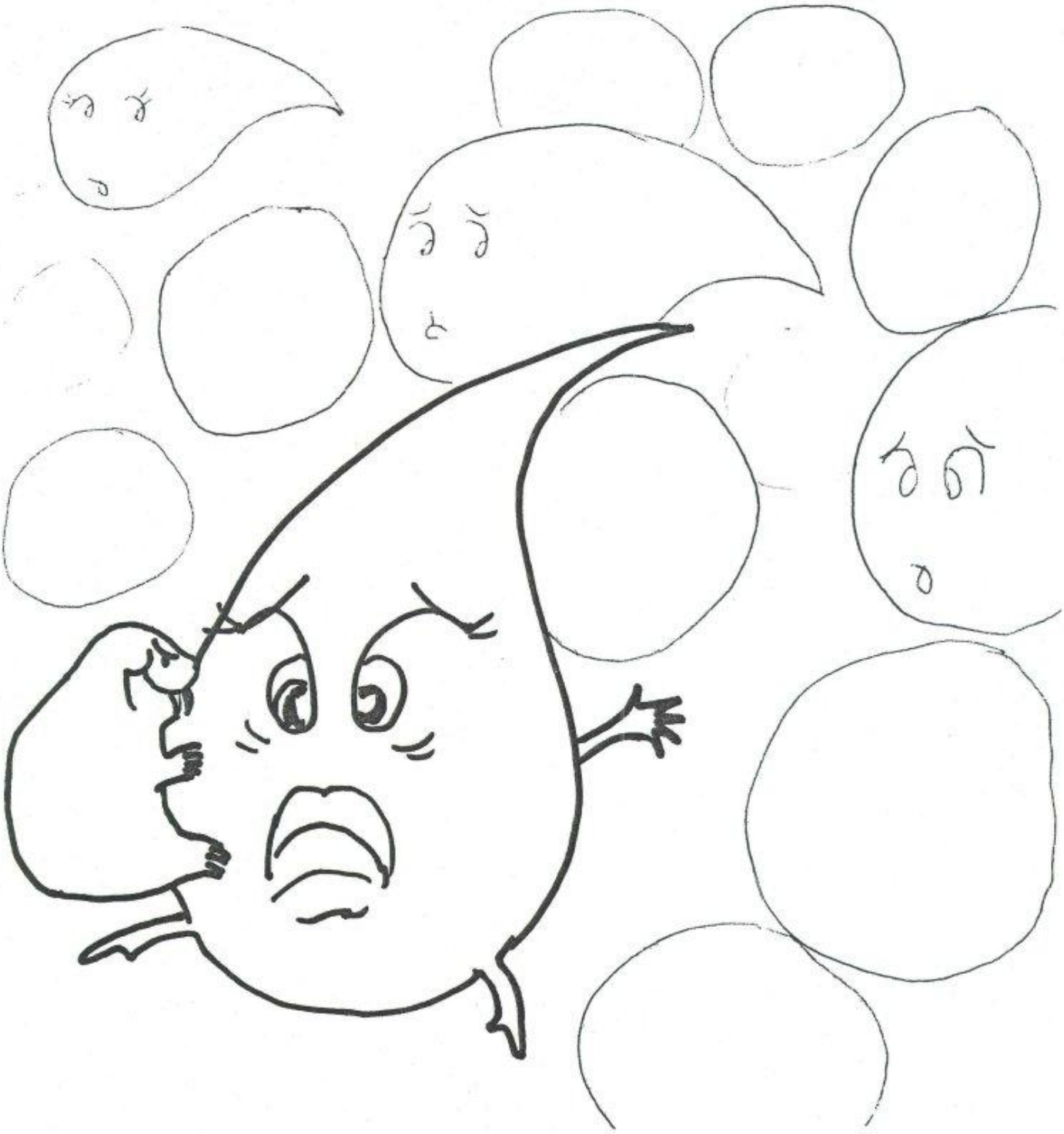
She hit the earth with a SPLAT! and began to move down through the soil. A thirsty tree root almost caught her, but Dew hurried out of its reach.

As she sank, the spaces in the soil got smaller and smaller. Ouch! What a tight fit! Dew, the rain drop, was now a drop of SOIL WATER. She sank more and more slowly until it seemed she was not moving at all. The weeks passed, and turned into months. Dew was bored.

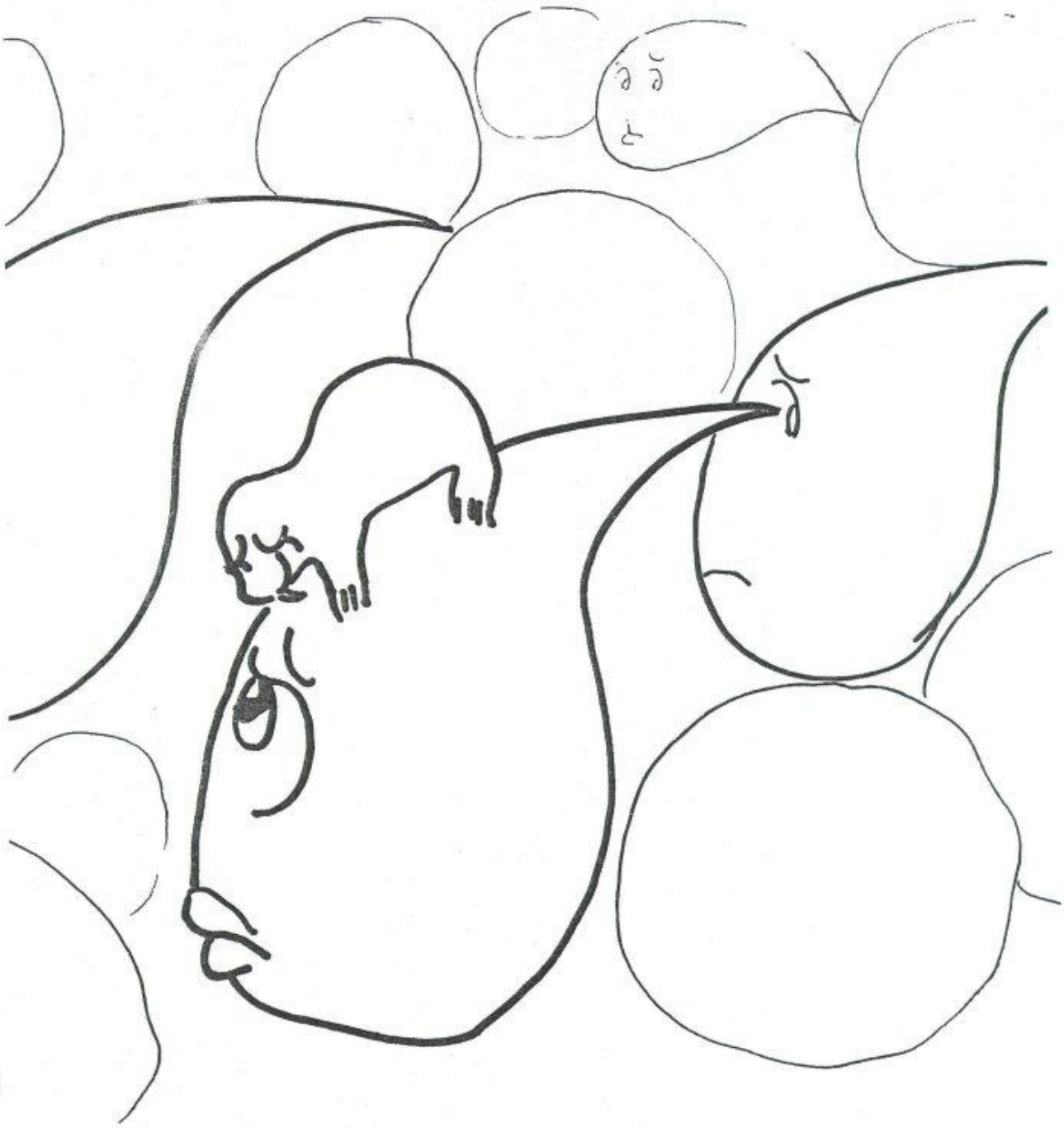


Then one day, Dew found herself in a place where the spaces were not so tight. They were filled with other drops of water, all moving in the same direction. "Where are you going?" Dew asked. "To the well!" the other water drops replied.

