

Volunteer Monitoring of Emerging Contaminants in the Milwaukee River Basin

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Citizens of the Lake and Rivers:



Milwaukee Riverkeeper

Mission: Protect, improve and advocate for water quality, riparian wildlife habitat, and sound land management in the Milwaukee, Menomonee, and Kinnickinnic River Watersheds.



Milwaukee River Basin



Milwaukee River Basin

Basin Characteristics

- 860 Square Miles

Milwaukee River Basin



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- 860 Square Miles
- 3 Major Watersheds
 - Milwaukee

Milwaukee River Basin



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 - Kinnickinnic

Milwaukee River Basin

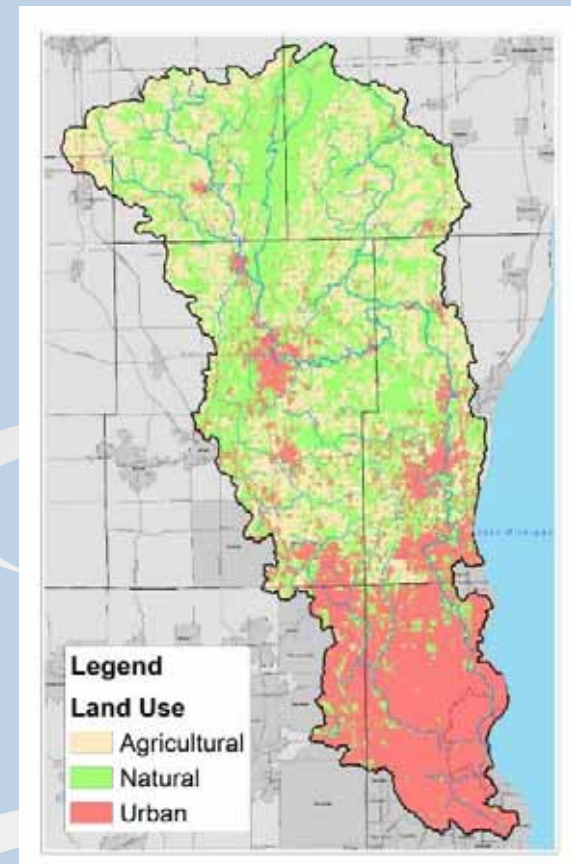


Milwaukee River Basin

Basin Characteristics

- 860 Square Miles
- 3 Major Watersheds
 - Milwaukee
 - Menomonee
 - Kinnickinnic
- Diverse Land use
 - 71% Agricultural / Natural
 - 29% Urban

Milwaukee River Basin



Monitoring Programs

Water Quality



Stormwater



Bacterial Community



Native Mussels



Road Salt



Emerging Contaminants



Monitoring Programs

Emerging Contaminants



What is an Emerging Contaminant?

Any compound that we don't typically look for in traditional water quality monitoring programs.



Categories of Emerging Contaminants



Personal Care Product



Pharmaceuticals



Recreational Drugs



Herbicides/Pesticides

Citizens of the Lakes and Rivers

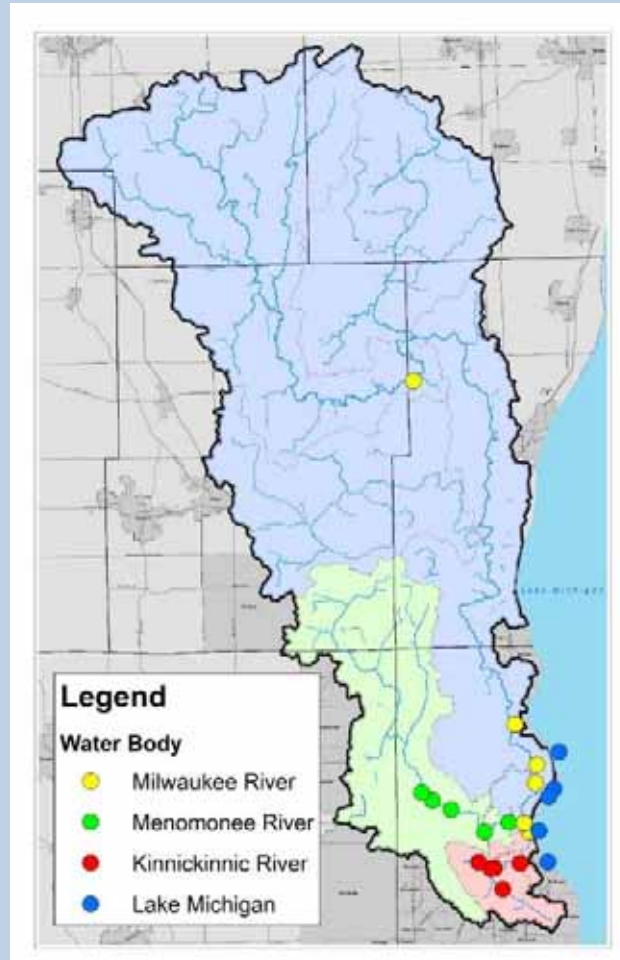
Project Partners:



Project Goals:

- Monitor emerging contaminants in Southeastern Wisconsin Rivers and Lake Michigan.
- Educate the public on the presence and impacts of emerging contaminants in our waterways.

Sample Sites



Water Sampling

- Time Series
 - 2 Sites – Samples collected weekly
- Sampling Events
 - Spring, Summer, Fall
 - All Sites Sampled
 - Volunteer Based



Volunteer Recruitment

Thanksgiving Water Sampling Event



Volunteer Recruitment

Blue Friday Water Sampling Event

“Avoid the stores, get outdoors, and let’s turn this Black Friday Blue”



Volunteer Recruitment

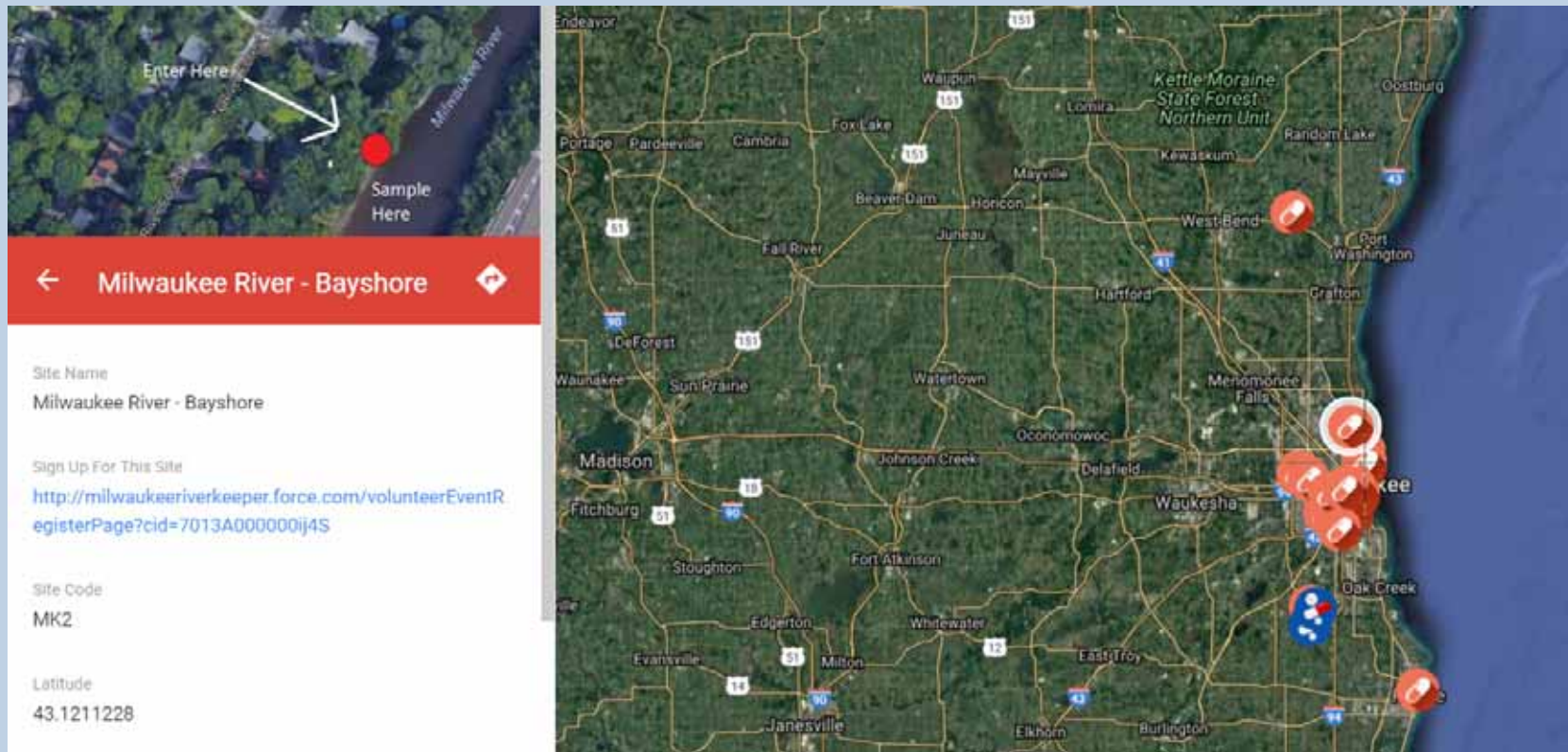
2018 Emerging Eighteen Water Sampling Event Bracket



PROJECT PARTNERS: MILWAUKEE RIVERKEEPER UW MILWAUKEE Joseph J. Zilber School of Public Health URBAN ECOLOGY CENTER CARROLL UNIVERSITY FRESHWATER SCIENCES



Volunteer Recruitment



Volunteer Recruitment

SPACES REMAINING 1

Ready to sign up?
Fill out the following information!

