

Bacteria Damage

- Sulfate Reducing Bacteria
 - corrosion
 - H₂S evolution
- Polymer destruction
- Bacterial colony removal

Bacterial Problems

- Aerobic - lives only w/ oxygen
- Anerobic - lives w/o oxygen
- Facultative - w/ or w/o, but better one way

- Problems Caused
 - eats polymer
 - causes formation damage and corrosion
 - SRBs may sour reservoir

Bacterial Populations

- Free Floating - easy to kill, not that plentiful
- Sessile (attached colonies)
 - 100,000 x free floating populations,
 - very difficult to kill,
 - live in densely matter layers
 - protected by slime layer
 - highly accelerated corrosion underneath

Bacterial Sources

- **Some small populations dormant in reservoir? Probably.**
- **drinking water < 1000 cells/ml**
- **sea water - high populations of SRBs**
- **brackish waters - very high populations**
- **river/pond - moderate to high populations**
- **concentrated brines - very low concentrations**
- **acids - very low to almost none**

Bacterial Control

- Acids - kills free floating, little effect on sessile colonies
- Bactericides - (same as acid) kills free floating, little effect on sessile colonies
- Bleaches and Chlorine - (3% to 8%) strips slime layer, dissolves cell wall, can't remove biomass. Watch corrosion!
- Bleach, followed by acid - good removal history.