Dew joined them. She was now a drop of GROUND WATER. She and her friends moved very slowly. It took all day just to move a few inches! There was lots of time to play.

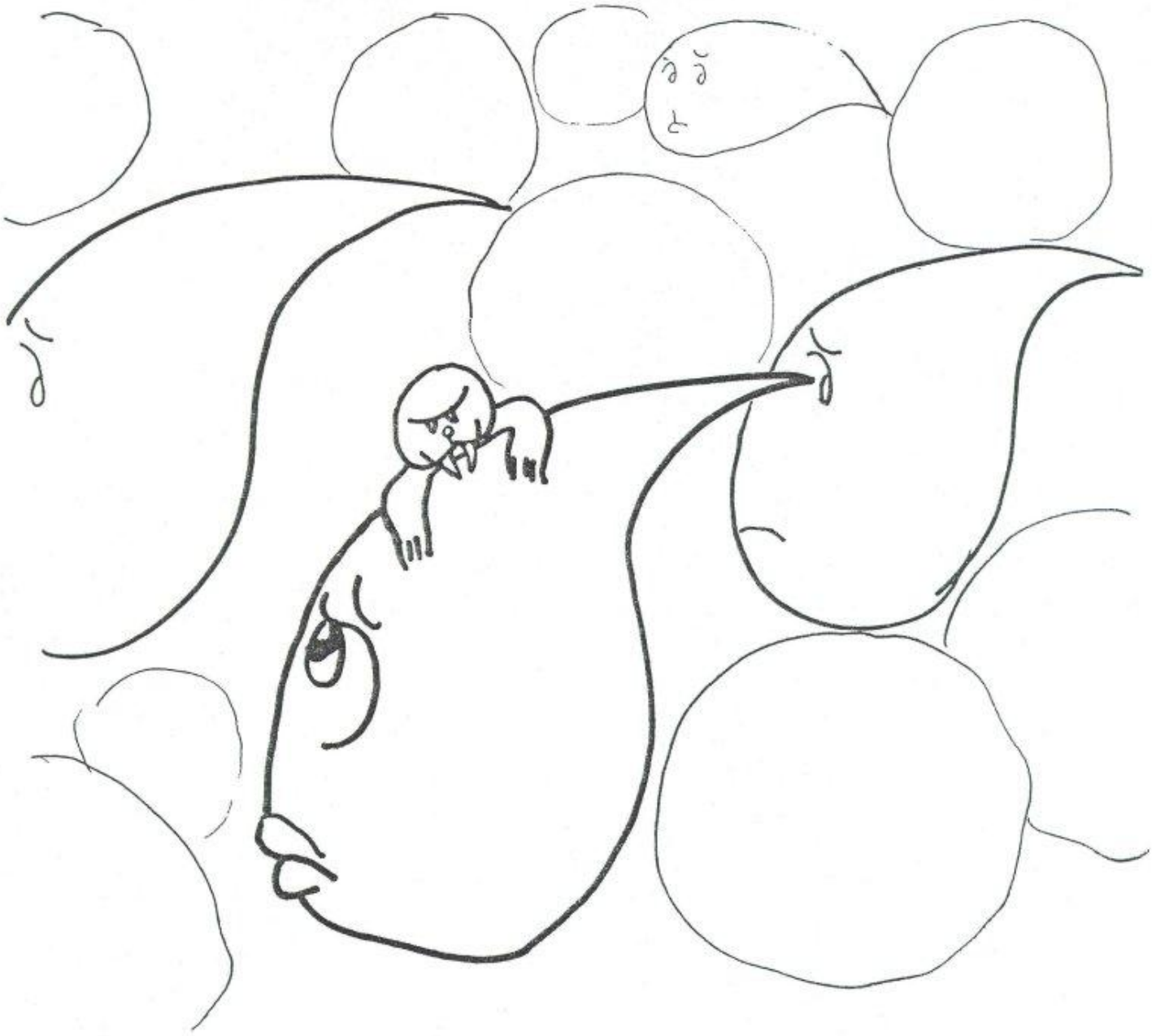


One day, Dew ran into trouble. She was attacked by a chemical! He grabbed her and held on tight.
"EEEK!" cried Dew. "Who are you?!"
"Benzene," he said. "But my friends call me Benny."



Benny had a sweet smell but he was mean. "I'm a *pollutant*! I come from gasoline," he told Dew. "I used to be trapped in a big underground tank full of gasoline. Then one day I got out through a hole in the tank! Now I'm freeee!!!"

"B-b-but when are you going to let **me** free?" asked Dew.
"Maybe when we get out of the ground," said Benny. "Then I'll look for some REAL trouble. Maybe someone will drink me!"

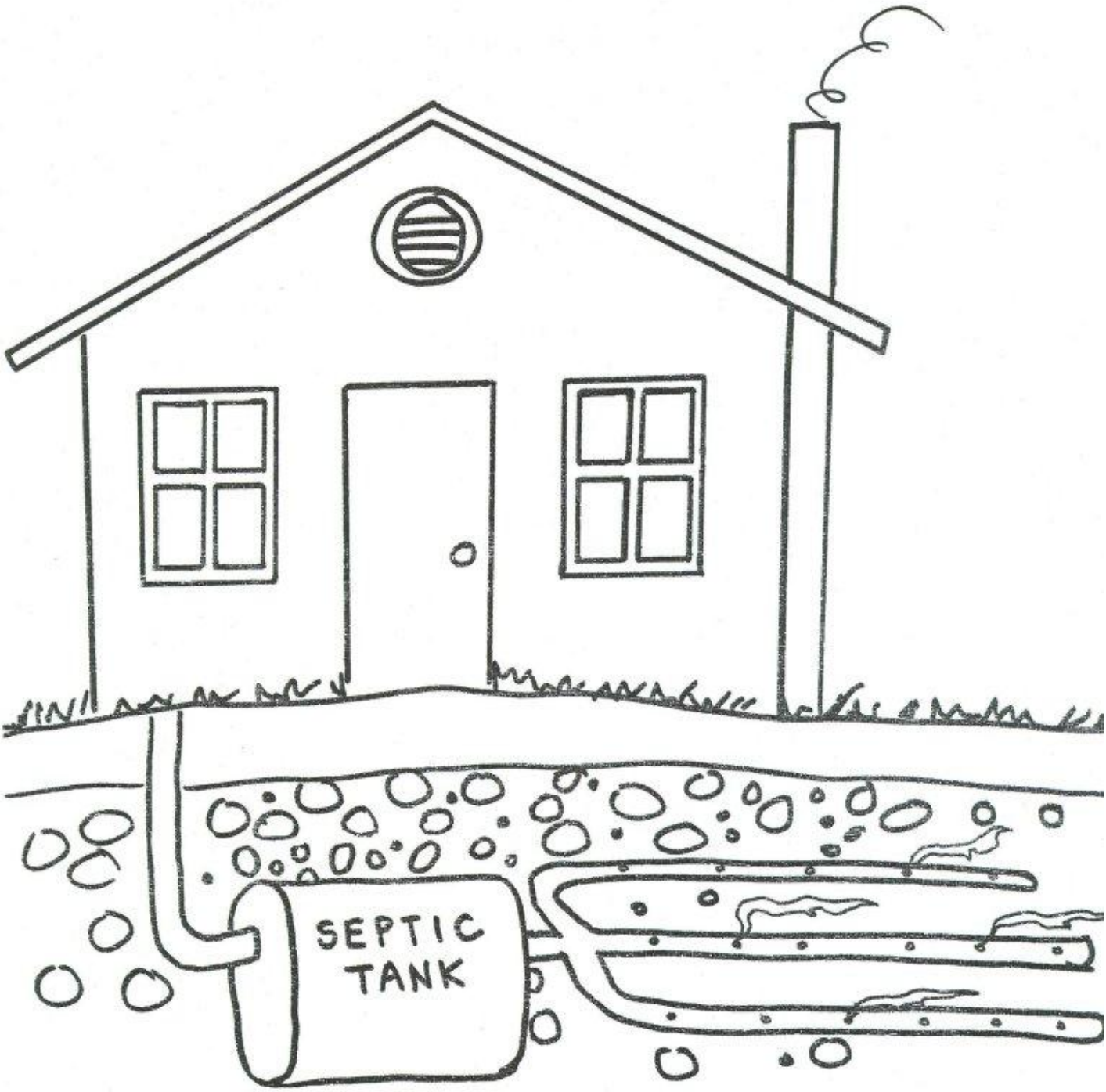


"What's wrong with drinking you?" asked Dew.
"I make the water taste bad and can make people sick," replied Benny.
"You **are** a lot of trouble!" said Dew.