FIRST NAME

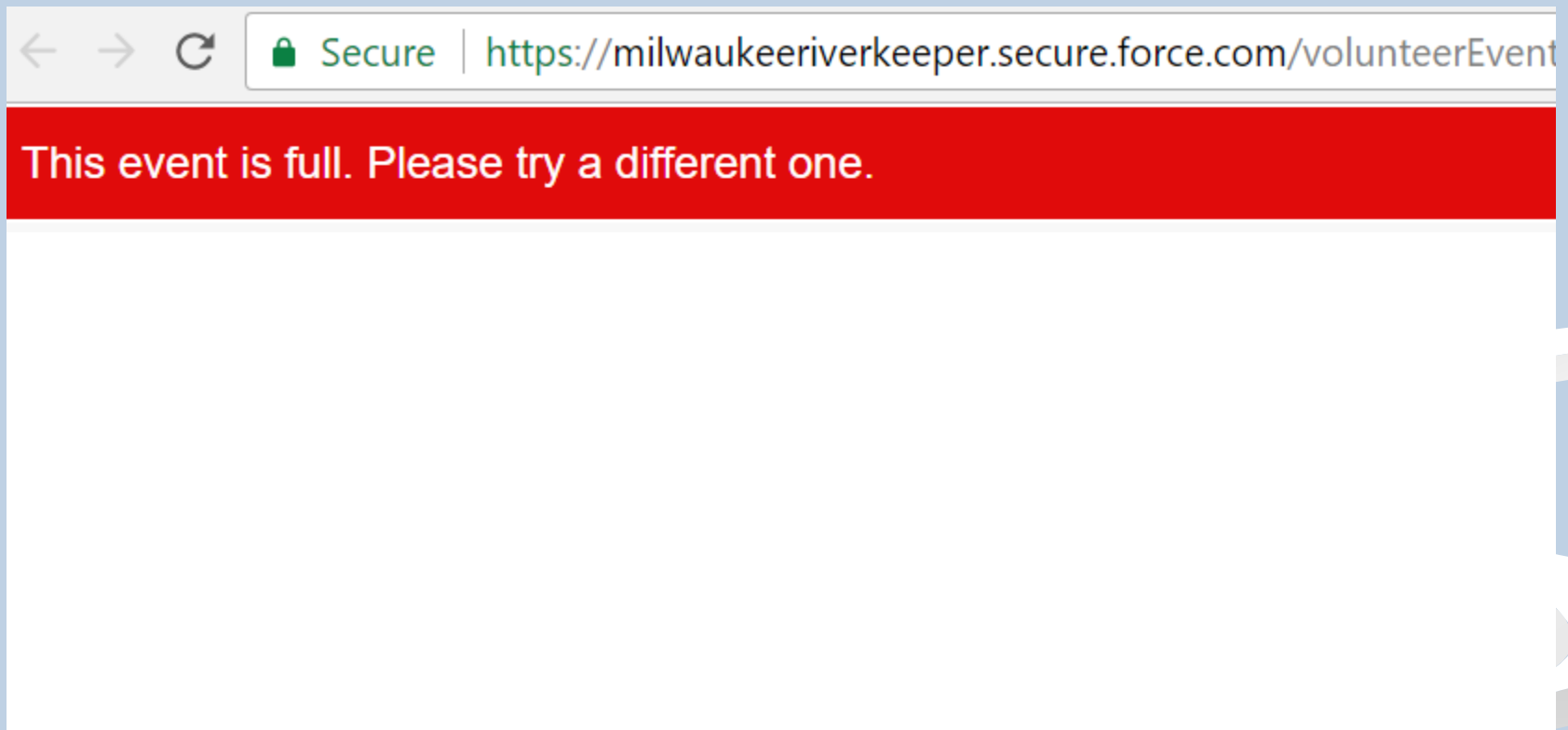
LAST NAME

EMAIL

ZIP CODE

PHONE

Volunteer Recruitment



Volunteer Sampling



Photo Credit: Chuck Quirnbach

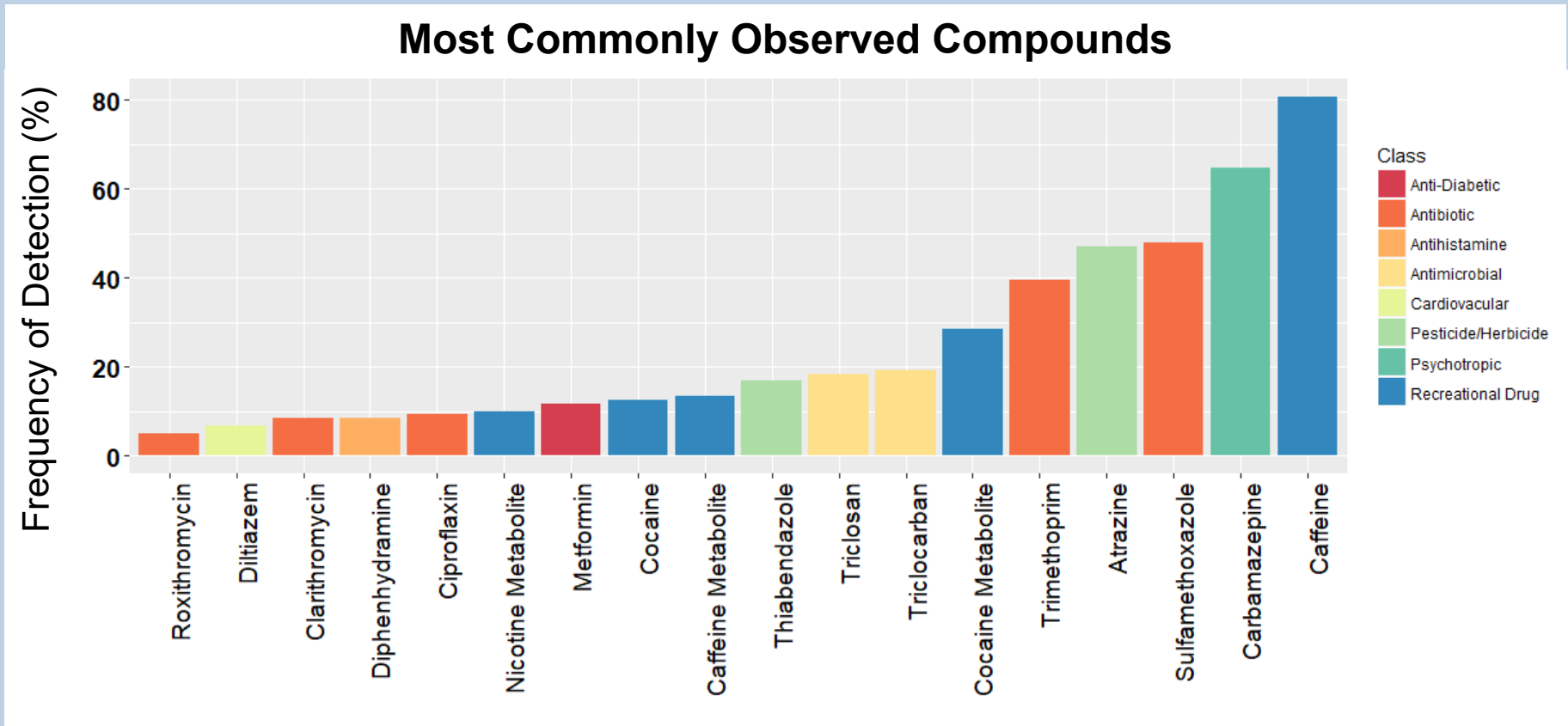
Sample Processing

- UW-Milwaukee
 - Dr. Todd Miller
- Mass Spectrometer
 - Analyzed for 63 compounds
- Volunteers help process samples

