

# The Water Treatment Process

This is the true story of how raw water from nature gets cleaned and purified and ends up at your tap...

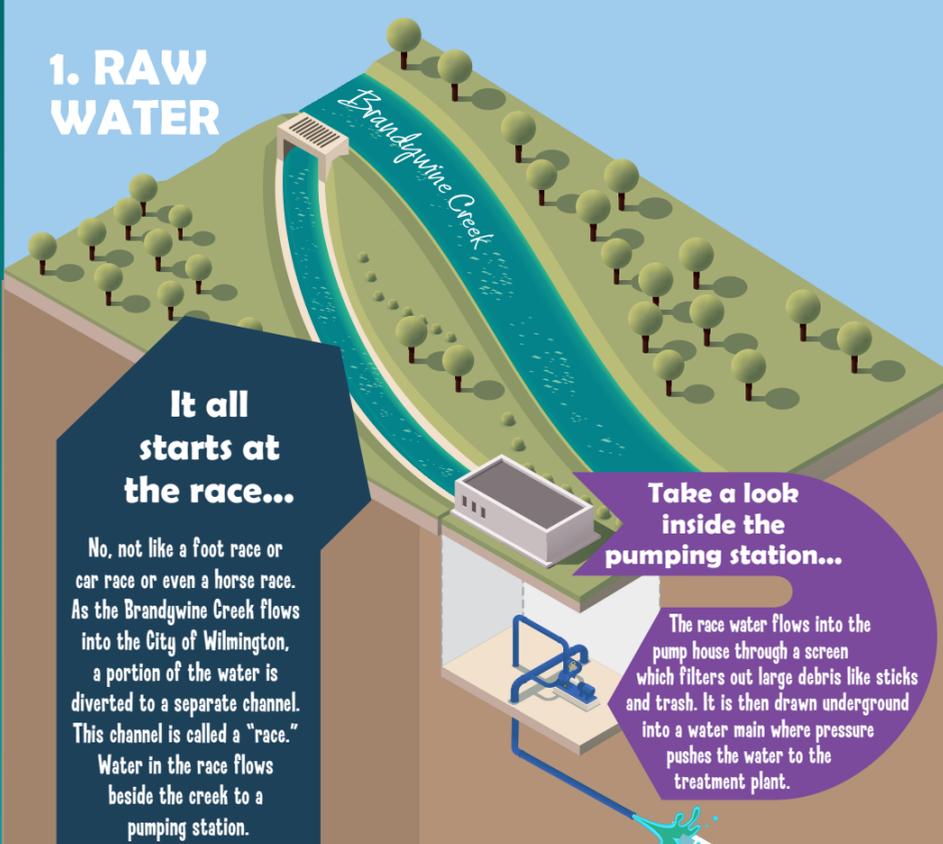
When you're done reading, try the word challenges on the far right.

And now the finished product arrives at your tap...

## 6. DRINKING WATER

We take for granted how easy it is to turn on our faucet and have access to clean drinking water. You may not have known all that is involved to make sure our water is safe to drink, but now you do!