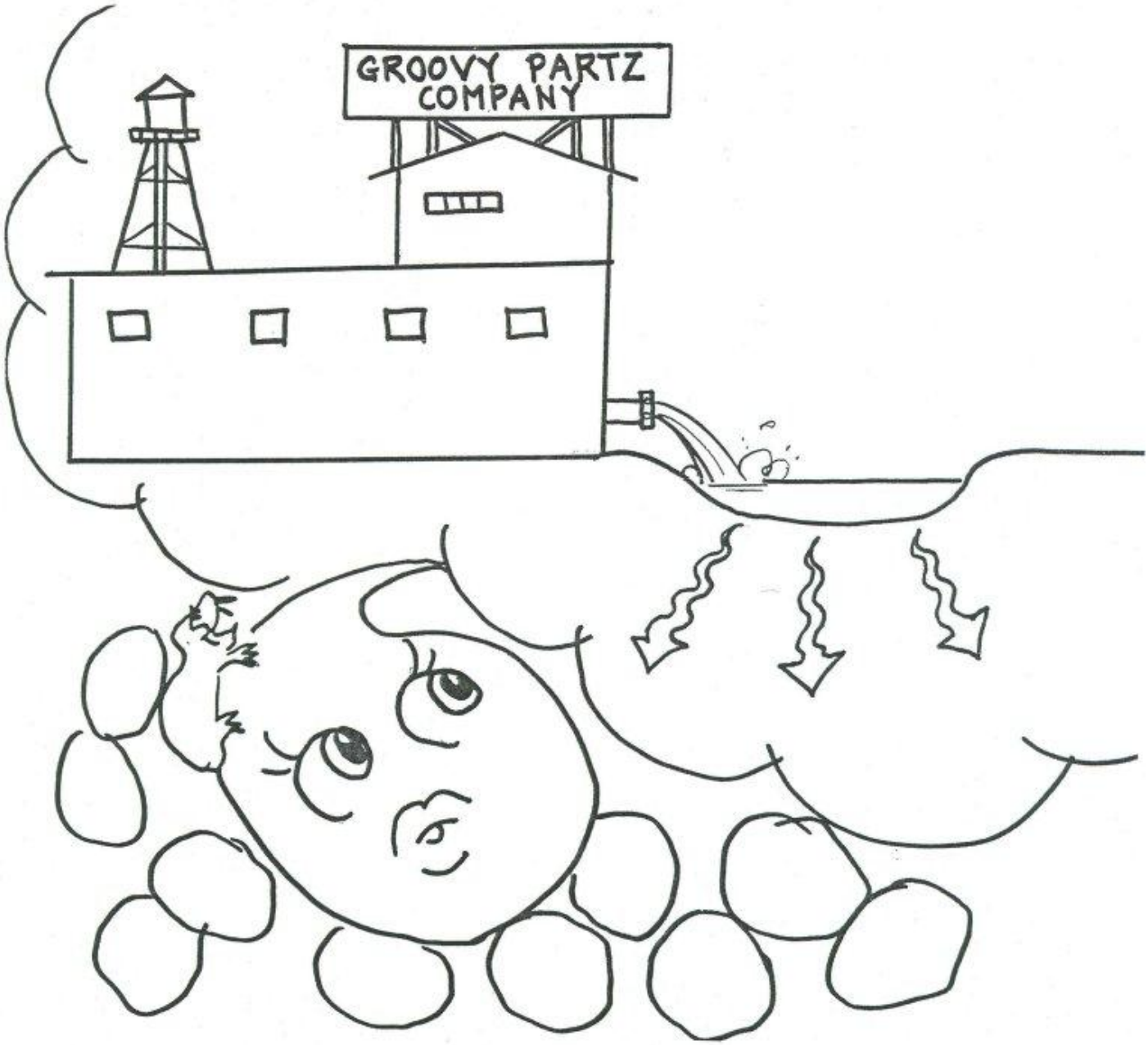
Benny snorted. "If you think I'm bad, you should meet some of the **other** pollutants around here," he said. "We are coming into a really bad neighborhood!"

"One of the biggest bad guys around here is PERC." Benny pointed to a store they were passing under. "PERC hangs out under that dry-cleaning place. The workers dumped him out in the gravel parking lot. Above ground, he's a hero--he gets people's clothes really clean. But down here he's a terror!

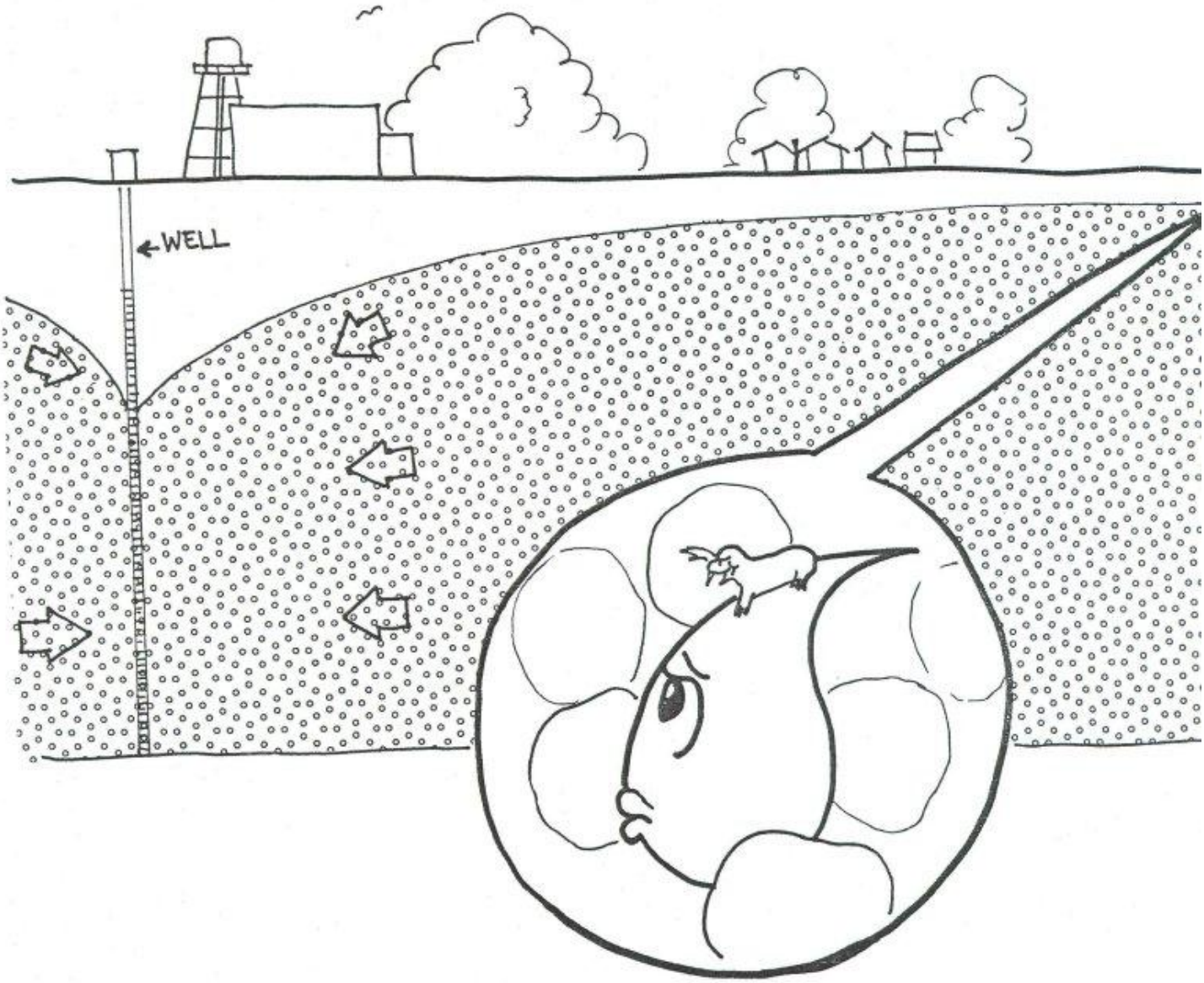
Benny pointed again. "Over there is the Smith's house. They used to dump left-over paint and paint thinners in their back yard. That's how MEK got down here. And Toluene--we call him Tolly. They're great at their jobs--removing paint and stuff like that. But if they get into ground water ... boy, are they trouble!"