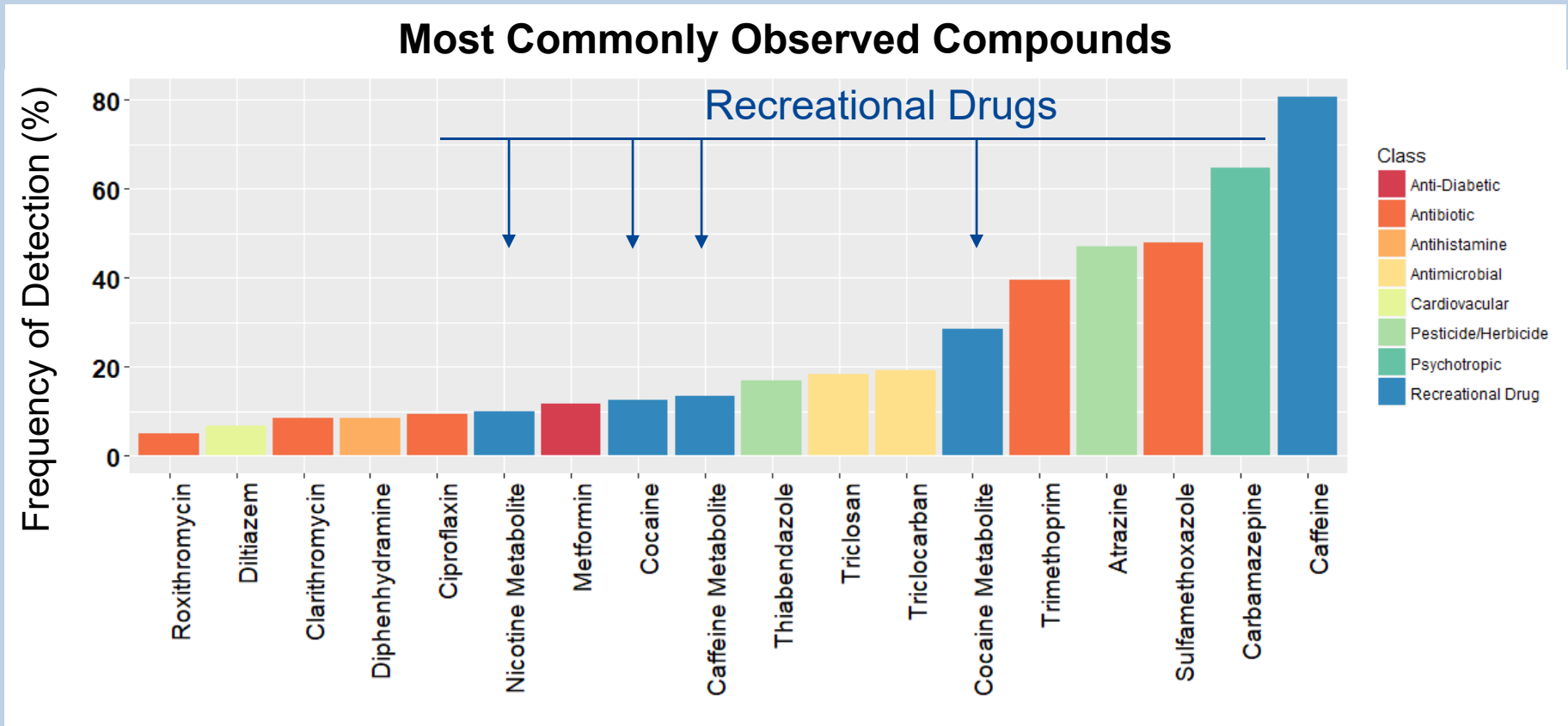


UWM | **JOSEPH J. ZILBER**
School of **Public Health**

Results

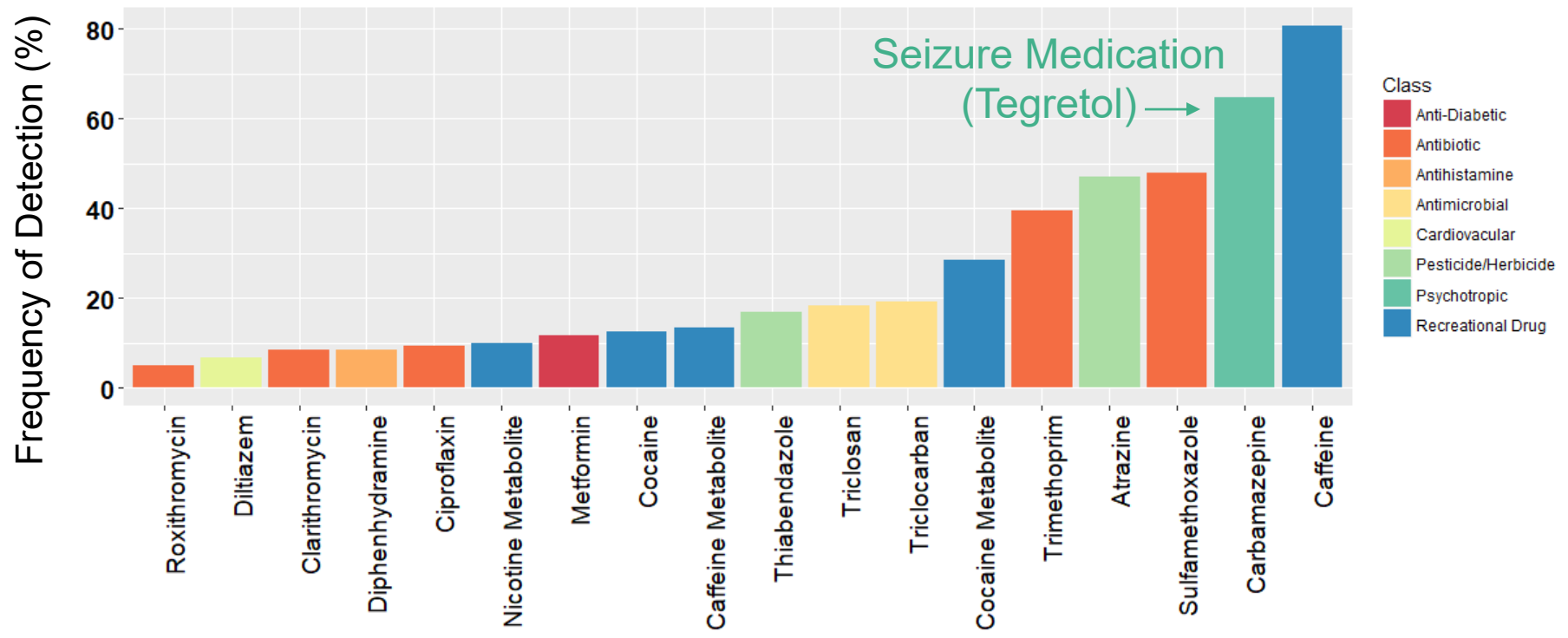


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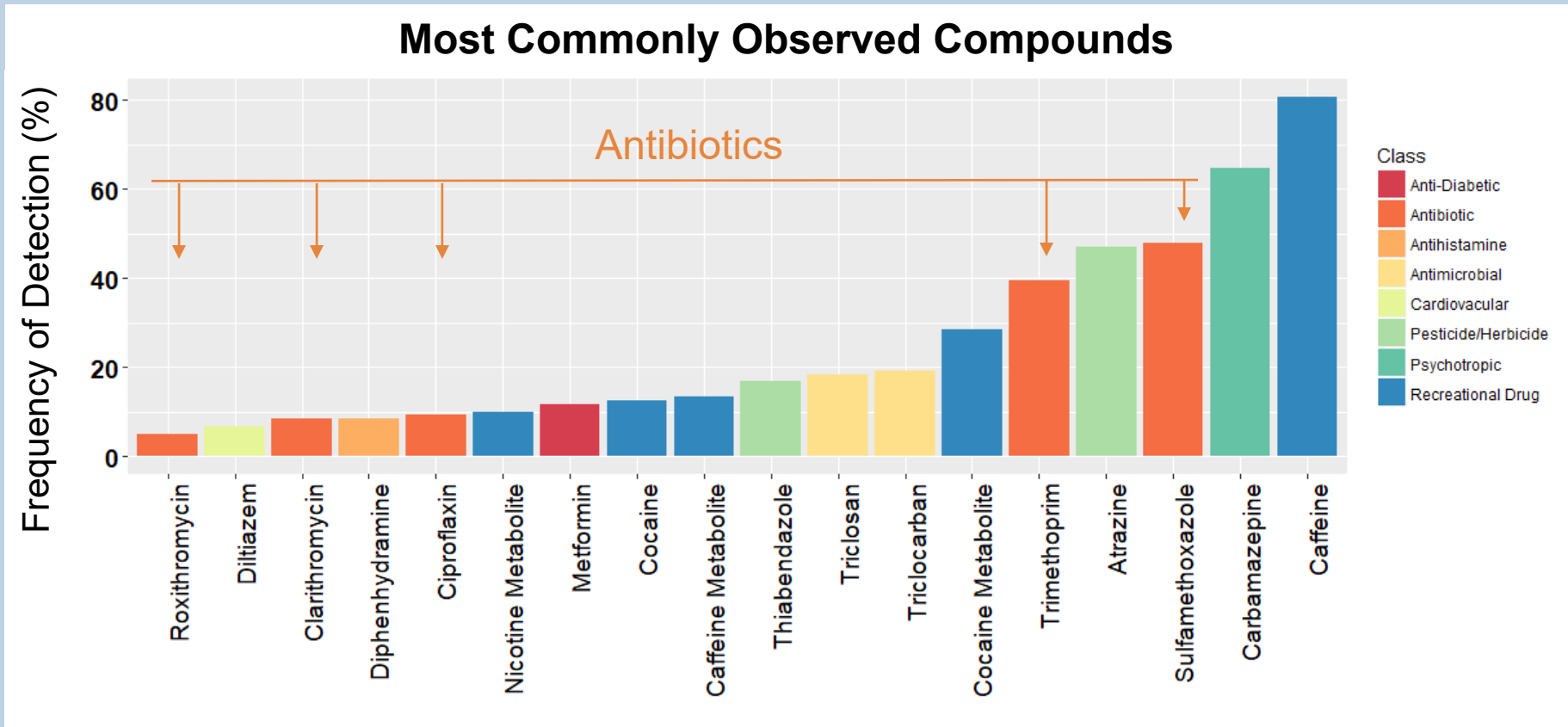


