



Orange County
Sanitation District
70th Anniversary

Emerging Constituents Program Task Force

Supercritical Water Oxidation Technology

Presented by: Rob Thompson, PE
OC San General Manager

August 12, 2024



Our Service Area

479

square miles

~190

million gallons per day

2.6

million population

20

cities

4

special districts

388

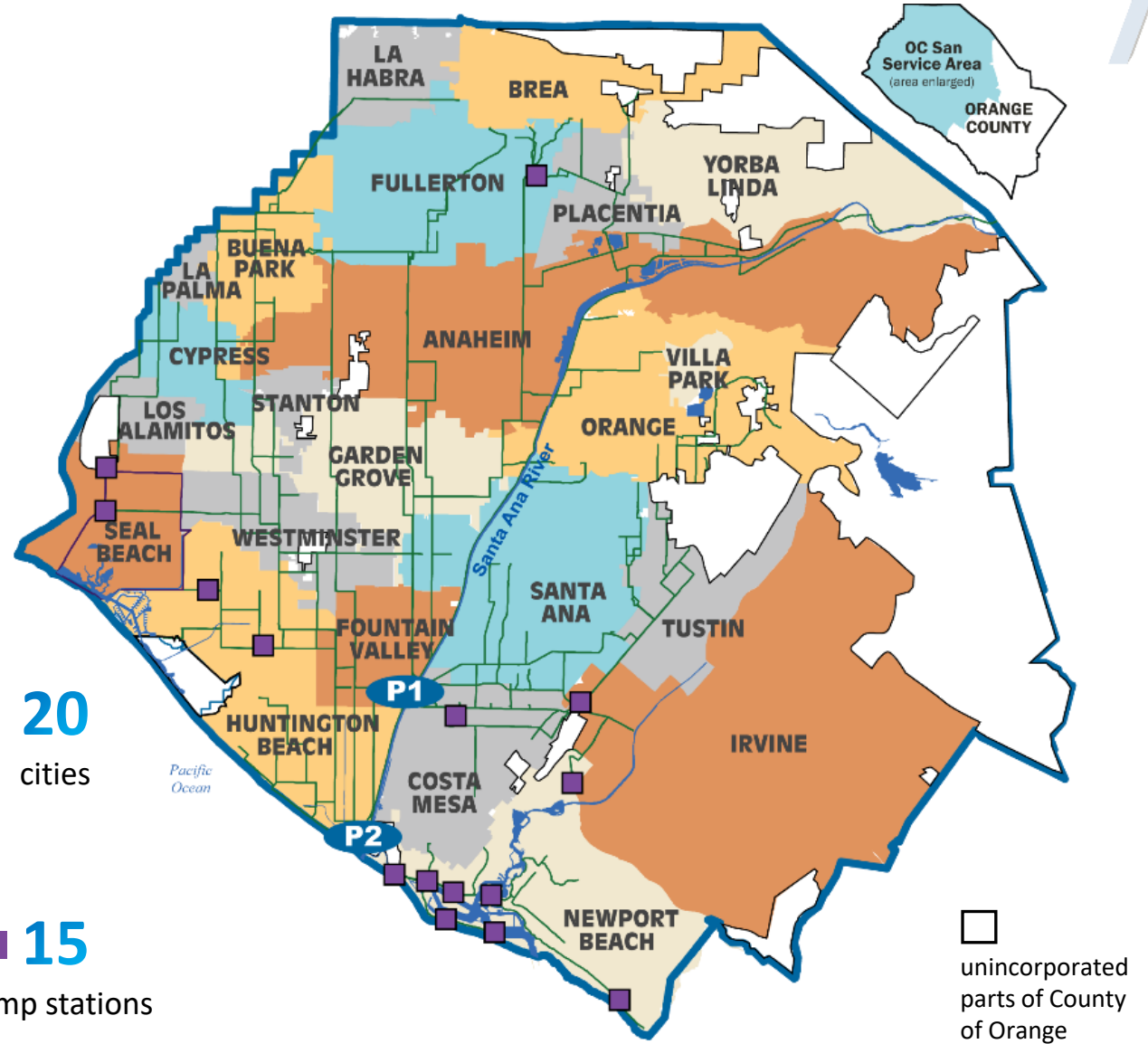
miles of sewers

2

reclamation plants

15

pump stations



□ unincorporated parts of County of Orange