"And over there is the Jones' house. The water they use all goes into the ground, into a big box called a septic tank. But they keep flushing chemicals down the toilet. They never think about how the chemicals could end up **here**."



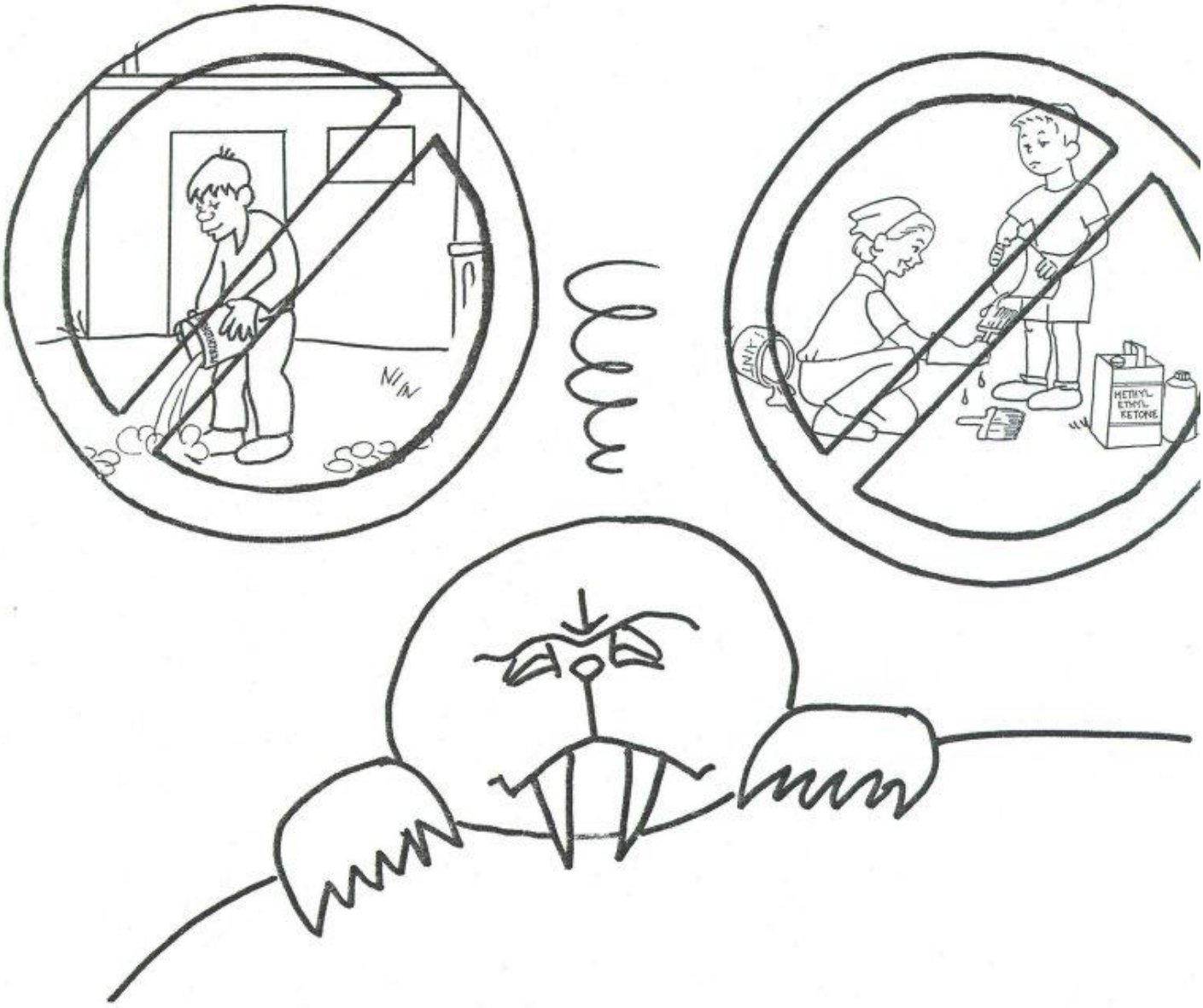
"But this is the worst place," said Benny. "A big company used to clean off bicycle parts with some chemicals, and then they let the rinse water go into that big pit. They did that for years and years. No-one knew the chemicals could end up in their drinking water."



"Their **drinking** water?!" said Dew. "How could these chemicals end up in their drinking water?! We're deep underground!"

"Yes, but there's a Big Well way up ahead," said Benny. "The well pulls you water drops out of the ground and if someone bad like me is hanging on, we can go into the drinking water with you."

