

## 'Tastes like water': how a US facility is recycling sewage to drink

### Level 2: Intermediate

#### 1 Warmer

a. Discuss the following questions in pairs.

- What problems can cities have with drinking water?
- Would you drink recycled wastewater if it were cleaned? Why or why not?

#### 2 Key words

a. Find the words from the wordpool in the article. Then use the words to complete the definitions using the correct form.

|                |           |           |           |               |
|----------------|-----------|-----------|-----------|---------------|
| bacteria       | disinfect | equipment | membranes | sewage        |
| conserve       | drawback  | imported  | minerals  | water sources |
| cost-effective | droughts  | leftovers | model     |               |

- \_\_\_\_\_ : things that remain after a meal or a process
- \_\_\_\_\_ : thin layers that remove things, often from a liquid
- \_\_\_\_\_ : brought into a country or region from a different country or region
- \_\_\_\_\_ : to clean something carefully in order to kill harmful bacteria or viruses
- \_\_\_\_\_ : long periods without any rain
- \_\_\_\_\_ : a negative consequence; disadvantage
- \_\_\_\_\_ : water and waste that is carried away from homes through pipes
- \_\_\_\_\_ : a good example of something that people often follow or use as a guide
- \_\_\_\_\_ : achieving good results without costing too much money
- \_\_\_\_\_ : small organisms, some of which can cause disease
- \_\_\_\_\_ : items you need in order to do something such as a job, hobby or sport
- \_\_\_\_\_ : to protect natural resources from harm or destruction
- \_\_\_\_\_ : different places where water comes from, e.g. rivers, natural springs, etc.
- \_\_\_\_\_ : natural substances that are found in food, water and the Earth, e.g. calcium

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**b. Complete the sentences with words from the previous activity in the correct form.**

1. An engineer tested the \_\_\_\_\_ to make sure it worked safely.
2. One \_\_\_\_\_ of solar energy is that it's dependent on the weather.
3. Drinking water can contain \_\_\_\_\_ that are good for your body.
4. Farmers are trying to \_\_\_\_\_ water because of the long period of dry weather.
5. \_\_\_\_\_ fruits such as mangoes and pineapples are brought into the UK because they don't grow there.
6. An architect will often build a(n) \_\_\_\_\_ of the building they have designed to show to their clients.
7. Solar panels are becoming a common and \_\_\_\_\_ source of energy.
8. Scientists use filters with thin \_\_\_\_\_ to clean dirty water.
9. Long \_\_\_\_\_ can damage crops and cause food shortages.
10. This spray is good at \_\_\_\_\_ the surfaces in the kitchen.
11. \_\_\_\_\_, such as bricks and pieces of metal were removed from the building site before work could start.
12. \_\_\_\_\_ from homes and factories can pollute rivers and lakes.
13. Water that isn't clean may contain dangerous \_\_\_\_\_.
14. Because of climate change, governments are looking at different \_\_\_\_\_ in order to provide drinking water to people.

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*A California project can turn sewage into drinking water in less than an hour and could be a blueprint for other water-scarce regions*