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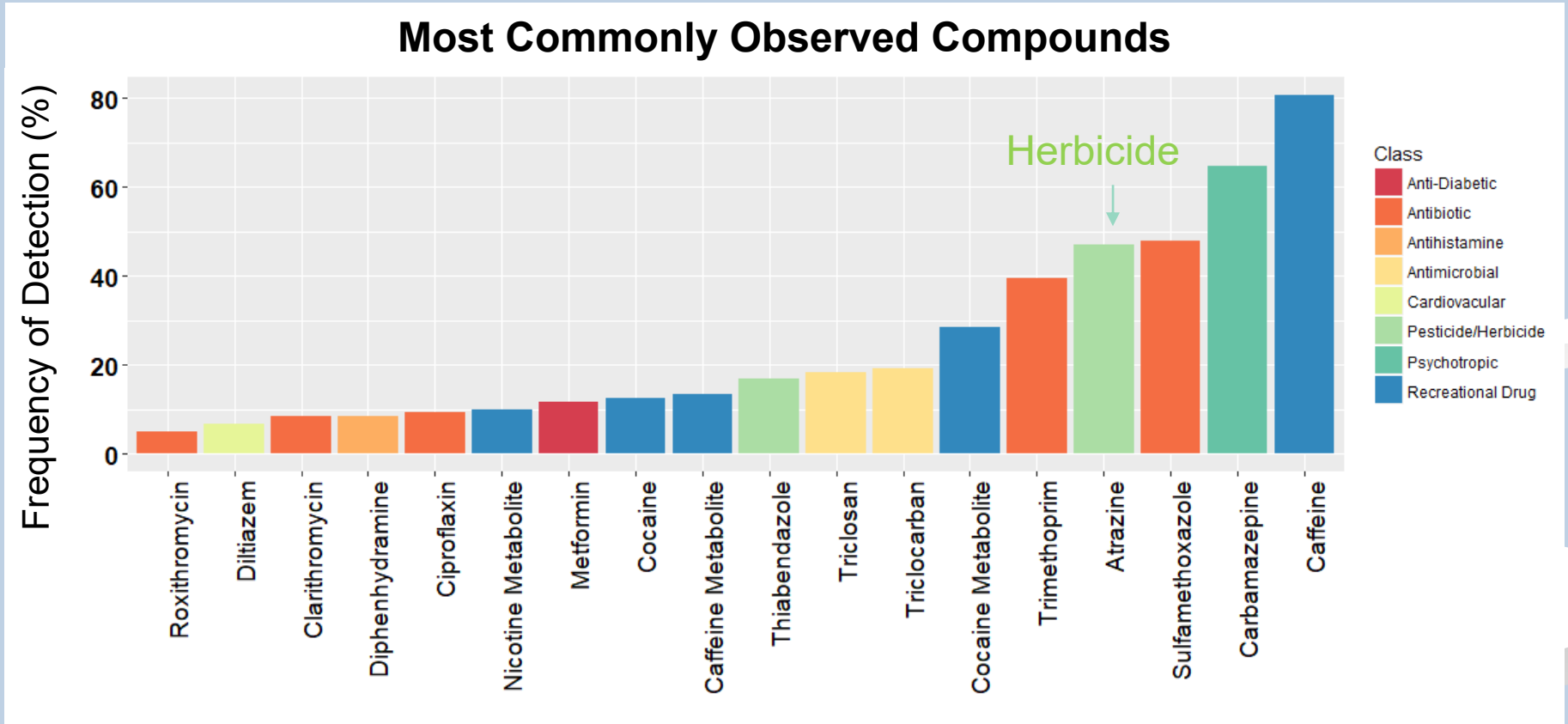
Most Commonly Observed Compounds