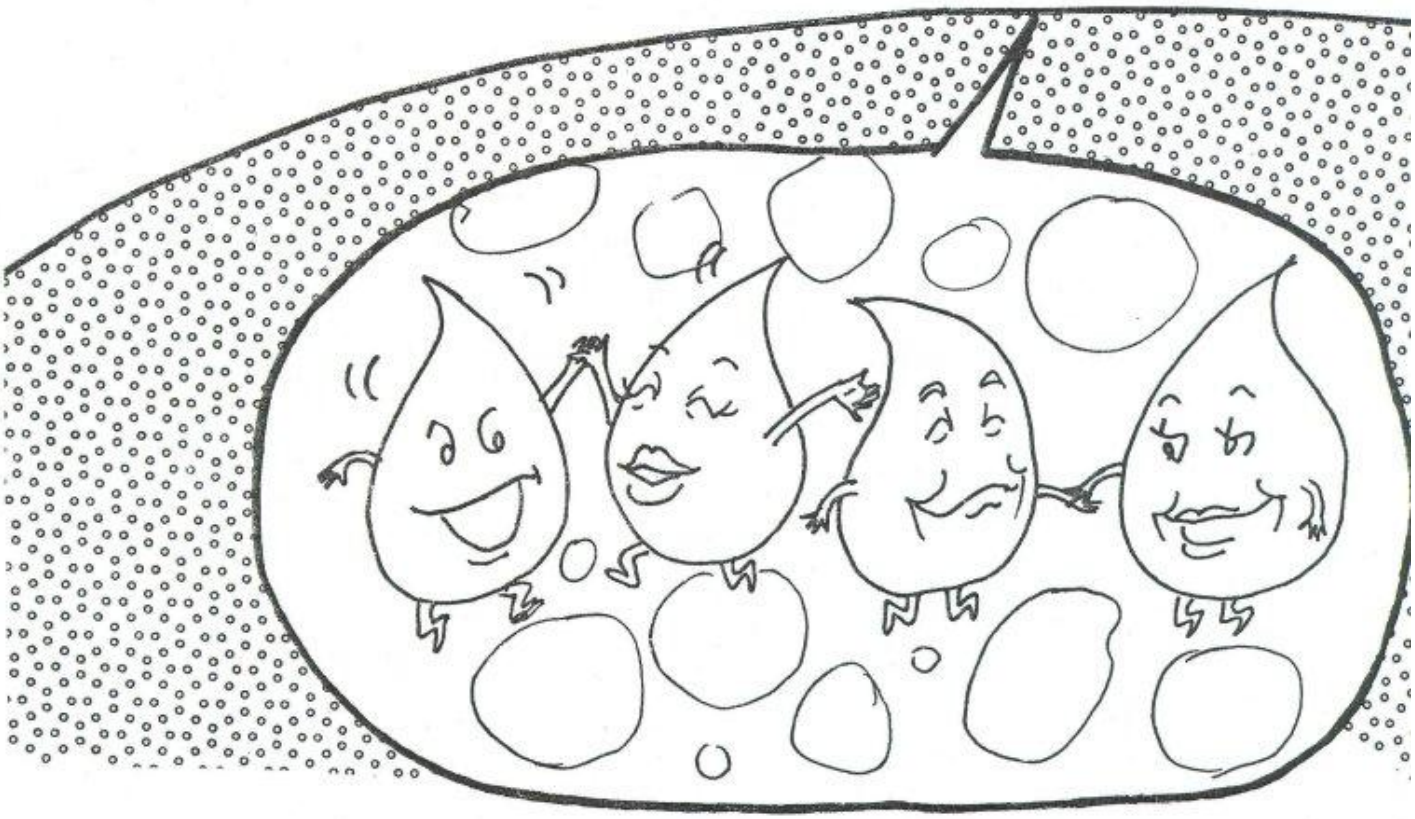
"Ugh!" said Dew. "Those poor people!"
"But we don't get into the drinking water like we used to," sighed Benny.
"Why not?" asked Dew.
Benny scowled and his little fangs stuck straight out. "Because of *Wellhead Protection*! It ruined everything!"
" ... What's *Wellhead Protection*?" asked Dew.



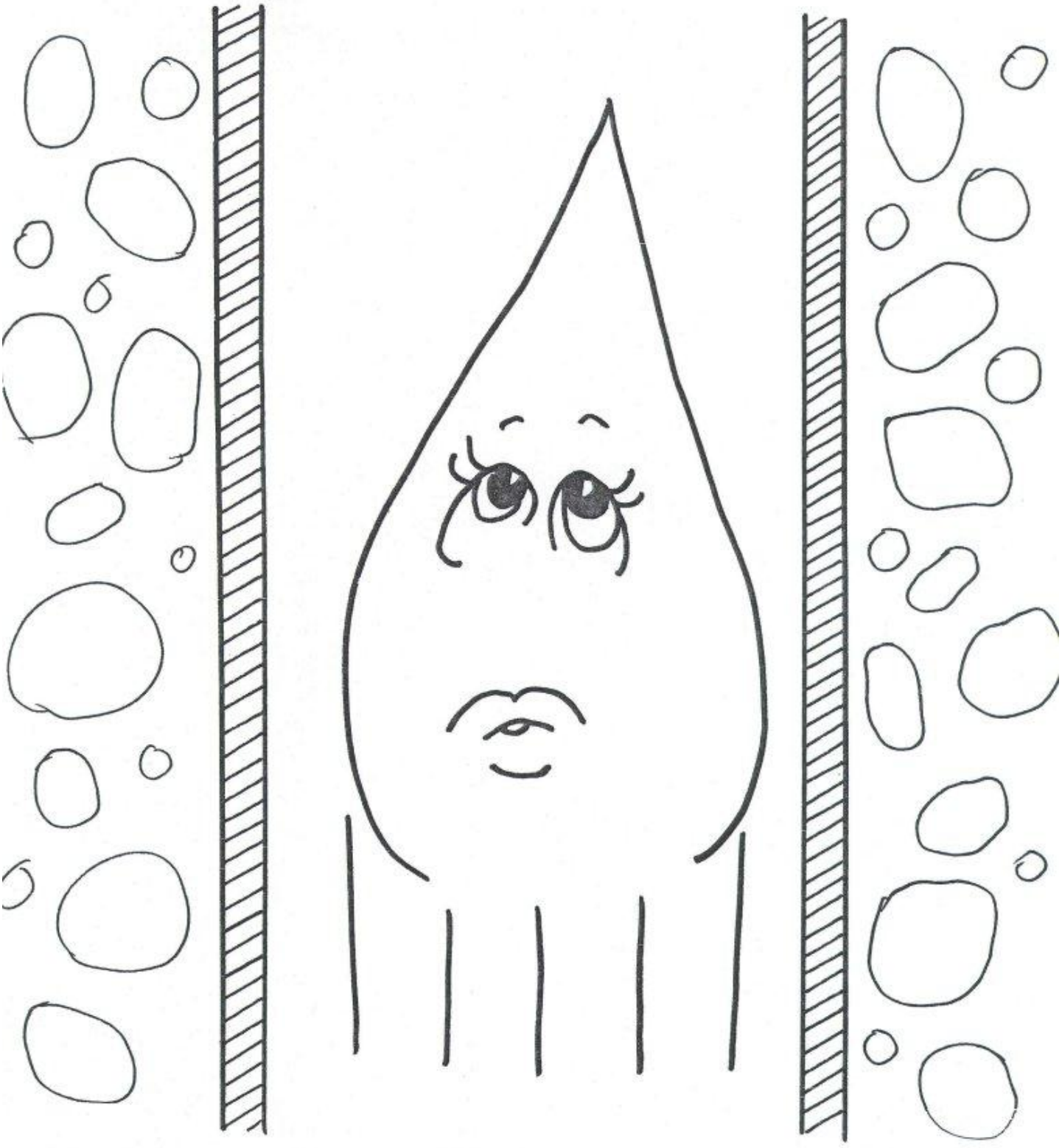
Benny snarled. "It's what the people using the Big Well are doing to prevent bad guys like me from getting into their drinking water. They've taught people **where** to store chemicals, to keep us away from the Big Well. They've taught people **how** to store chemicals, so we can't escape! They've taught people to be careful about **spilling** chemicals! In the Wellhead Protection Area, people like the Smiths and Jones don't throw us in their backyard or down the toilet--they use us up or recycle us!"

Benny continued: "There, even the *kids* know about Wellhead Protection! They know the soil doesn't always keep me and my buddies from getting into the ground water. They know they should tell someone if they see cans or drums of chemicals lying on the ground. Those kids are too smart!"

Suddenly Benny jumped off.
"Hey, where are you going?!" called Dew.
"I'm staying here, closer to my buddies," said Benny. "The Wellhead Protection Area is no fun for me. So long, Dew!"