Our Facilities



OC San Headquarters
Fountain Valley

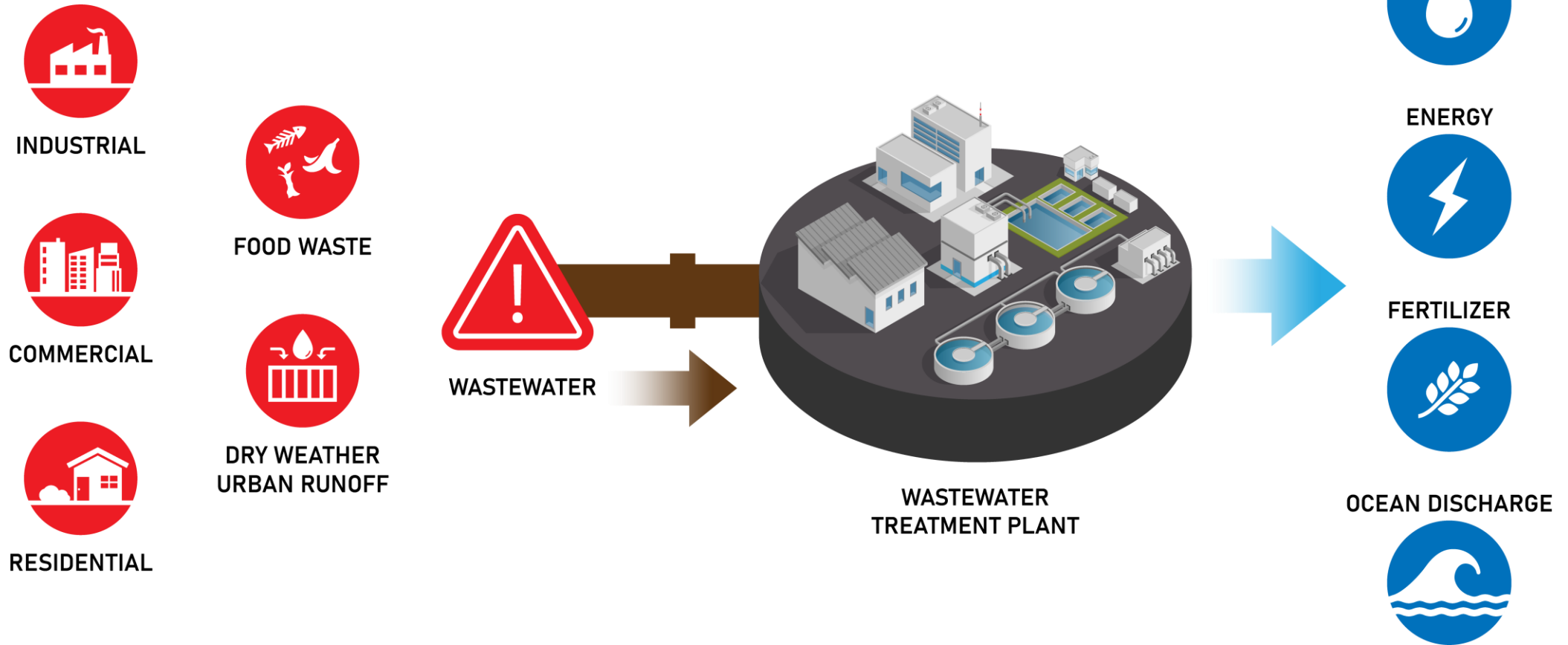


Reclamation Plant No. 1
Fountain Valley

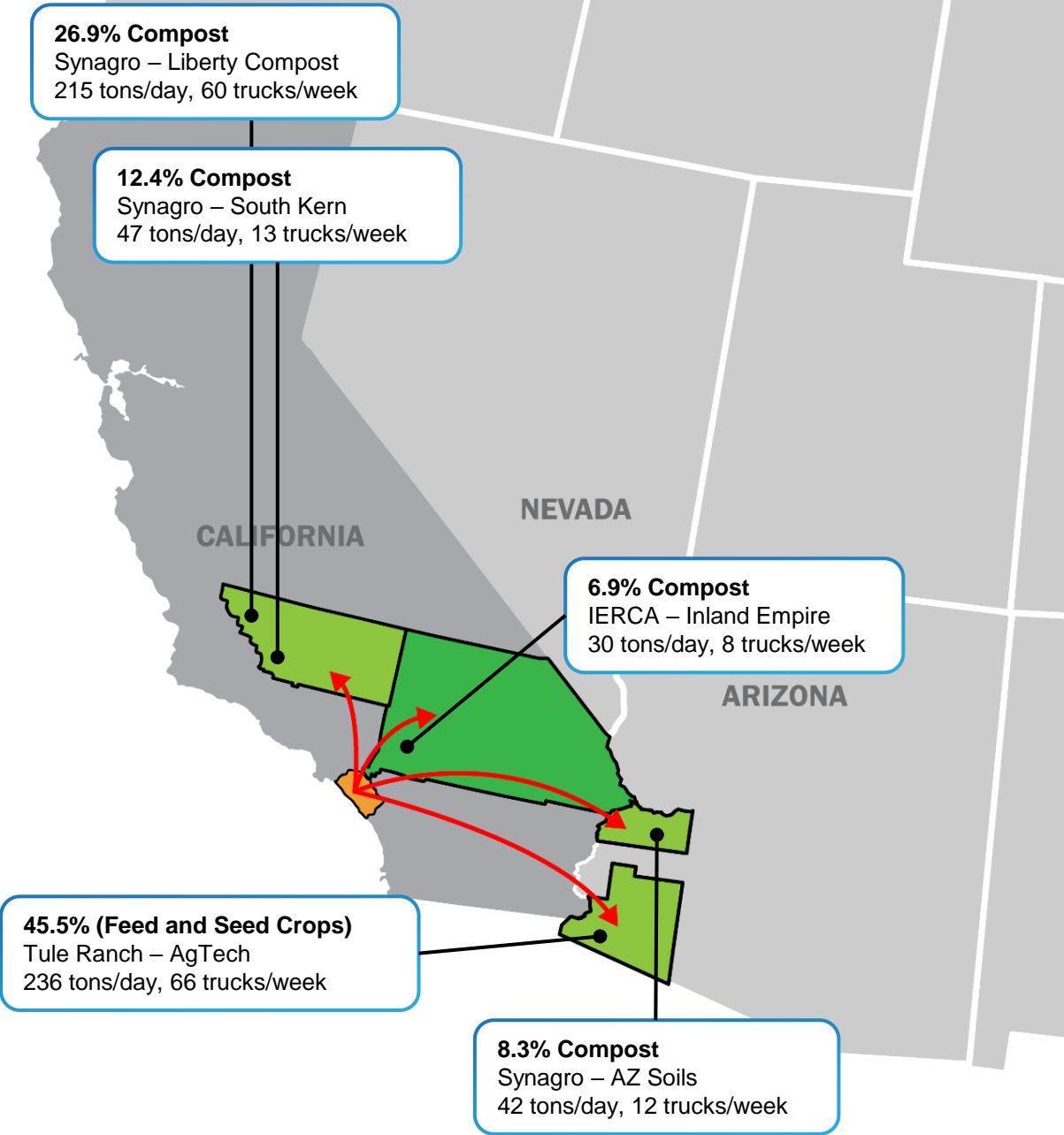
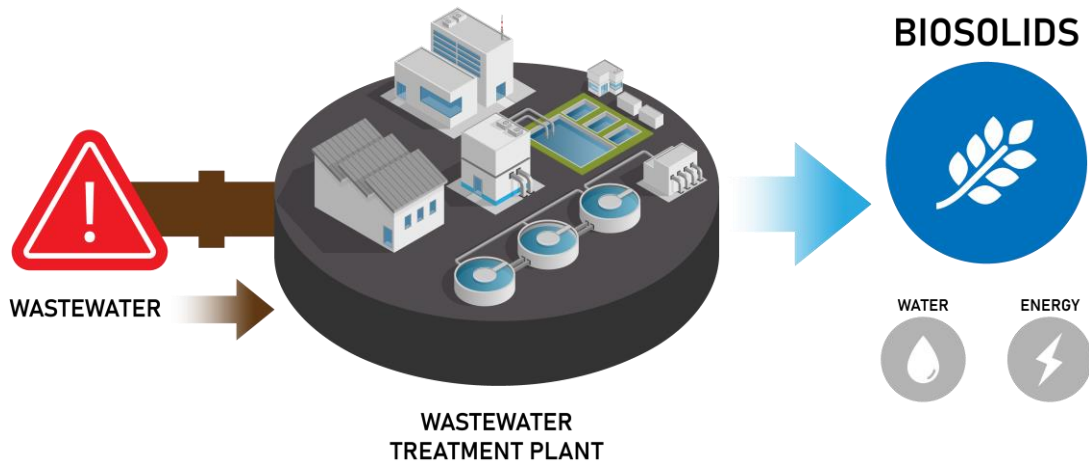


