Type 1863 is quite a rare filament but can often be found lurking in wastewaters that are high in grease and oil, such as in industrial wastewaters.

It’s a short filament (10-50 µm) consisting of oval shaped cells (0.8-1.2 x 1.5 µm in size) that aren’t encased in any distinctive cell wall. Sometimes the filament is coiled up and can appear branched, however Type 1863 doesn’t produce any true branching or attached growth.

You can generally find Type 1863 extending from the floc surface or in the clear liquid between flocs.

Type 1863 generally stains Gram negative but can sometimes stain Gram positive which means that it can often be confused with Bacillus bacteria. The way to distinguish between the two is that Type 1863 looks like a string of pearls or a chain of short sausages.

High numbers of Type 1863 generally indicates low DO, short MCRT, and potentially high grease or oil in the wastewater influent. This filament can also be responsible for foaming when conditions are right. Under high F:M ratios and low MCRT conditions (typically MCRT of less than two days), Type 1863 can contribute to the formation of a white-grey, easily collapsible foam and is often reported by operators as encouraging the formation of scum.

Type 1863 is generally an innocuous filament, as it doesn’t contribute to poor settling and due to its rarity, it is generally unlikely to cause regular foaming issues in comparison to filaments such as Nocardia. However foaming incidences can be caused with a reduction in primary clarification when primary clarifiers are taken out of service for maintenance.

If foaming issues are prevalent, Type 1863 can be controlled by increasing MCRT (halting wasting) or with grease control upstream of the activated sludge system.

Have you got interesting bugs? Send us a photo. Find out what is growing in your treatment plant…

Mott Macdonald New Zealand provides microscopy, optimisation and troubleshooting services for municipal and industrial wastewater treatment, as well as our renowned water industry engineering capabilities.

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After staining, Microthrix declared loudly, “I’m purple!” A passing amoeba asked, “Are you sure?” Microthrix replied: “Yes. I’m gram-positive!”