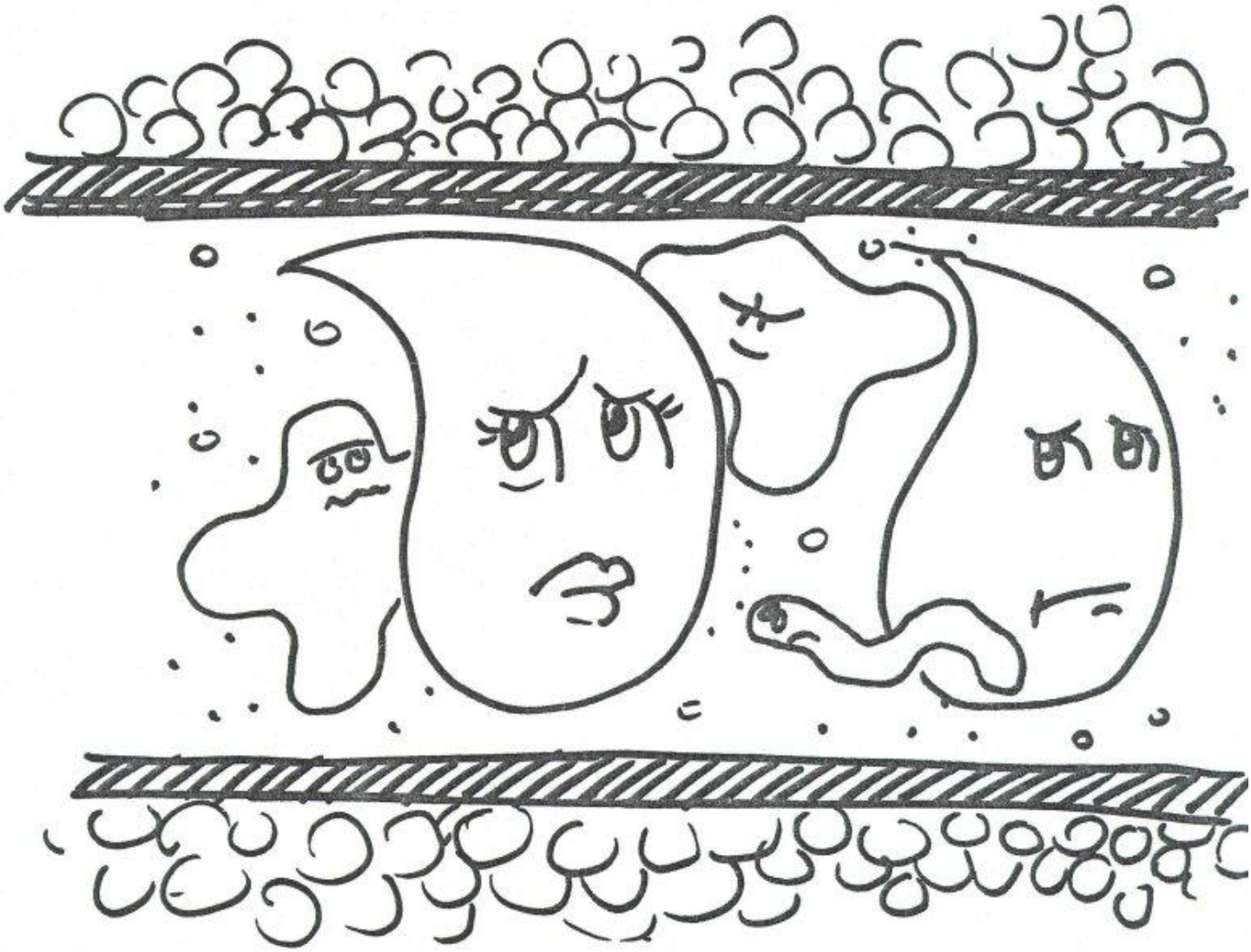


Unlike Benny, Dew and her friends were HAPPY to reach the Wellhead Protection Area. They felt much safer without creepy trouble-makers like Benny around. They were so happy to be in such a clean, safe place that they began to dance, and hardly noticed that they were going faster and faster, until suddenly--



WHOOSH! Up Dew went, through pipes and more pipes, so fast she could hardly breathe! She and her friends were at the water treatment plant, getting cleaner than they'd ever been before, clean enough to drink!

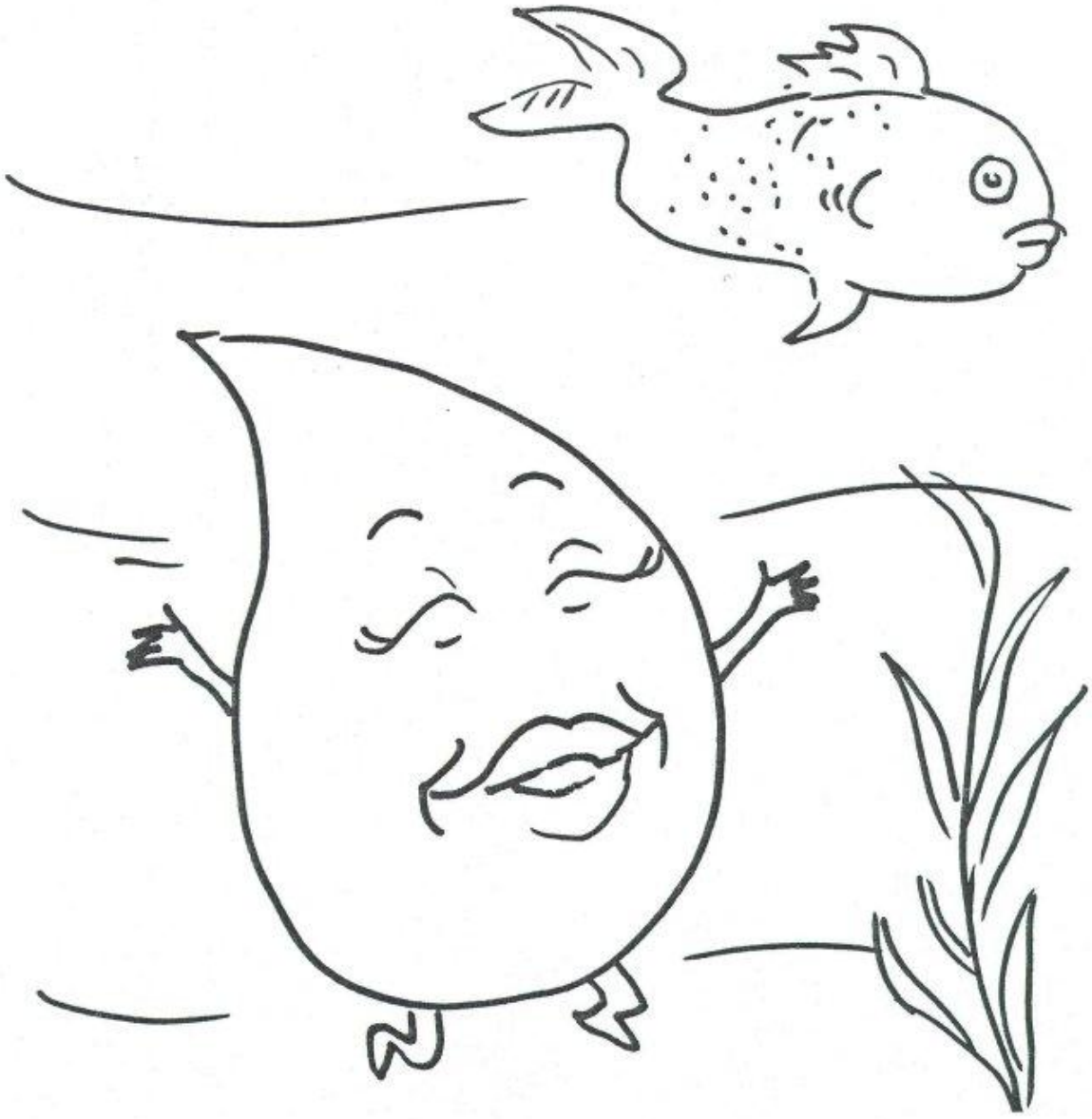
Suddenly, Dew popped out into the air. Below her was little Tommy Smith, enjoying a shower in nice clean water.
"Yahoo!" sang Dew. "I'm in the air again!" But just as quickly, Dew found herself sliding down the bathtub into ... more pipes!



"Gee, I'm really getting tired of these pipes!" grumbled Dew. "I can't see where I'm going!"

There were many other water drops with her, but every minute it seemed like more bacteria and other nasty things were joining them in the pipe. "Better get used to this," one of the other drops told Dew. "We're **WASTEWATER** drops now."