Reclamation Plant No. 2
Huntington Beach

Today's Wastewater Management



Biosolids Management



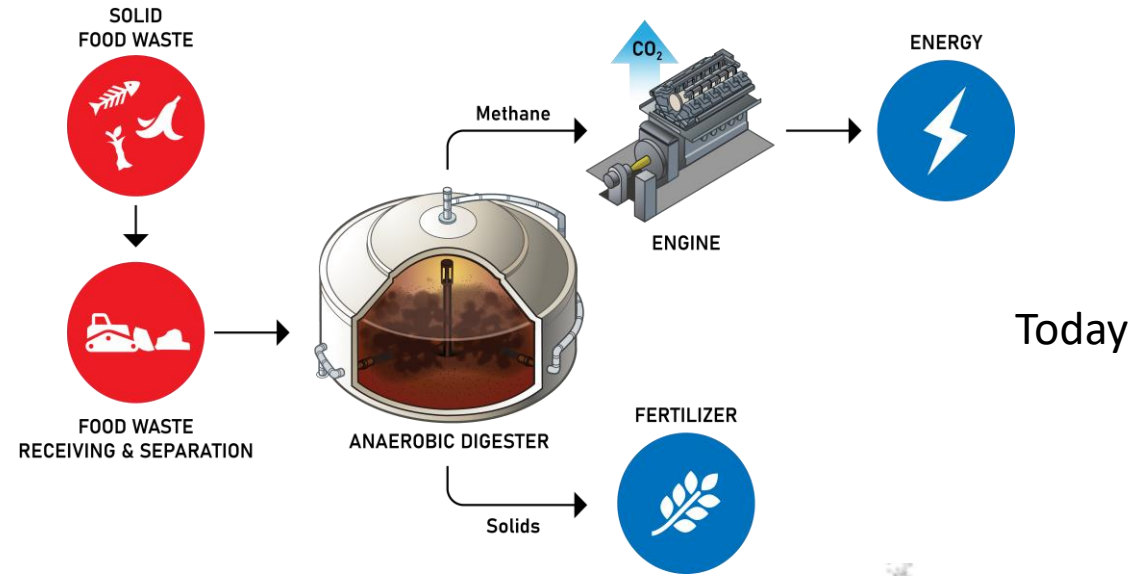
Allocations Based on: 570 Tons per day, 159 Trucks per week

Solids Treatment Challenges

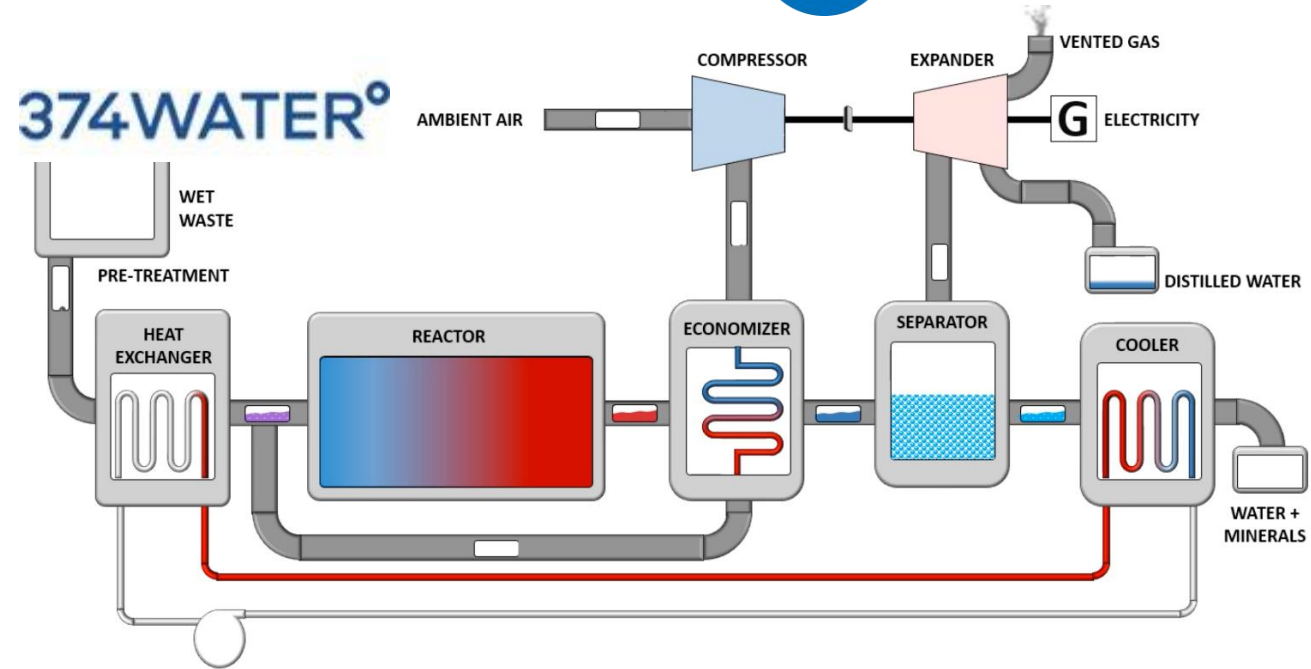
PFAS
Microplastics
Methane
Electric Haul Trucks