**Katharine Gammon**

**6 June, 2025**

- 1 The Groundwater Replenishment System facility in Orange County, California, contains the equipment to move up to 130 million gallons of water each day – enough for a million people. The facility, which opened in 2008, is part of an effort to help conserve water.
- 2 It takes the sewage from the building next door and pushes it through a three-step process to make clean water. The facility provides 45 per cent of central Orange County's water and helps reduce reliance on imported water.
- 3 In general, once sewage has been treated, the water is returned to rivers, but droughts and climate change mean that cities are using recycled sewage for drinking water. It is already done in Israel, Singapore and Kuwait, but Orange County is the first in the US to try the idea.
- 4 When the liquid reaches the plant it has already been through some treatment and is clean enough to go back into the oceans, but not clean enough to drink. The first step is to pump the water through special fibres – which look like tiny plastic straws – to remove bacteria.
- 5 Pipes then carry the water to a building where it is pushed through membranes that squeeze out the salts, organic chemicals and any leftovers. Finally, the water is treated with ultraviolet light and chemicals to disinfect anything that might remain.
- 6 After walking around all three buildings, we reach a sink with running, clear water. I drink a cup of it, expecting it to smell bad – but no, it's super clean, and tastes ok. That's because it doesn't contain any salts or minerals – they have been removed by the cleaning process. On the cup it says, "Tastes like water ... because it is water", chosen because it is the number one comment, says Mehul Patel, the executive director at the Orange County Water District.
- 7 The big drawback to this system is that making water – instead of taking it from the ground – takes a huge amount of energy and labour. The system uses 17 megawatts of electricity and has a monthly electricity bill of \$2.5 million (£1.85 million).
- 8 But the technology also offers some control over a future affected by climate change: the team plans several years ahead in terms of what they think their water needs will be and what the water sources will be.
- 9 Some places are looking to the oceans for drinking water, but wastewater is more cost-effective as a source of water because there are fewer salts in wastewater than sea water. That makes the energy costs of cleaning the water about half of what it would be to remove the salt.
- 10 The model is also being used in other areas in the US. Los Angeles County is building a water recycling project in the San Fernando Valley to produce 20 million gallons a day. Instead of sending treated wastewater out to sea, it will be cleaned for drinking water, just like in Orange County. There are also projects starting in Utah, Texas and Colorado.
- 11 The Orange County model has won awards, including a Guinness World Records title for the most wastewater recycled to drinking water in 24 hours on 16 February 2018. But the best praise is the public support for the water and the fact that people are happy to drink it.

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#### 3 Comprehension check

a. Are these sentences True (T) or False (F)?

- |  |       |
|--|-------|
| 1. The Groundwater Replenishment System can provide water for around one million people.               | T / F |
| 2. All the water from the facility comes from natural rivers and lakes.                                | T / F |
| 3. The facility uses a three-step cleaning process that includes special fibres and ultraviolet light. | T / F |
| 4. The recycled water contains many minerals and salts, which give it a strong taste.                  | T / F |
| 5. Treating wastewater costs more energy than taking water from the ocean.                             | T / F |
| 6. The US is the only country in the world where this model is used.                                   | T / F |

#### 4 Key language

a. Put these steps in the correct order (1-4) according to the article.

Step: \_\_\_\_\_

They use UV light and chemicals to clean the water.

Step: \_\_\_\_\_

Pipes carry the water to a different building.

Step: \_\_\_\_\_

People can safely drink the water.

Step: \_\_\_\_\_

They push the water through fibres to remove bacteria.

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b. Look at the example sentences. Choose the correct option a, b or c in each sentence.

**Active Voice:** *People drink tap water in most European countries.*

**Passive voice:** *Tap water is drunk in most European countries.*

1. When we change a *present simple* sentence to *simple present passive*, we use the ...

- a. present form of the verb.
- b. past participle form of the verb.
- c. *-ing* form of the verb.

2. In the *present simple passive*, we use ...

- a. *have / has* + past participle.
- b. *will* + base verb.
- c. *am / is / are* + past participle.

3. In the *present simple passive* with *can*, we use ...

- a. *can + be* + past participle.
- b. *can + is* + past participle.
- c. *can* + past participle + *have*.

c. Rewrite the steps in task a using the present simple passive and in the correct order.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

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#### 5 Discussion

**a. Discuss these questions.**

- According to the article, why is wastewater considered more cost-effective to treat than seawater?
- The facility uses a large amount of electricity to treat the water. Do you think this system is sustainable? Why or why not?

#### 6 In your own words

- a. The article describes the process by which wastewater is turned into drinking water. Summarise the information by selecting and reporting the main features and making comparisons where relevant. Write at least 120 words.**
- b. Share your summaries with the class.**