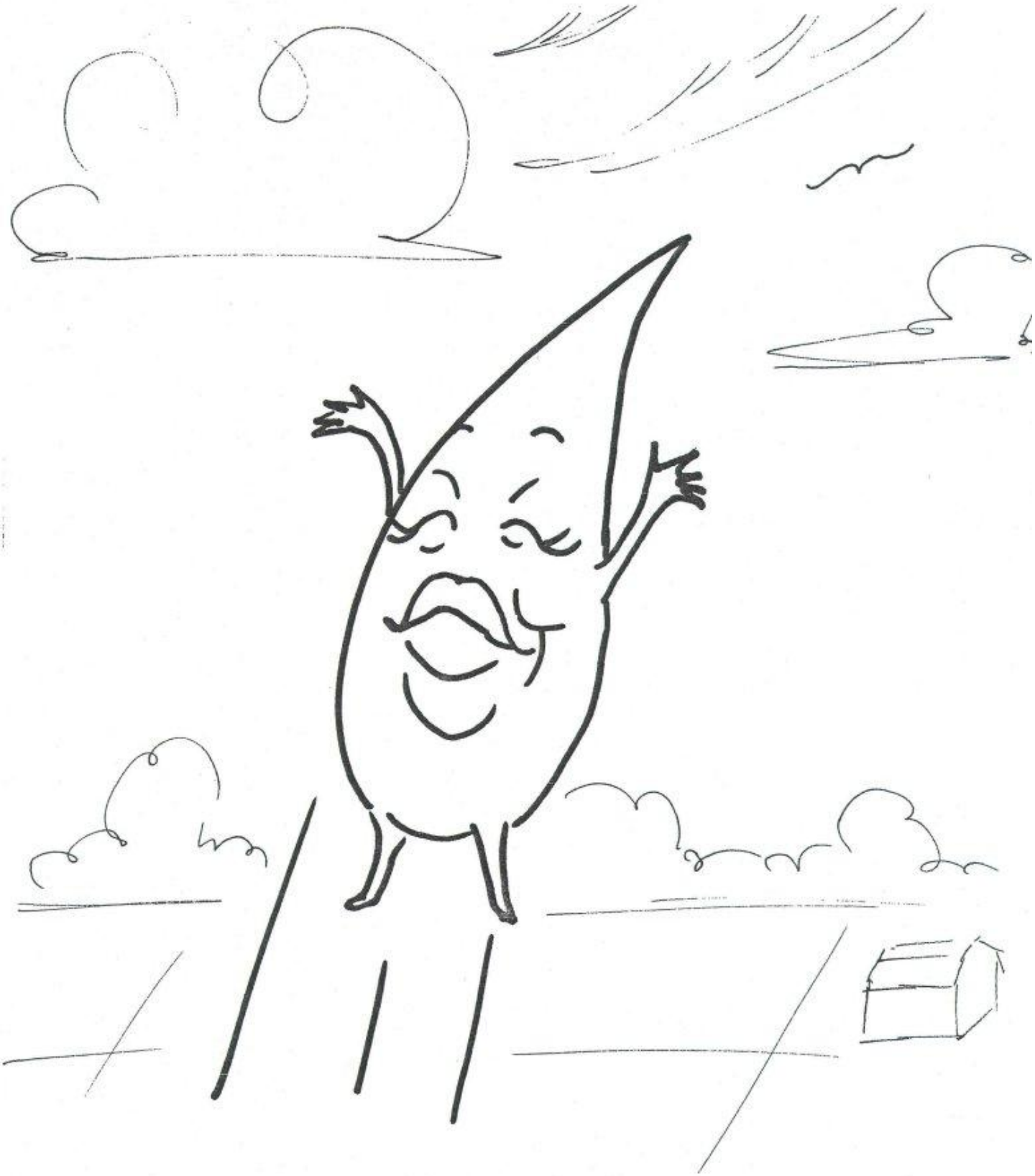
After a while they reached a place where they were cleaned again--the wastewater treatment plant. The bacteria were left behind. What a relief!



Finally, Dew was out of pipes, out of buildings. She was in a stream, filled with fish! It was almost like home! "Am I back in the ocean?" she asked one of the others.

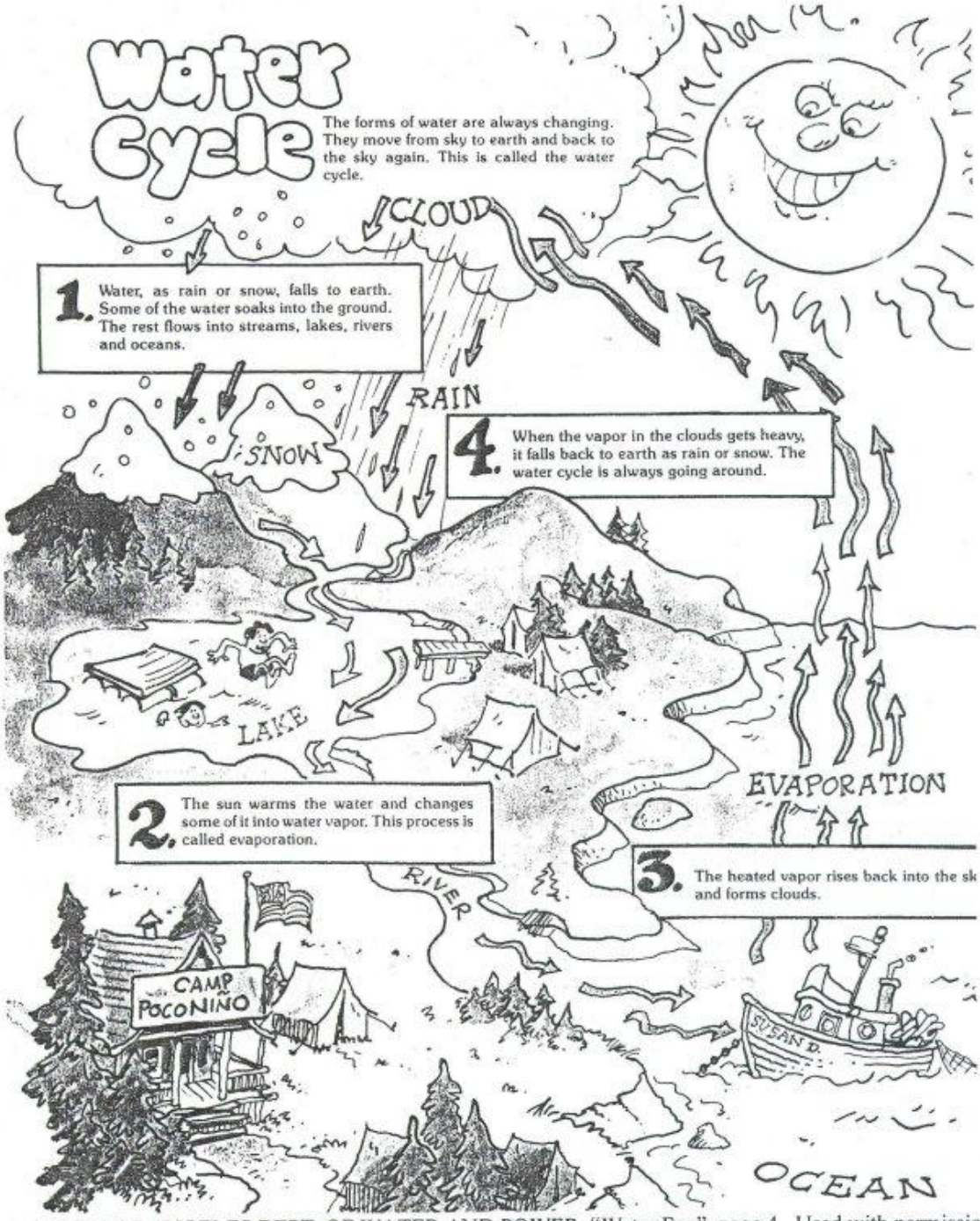
"No," he answered. "You're a **SURFACE WATER** drop again, but you're not in the ocean ... yet. You might end up there. Maybe."