Tomorrow's Solids Solution



Today



CEC Destruction and 95% reduction in solids volume.

The Inner Workings



The Inner Workings



This Goes In...



This Comes Out!



The physics works! We need to improve the machine!

Tests of OC San Sludge



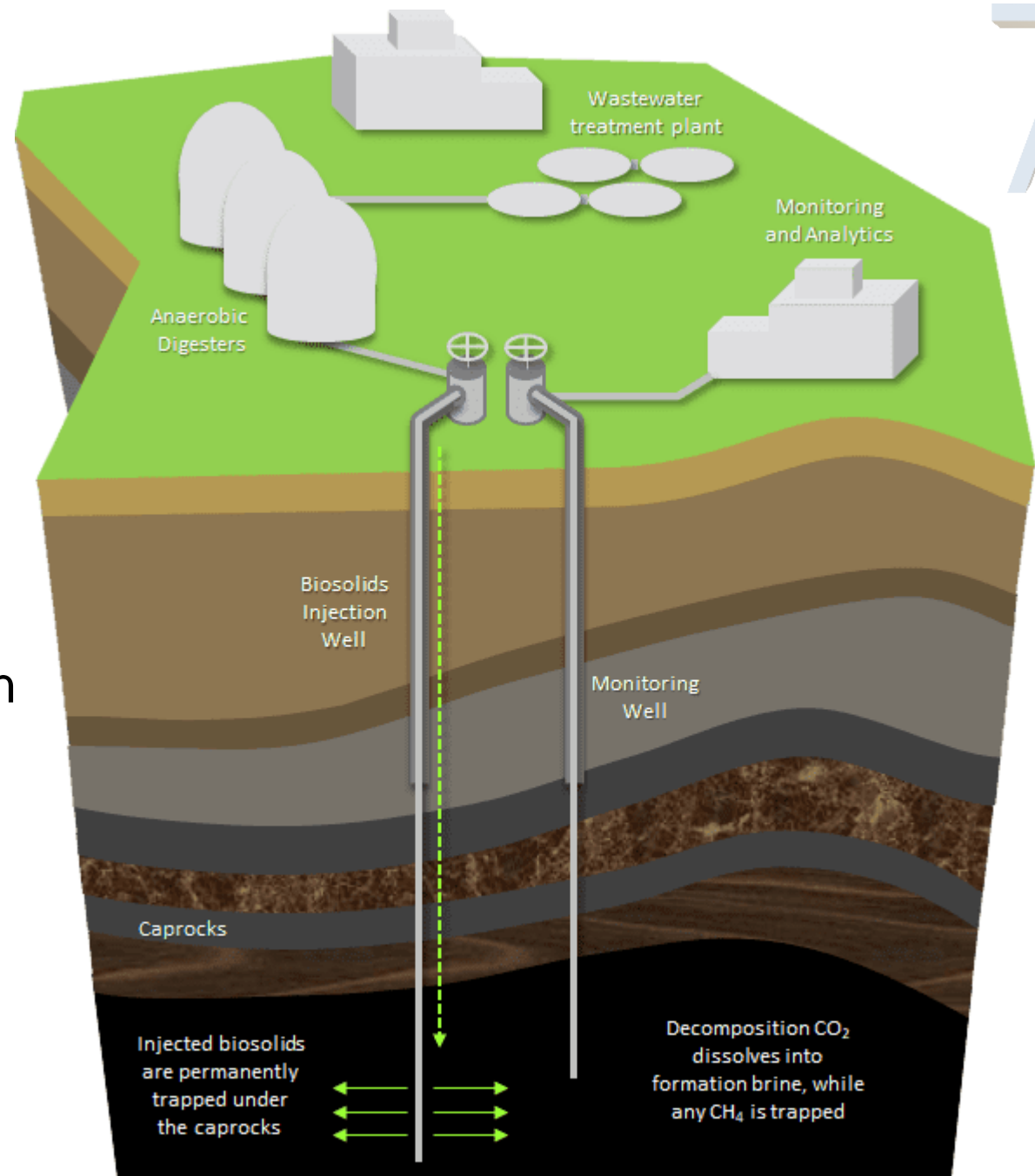
- Southern California Air Quality Management District asked for air emissions data as part of the permitting process.
- OC San Biosolids sent to the existing one-ton-per-day unit.
- Test results are promising.

