Wastewater Treatment

1: Preliminary Treatment
- Screens remove large objects that could damage downstream equipment
  - Plastics, rags, and garbage
- Each consecutive mesh removes smaller sized particles
- Removed solids are sent to a landfill or an incinerator

2: Primary Treatment
- Clarifiers: big, concrete basins that hold the wastewater
- Large sludge particles settle
  - Collected in a hopper, pumped to sludge treatment facility
  - Applied to land as fertilizer, incinerated for electricity, or anaerobically digested to biogas
- Grease and oils rise and are scraped off the top

3: Biological Treatment Part 1
- Removes organic content in wastewater
- Bacteria are added to wastewater streams
  - Digest organic matter
- Oxygen is added to support bacteria

4: Biological Treatment Part 2
- More clarifiers
- Bacteria settles to bottom of clarifier

5: Tertiary Treatment
- Disinfectant eradicates remaining microorganisms and pathogens
- Most common: chlorine
  - Similar method as chlorine in swimming pools

6: Discharge
- Clean water is discharged into a nearby lake or river or into groundwater
- The CWP discharges their water into the Grand River
  - Discharged water is much cleaner than the Grand River!