## 1. RAW WATER



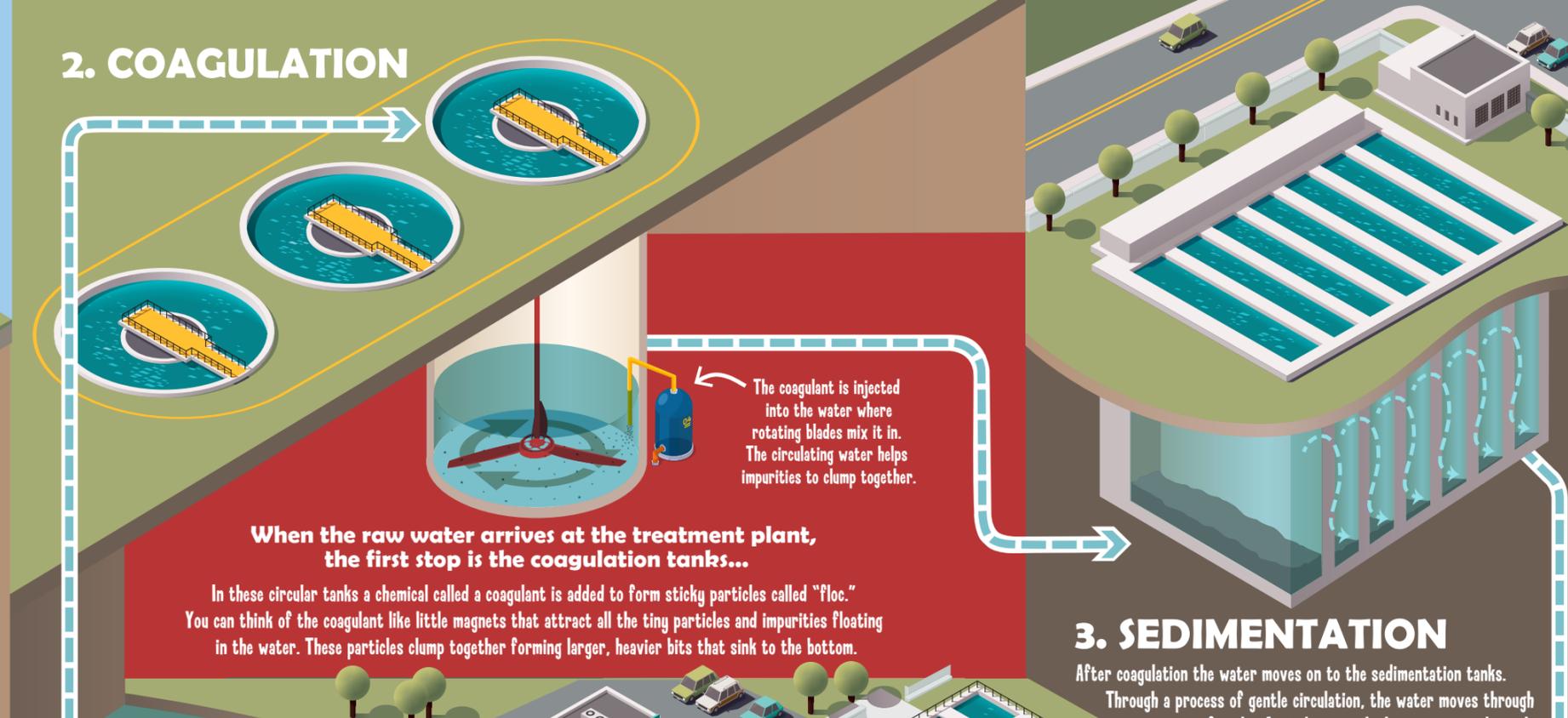
**It all starts at the race...**

No, not like a foot race or car race or even a horse race. As the Brandywine Creek flows into the City of Wilmington, a portion of the water is diverted to a separate channel. This channel is called a "race." Water in the race flows beside the creek to a pumping station.

**Take a look inside the pumping station...**

The race water flows into the pump house through a screen which filters out large debris like sticks and trash. It is then drawn underground into a water main where pressure pushes the water to the treatment plant.

## 2. COAGULATION



**When the raw water arrives at the treatment plant, the first step is the coagulation tanks...**

In these circular tanks a chemical called a coagulant is added to form sticky particles called "floc." You can think of the coagulant like little magnets that attract all the tiny particles and impurities floating in the water. These particles clump together forming larger, heavier bits that sink to the bottom.

The coagulant is injected into the water where rotating blades mix it in. The circulating water helps impurities to clump together.

## 3. SEDIMENTATION

After coagulation the water moves on to the sedimentation tanks. Through a process of gentle circulation, the water moves through a series of tanks. As it does so, the heavier materials in the water settle to the bottom. As more dirt settles out of the water, it becomes cleaner as it moves to each new tank.

## 5. CHLORINATION

In the final process of water purification, chlorine is added as a disinfectant. The water is now clear, clean and free of contaminants. It's ready to be pumped to water tower storage tanks and distributed to customers, like you.

## 4. FILTRATION

The clear water from the sedimentation tanks now moves to the filtration system. Here the water is passed through a series of sand, charcoal or gravel layers to remove any tiny impurities that still remain.

## Word Search

Find all the words relating to the water treatment process from the list below the puzzle. Words can go in any direction including backwards and diagonal.

S	N	M	F	L	U	M	C	C	R	C	P	N	M	
V	O	F	F	L	F	F	Q	L	M	H	X	O	D	J
L	I	F	C	O	A	G	U	L	A	T	I	O	N	R
X	T	U	I	W	R	U	P	R	M	T	G	I	M	E
R	A	C	X	L	K	E	C	U	A	L	N	M	Q	W
Z	T	L	B	T	T	O	T	N	M	A	W	P	E	O
R	N	R	G	X	A	R	I	L	E	P	F	U	Z	T
Q	E	Y	Q	L	N	R	A	L	I	F	V	R	E	Z
S	M	Z	Y	A	O	T	C	T	L	F	O	I	D	X
S	I	Z	M	L	K	B	W	O	I	C	U	T	F	M
K	D	V	H	T	G	B	C	C	H	O	T	I	M	I
I	E	C	E	R	U	S	S	E	R	P	N	E	U	H
M	S	L	V	D	J	W	P	V	I	B	C	S	R	J
R	M	Z	F	W	T	Z	D	Q	E	V	L	N	I	Y
O	T	R	A	C	E	C	R	L	D	E	A	X	S	R

CHARCOAL	FILTRATION	PUMP
CHLORINATION	FLOC	RACE
CLEAN	FLOW	SEDIMENTATION
COAGULATION	IMPURITIES	TOWER
FILTER	PRESSURE	

## Word Scramble

Unscramble the words below and write them in the spaces to the right. Once you've unscrambled all five, unscramble the secret word made from the light green letters to find out what all the other words have in common.

AKTN \_\_\_\_\_  
 YPFURI \_\_\_\_\_  
 NWFILC \_\_\_\_\_  
 RICONHEL \_\_\_\_\_  
 MTERANTTE \_\_\_\_\_

Check your answers on the back page.

## Answers:

### Word Search

S	N	M	F	L	U	M	C	C	R	C	P	N	M	
V	O	F	F	L	F	F	Q	L	M	H	X	O	D	J
L	I	F	C	O	A	G	U	L	A	T	I	O	N	R
X	T	U	I	W	R	U	P	R	M	T	G	I	M	E
R	A	C	X	L	K	E	C	U	A	L	N	M	Q	W
Z	T	L	B	T	T	O	T	N	M	A	W	P	E	O
R	N	R	G	X	A	R	I	L	E	P	F	U	Z	T
Q	E	Y	Q	L	N	R	A	L	I	F	V	R	E	Z
S	M	Z	Y	A	O	T	C	T	L	F	O	I	D	X
S	I	Z	M	L	K	B	W	O	I	C	U	T	F	M
K	D	V	H	T	G	B	C	C	H	O	T	I	M	I
I	E	C	E	R	U	S	S	E	R	P	N	E	U	H
M	S	L	V	D	J	W	P	V	I	B	C	S	R	J
R	M	Z	F	W	T	Z	D	Q	E	V	L	N	I	Y
O	T	R	A	C	E	C	R	L	D	E	A	X	S	R

### Word Scramble

TANK  
 PURIFY  
 FLOWING  
 CHLORINE  
 TREATMENT  
 WATER