Project Budget

Project Item	Current
374Water Contract (Equipment and Operation)	\$5,207,595
Public Works Site Prep and Utilities	\$1,222,960
OC San Costs (Staff, Permitting, Etc.)	\$1,043,207
Contingencies	\$467,267
Total Project Cost	\$7,941,029

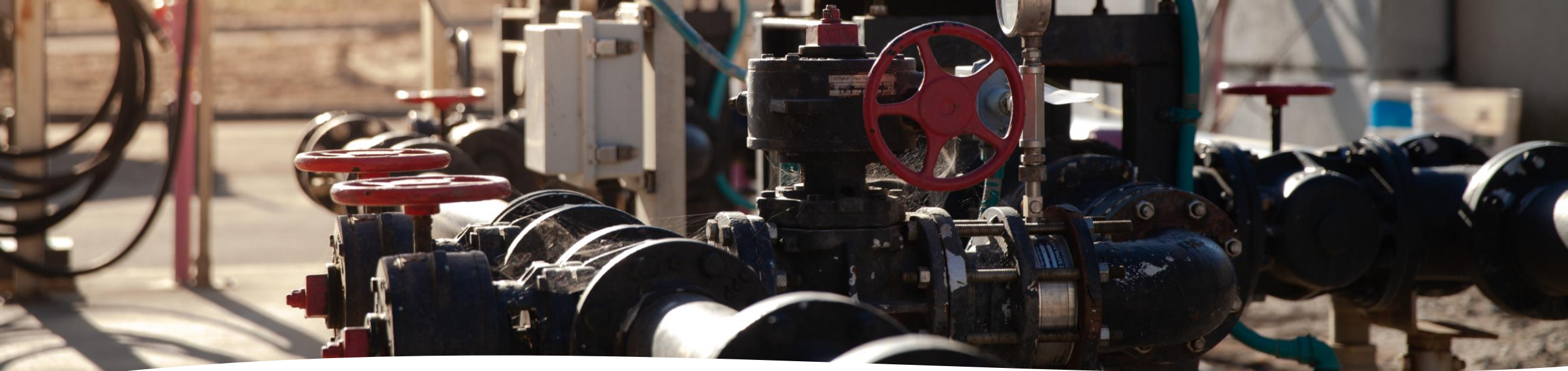
Deep-Well Injection

- Reduce/eliminate transport costs/carbon
- Reduce treatment costs
- Reduce greenhouse gas emissions
- Long-term carbon sequestration
- PFAS/microplastic/pharmaceuticals forever home





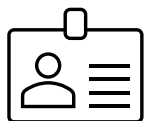
**It's not just
Wastewater
Management –
we are protecting
public health and the
environment, while
ensuring public funds
are wisely spent for
today, tomorrow and the
future.**



Tomorrow's Wastewater Management

Collect, concentrate, destroy

- “Why”: Solids treatment needs a 21st century solution for CEC destruction
- “When”: Solutions need to be identified now to create options for coming decades
- “What”: Solids treatment status quo is under siege due to PFAS, microplastics, pharmaceuticals, and carbon concerns (electric trucks, methane generation, CO2 generation...)
- “Who”: Air and Water regulators, environmental NGO’s, ratepayers, capital planners, and elected officials need to work together to solve this problem.



Rob Thompson



rthompson@ocsan.gov



(714) 593-7110

For More Information

Visit us at: OCSan.gov
Follow us: [@OCSanDistrict](https://twitter.com/OCSanDistrict)



Also on...



Rob Thompson, PE
ρθompson@ocsan.gov