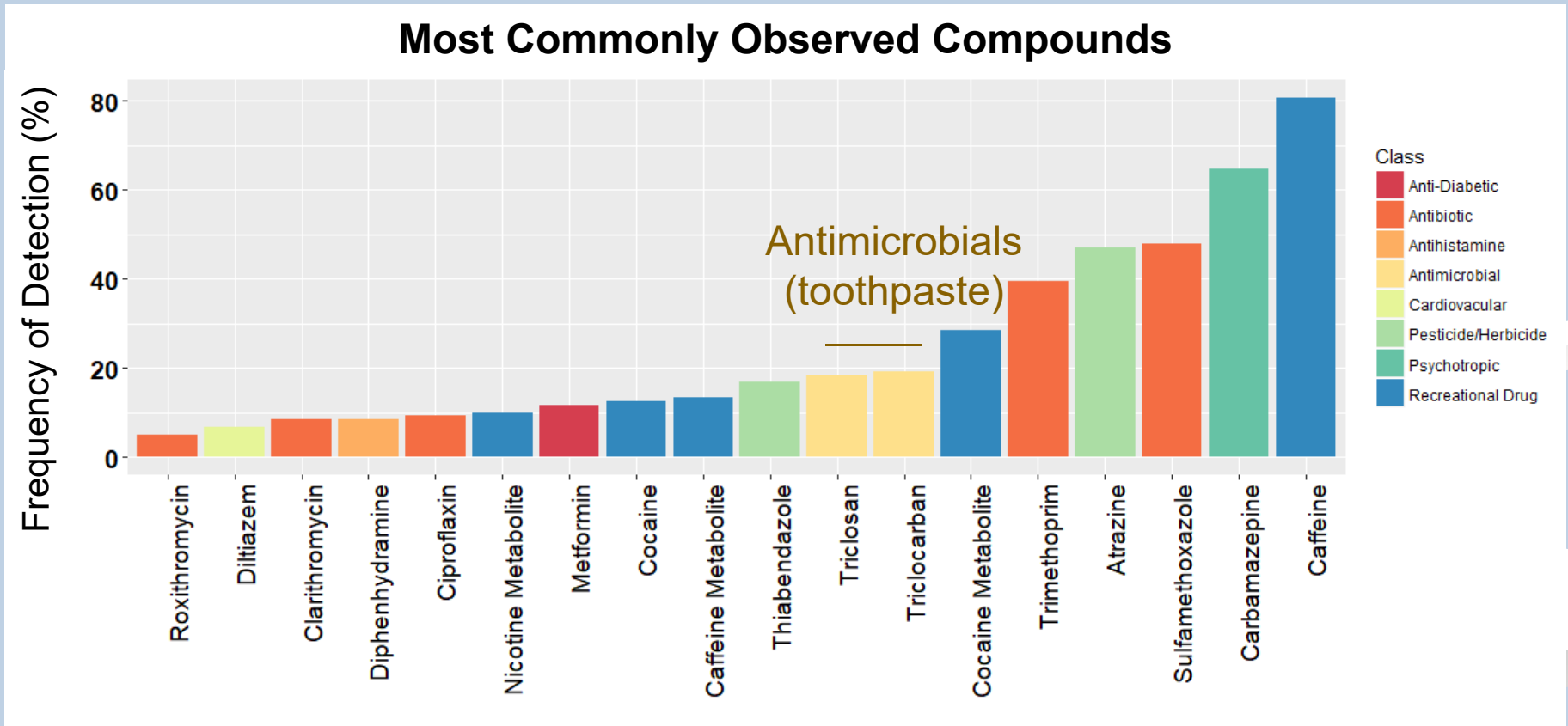
Results



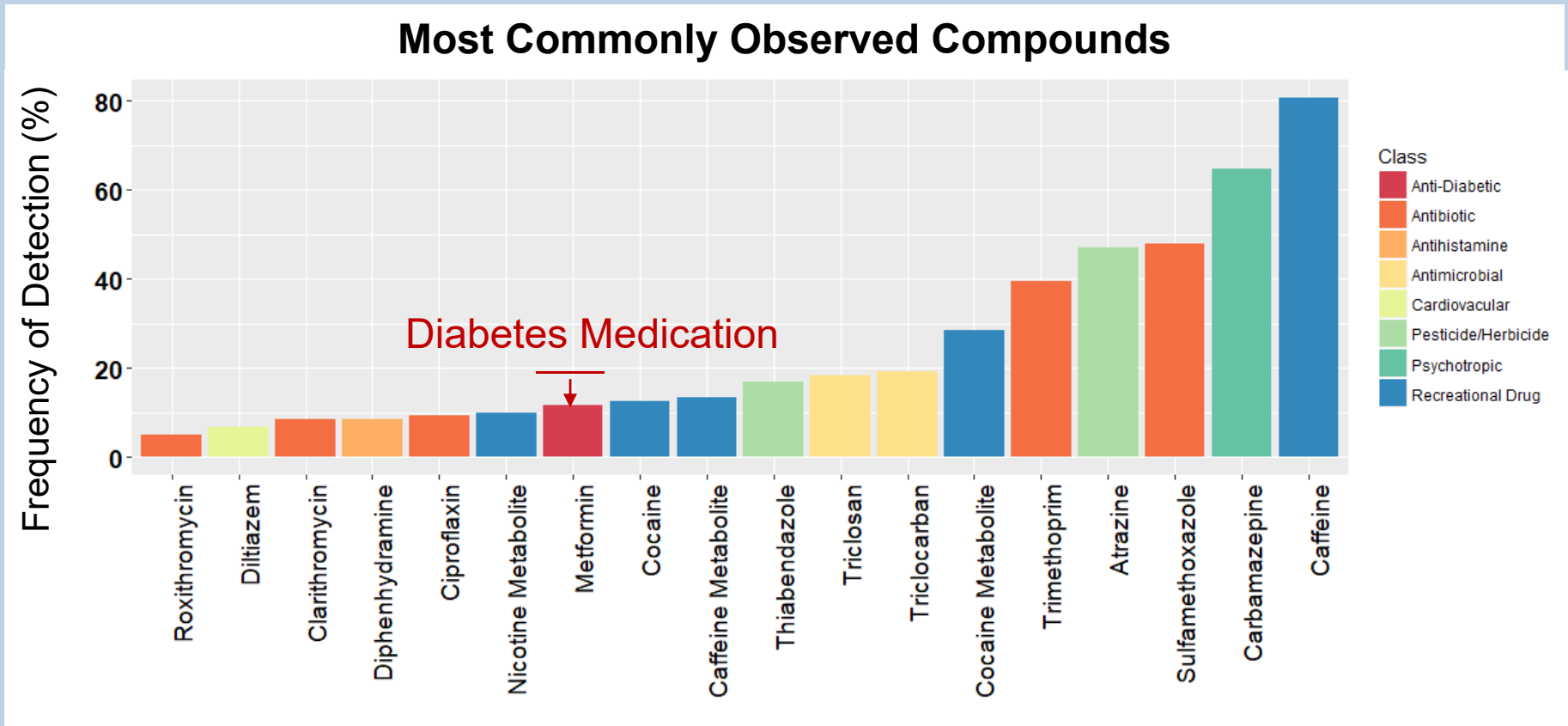
Results



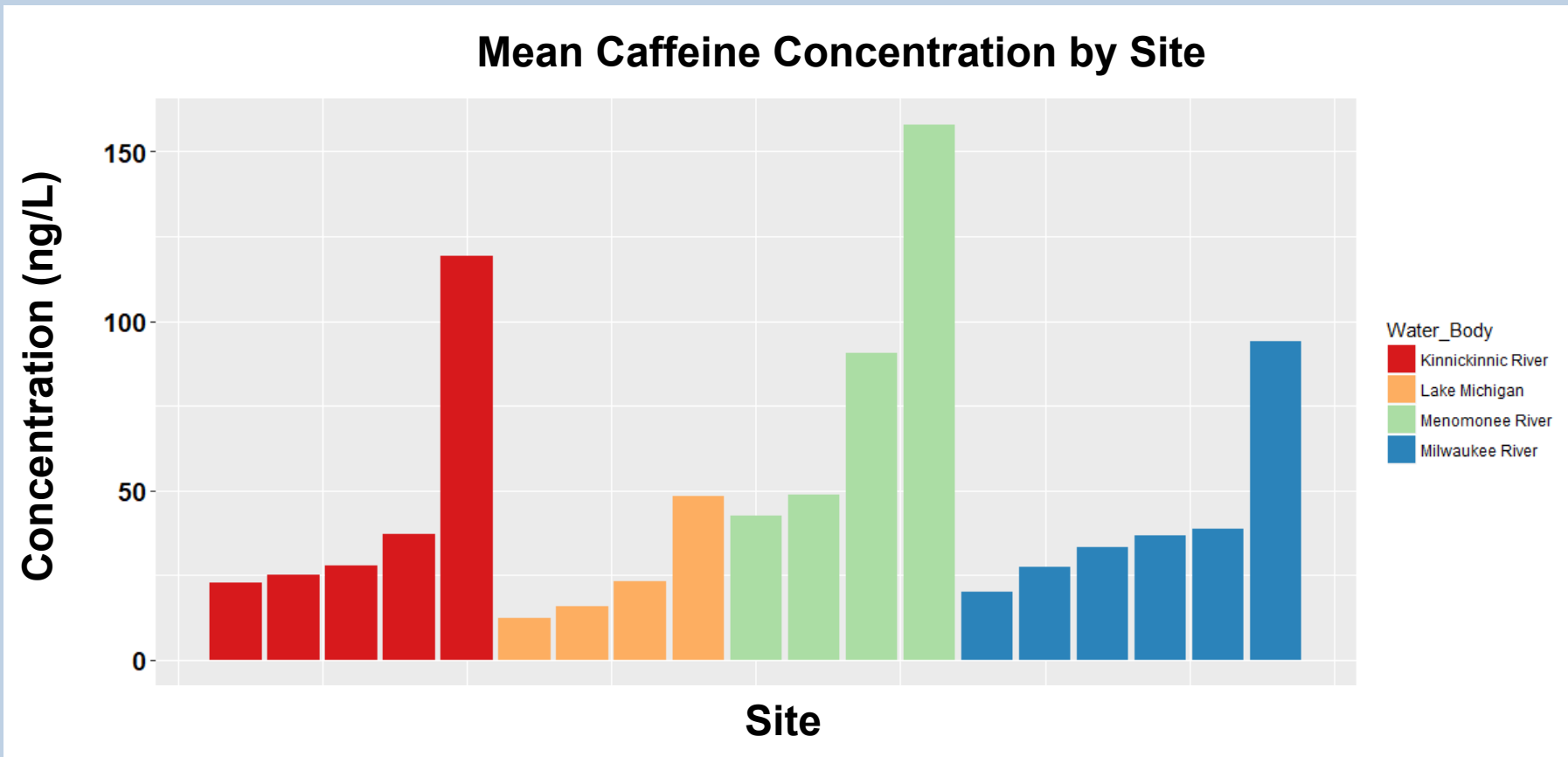
Results



Results



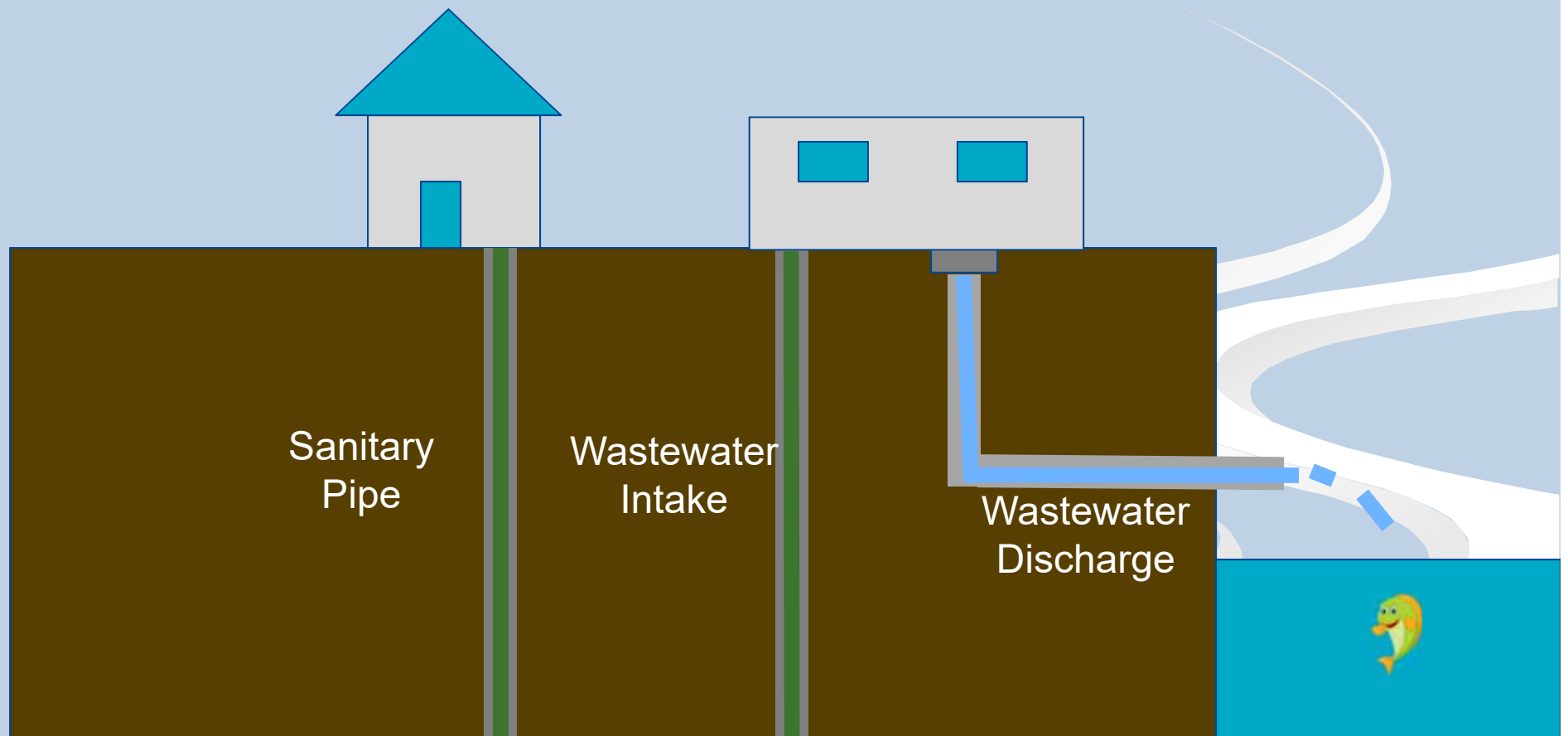
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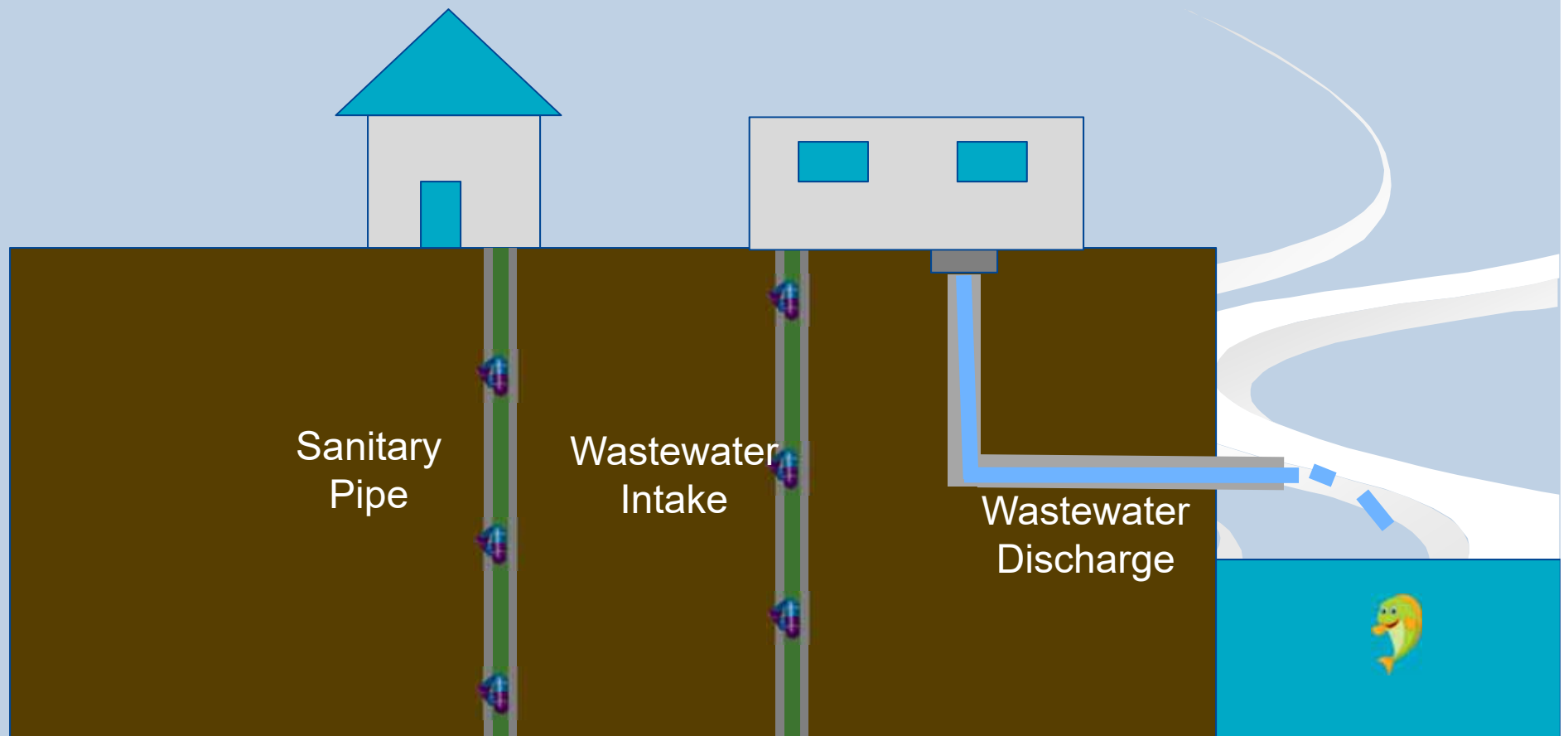
Results Summary

