



## Iron and Iron Bacteria in Water

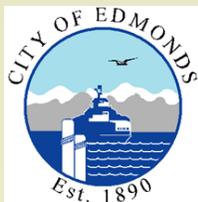
Ever noticed orange slime in slow moving drainage?

This is caused by iron bacteria, which are normally found in the soil and water in our area. Read this fact sheet to learn more!

### Questions?

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# Iron Bacteria and Orange Slime

## What are iron bacteria?

Iron bacteria are common residents of our soil that use dissolved iron as an energy source, and are **not harmful to human health**. These long, thread-like bacteria convert dissolved iron to rust-colored iron oxides, which can be stored in the slime that surrounds the bacteria, or which settle to the bottom of the drainage, forming orange clumps. The slime helps the bacteria attach to each other and stationary surfaces (such as rocks, pipes, and pumps), in order to gather nutrients needed for survival.

## Where does the iron come from?

Iron is a common element in Washington State soils. Groundwater that flows through iron-containing soils picks it up, and brings the iron to the surface. Iron bacteria colonize these transitional areas, utilizing the dissolved iron from groundwater and oxygen from the air to create the rust colored deposits.

## How can we identify iron bacteria?

Orange or brown slime, and oily sheens, are often the first indication that iron bacteria are present. The orange slime is a result of the bacteria taking up the iron oxide into the protective material. The oily sheen is caused by the decomposition of the bacterial cells, and is different from petroleum product sheens in that it will break apart when touched. Petroleum product sheens will tend to ripple or spread out.



Iron bacteria discharging from drainage pipe.

## What can we do about iron bacteria?

The best treatment for an iron bacteria problem is prevention. Have all fill material tested for iron content before using it or exposing it. Once established, iron bacteria problems are difficult, if not impossible, to correct. Iron rich soil can be replaced by fill with lower iron content, but this could be costly and may have other environmental impacts. Since iron bacteria aren't harmful, sometimes the only feasible thing is to accept it for the natural occurrence that it is.