Dew thought about that. It would be nice to be back home, where she felt safe. Still, what an adventure she'd had! She'd learned about people on land and how they didn't always protect drops like her. She hoped they would all begin to practice Wellhead Protection, and soon! And as she thought about it, she felt herself getting lighter and lighter ...



And suddenly she was flying back into the air!
"Here we go again!" laughed Dew.

Dew's adventure was just one of many that can happen to a drop of water. Water moves from place to place in the WATER CYCLE. The water cycle looks like this:



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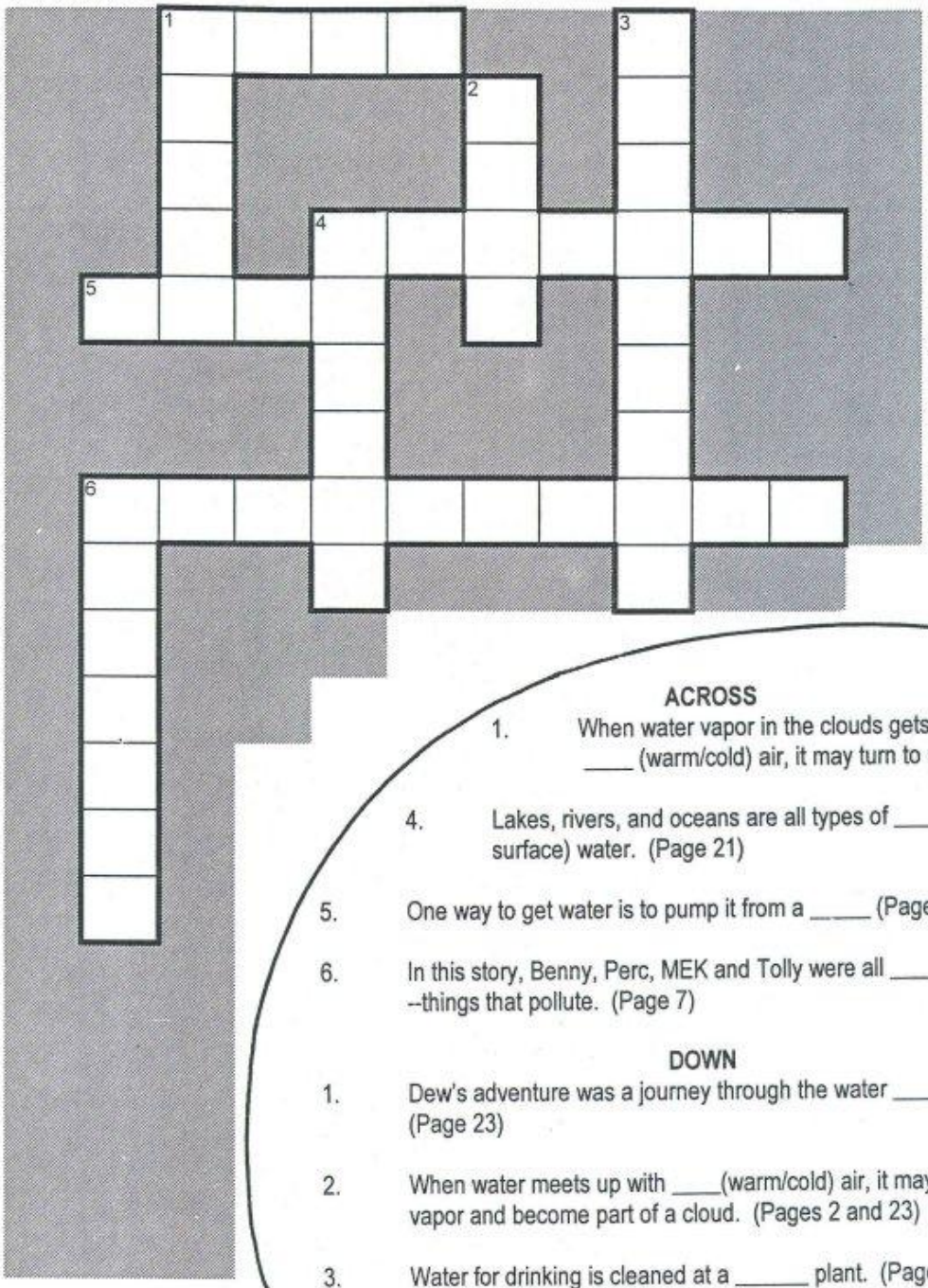
More Adventures for Dew....

1. Write your own story about where Dew could travel. Use the picture above for ideas.
2. If Dew fell into the playground of your school, where would she go? If she landed near your house, where would she go? Ask your parents or teacher for help.

A Crossword Puzzle on WATER

Here is a puzzle about Dew's adventure and the Water Cycle. If you get stuck, a clue may be found on the page of the coloring book that is listed beside each word.



ACROSS

1. When water vapor in the clouds gets heavy, or if it meets up with ____ (warm/cold) air, it may turn to rain. (Page 23)

4. Lakes, rivers, and oceans are all types of ____ (ground/surface) water. (Page 21)

5. One way to get water is to pump it from a _____ (Page 13)

6. In this story, Benny, Perc, MEK and Tolly were all _____ --things that pollute. (Page 7)

DOWN

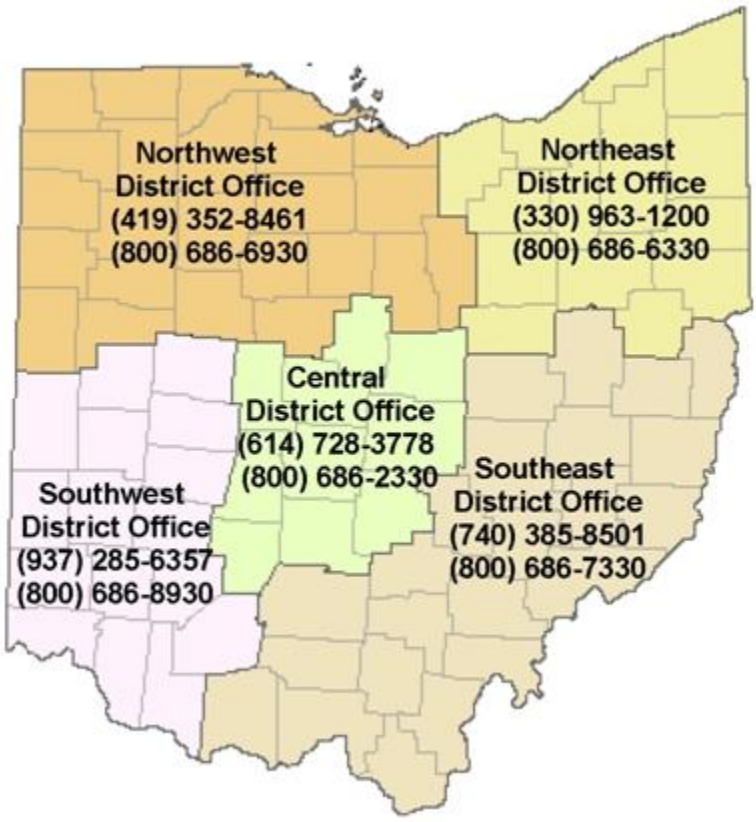
1. Dew's adventure was a journey through the water _____. (Page 23)

2. When water meets up with ____(warm/cold) air, it may turn into vapor and become part of a cloud. (Pages 2 and 23)

3. Water for drinking is cleaned at a _____ plant. (Page 18)

4. Ground water moves very ____ (quickly/slowly). (Page 5)

6. Wellhead protection is a program to _____ pollution of ground water that is used for public drinking water. (Pages 14 and 15)

For more information on Wellhead Protection or Source Water Protection, please contact the Ohio EPA in your district (see map below), or contact the Central Office at:

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