- Many Compounds Observed
 - Recreational Drugs
 - Antibiotics
 - Seizure Medication
 - Herbicides
- Compounds Found At All Sites

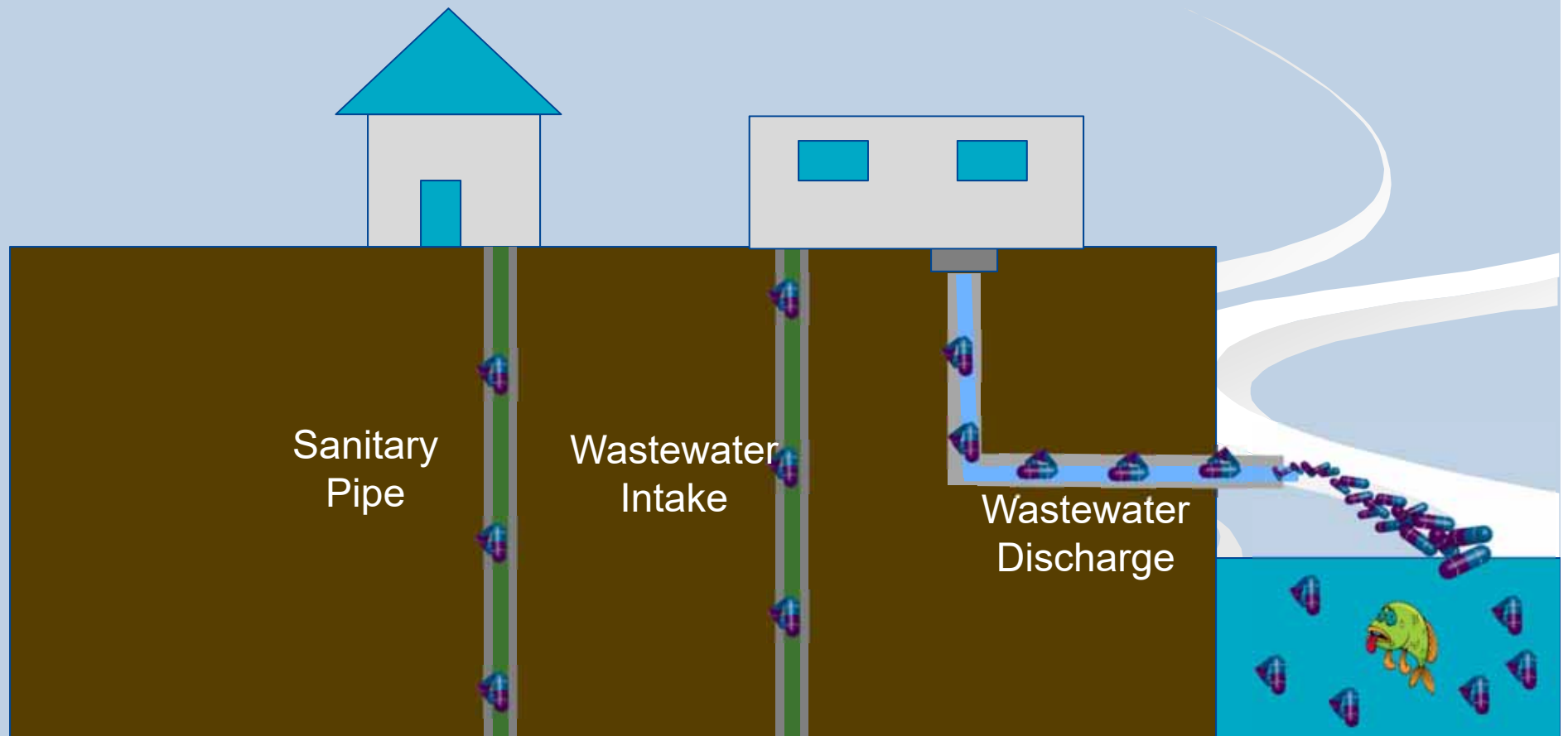
How do these compounds get there?



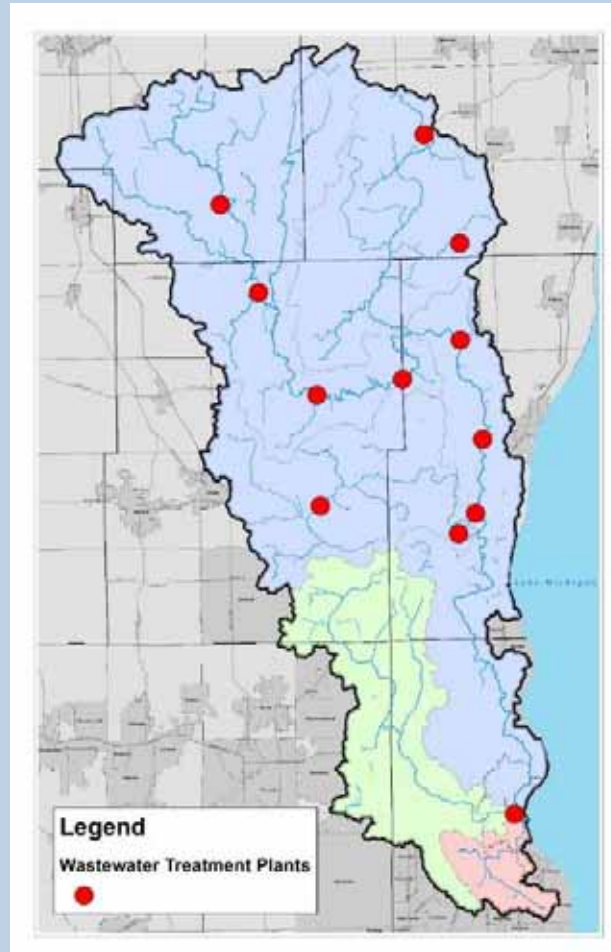
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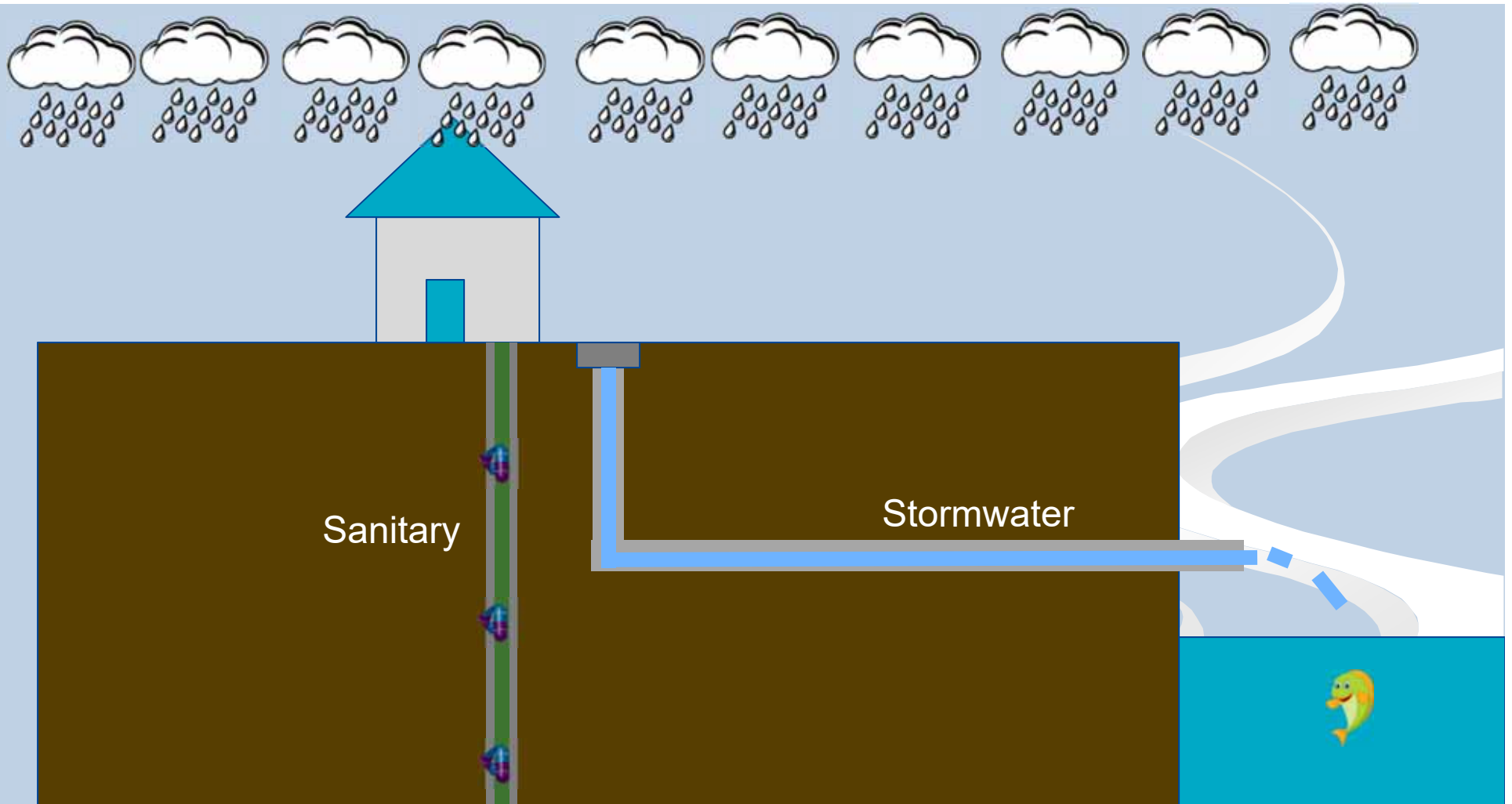
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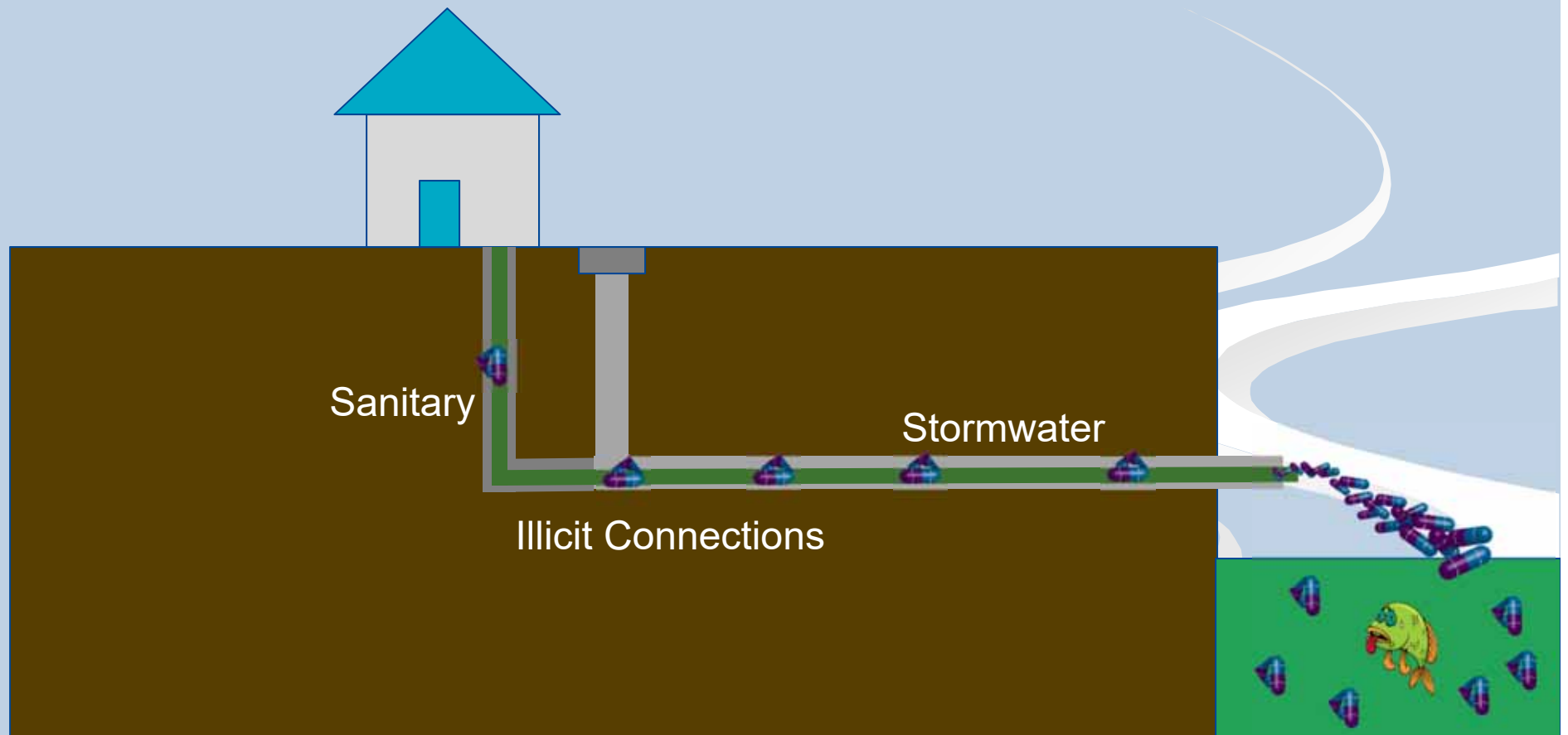
Wastewater Treatment Plants



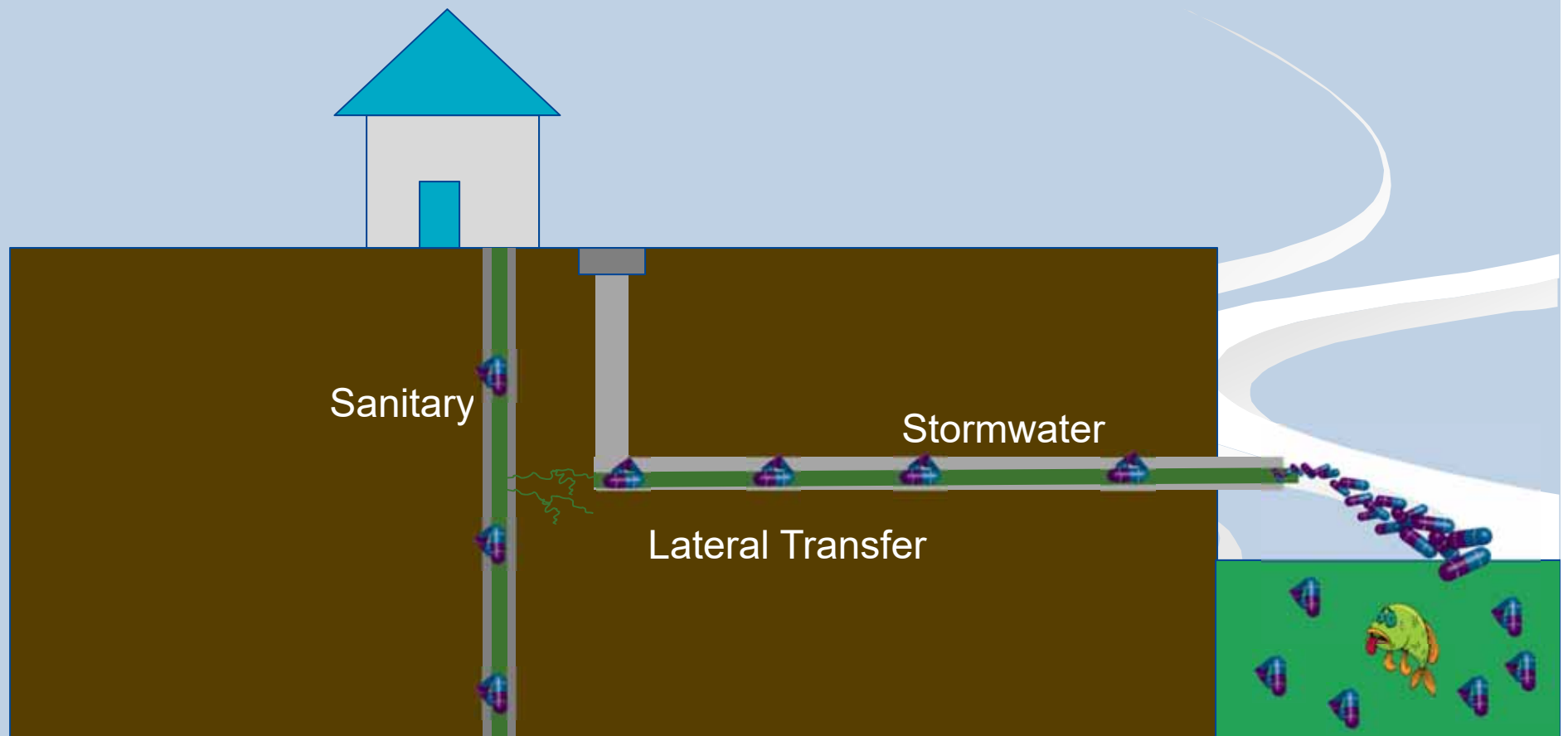
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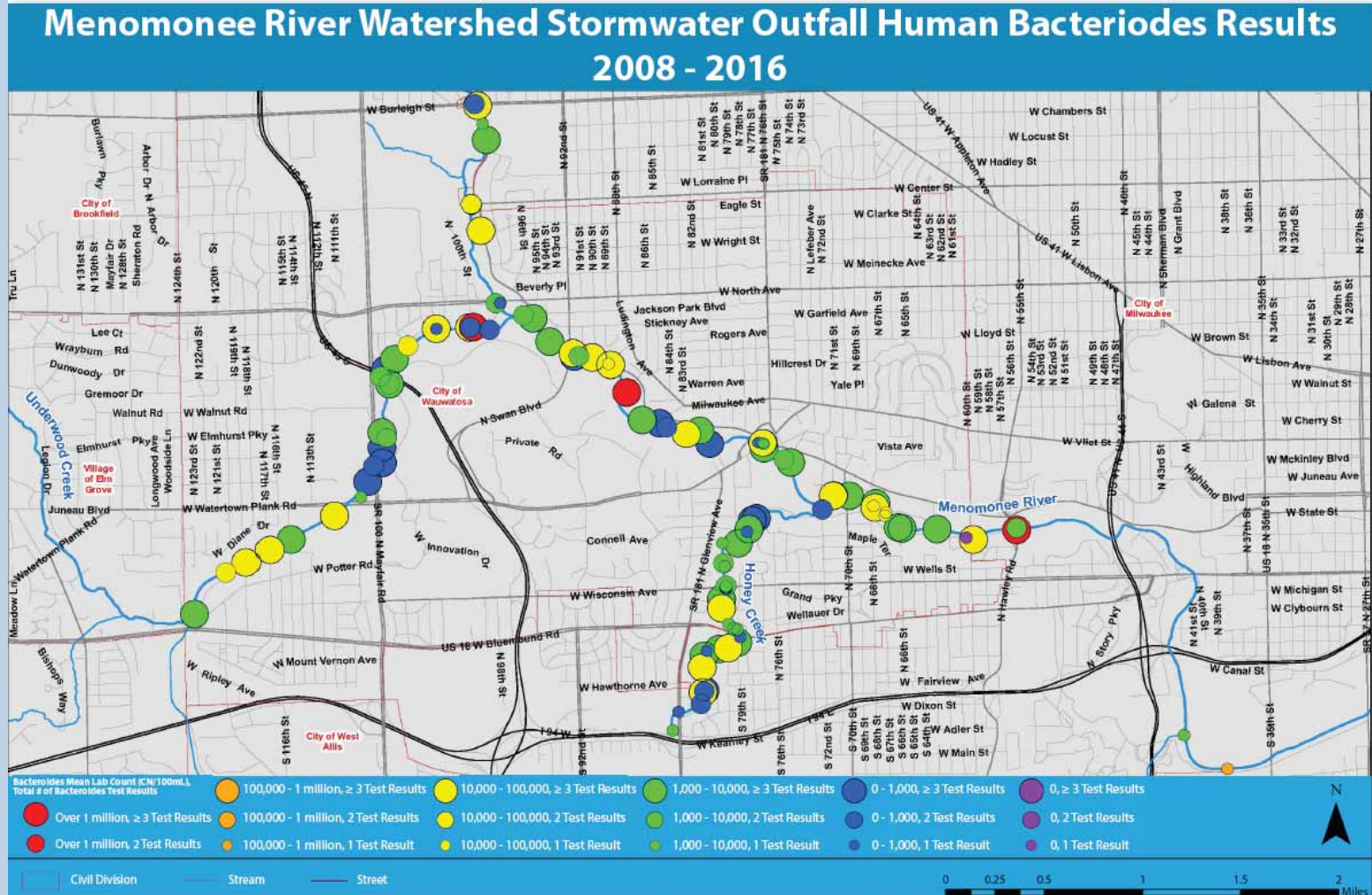
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How do these compounds get there?



Contaminated Outfalls



Impacts



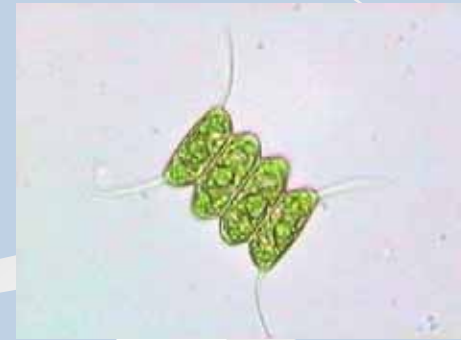
Impacts

- Antibiotic Resistance



Impacts

- Kills Algae and Bacteria



Impacts

- Effects on Aquatic Organisms



What Can We Do?

- Research



What Can We Do?

■ Research



What Can We Do?

- Education



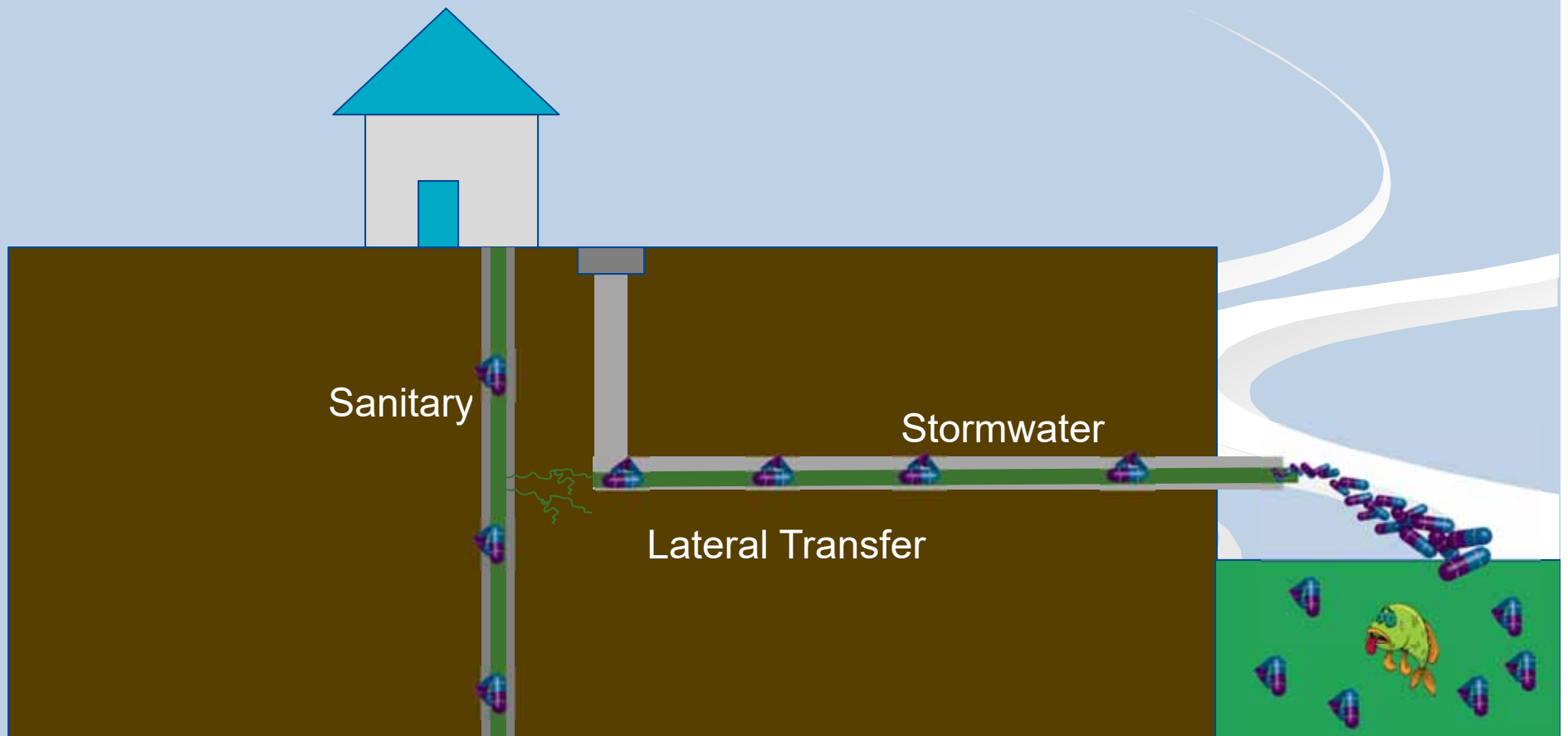
What Can We Do?

- Education



What Can We Do?

- Advocate



What Can We Do?

- Advocate



Questions?



4/26/2018



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50