



All Rise for Safe Water: Federal and Local Opportunities to Support Manufactured Housing Communities

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joining us.
The webinar will
begin shortly.**

All Rise for Safe Water: Federal and Local Opportunities to Support Manufactured Housing Communities

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Disclaimer

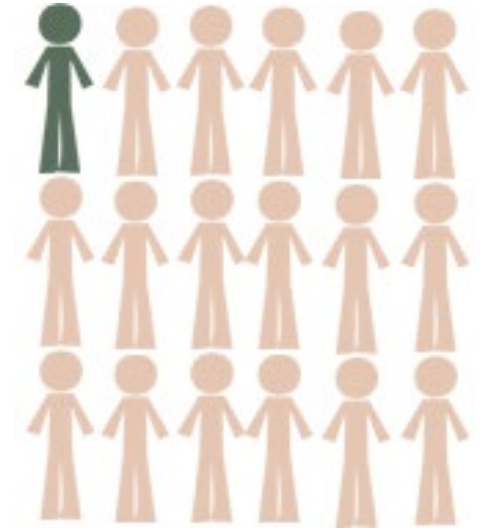
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Background on Manufactured Homes

- ~22 million Americans live in a manufactured (aka mobile) home
- Often in rural areas or commercial- and industrial-zoned areas
- More likely than residents of other housing types to be Hispanic or Latino, American Indian or Alaska Native, or of two or more races (American Housing Survey)
- Experience reduced water service reliability and increased likelihood to have contaminant levels in their drinking water that put their health at risk compared to other housing types^{1,2}



**1 in 7 new homes built
annually is a
manufactured home**



**1 in 18 Americans
lives in a
manufactured
home**

Project Objectives

To better understand the state of drinking water systems in manufactured housing communities and identify the challenges and needs of these communities to improve federal and local support.

Data and Methods

1. SDWIS data on systems that primarily serve “Mobile Home Parks”
 - Trend analysis: Mann-Kendall Test and Sen Slope Estimation^{3,4}
 - More than 30 maps developed to identify hotspots of different categories of drinking water violations
2. Case studies: examples of manufactured housing communities that overcame SDWA compliance issues

Trend Analysis (through Q2 2020)

Violations Over Time Results from Mann-Kendall Test and Sen's Slope Estimation (0.05 alpha level)

	Significant Trend?	Annual Rate of Change
All Violations	Yes	+192 violations per year
Health-Based Violations	Yes	+13 violations per year
Lead and Copper Violations	Yes	+11 violations per year
Total Coliform M&R Violations	Yes	-16 violations per year

Annual Net Change Results from Mann-Kendall Test and Sen's Slope Estimation (0.05 alpha level)

	Significant Trend?	Annual Rate of Change
All Violations	Yes	-180 violations per year
Health-Based Violations	Yes	-15 violations per year
Lead and Copper Violations	No	—
Total Coliform M&R Violations	Yes	-65 violations per year

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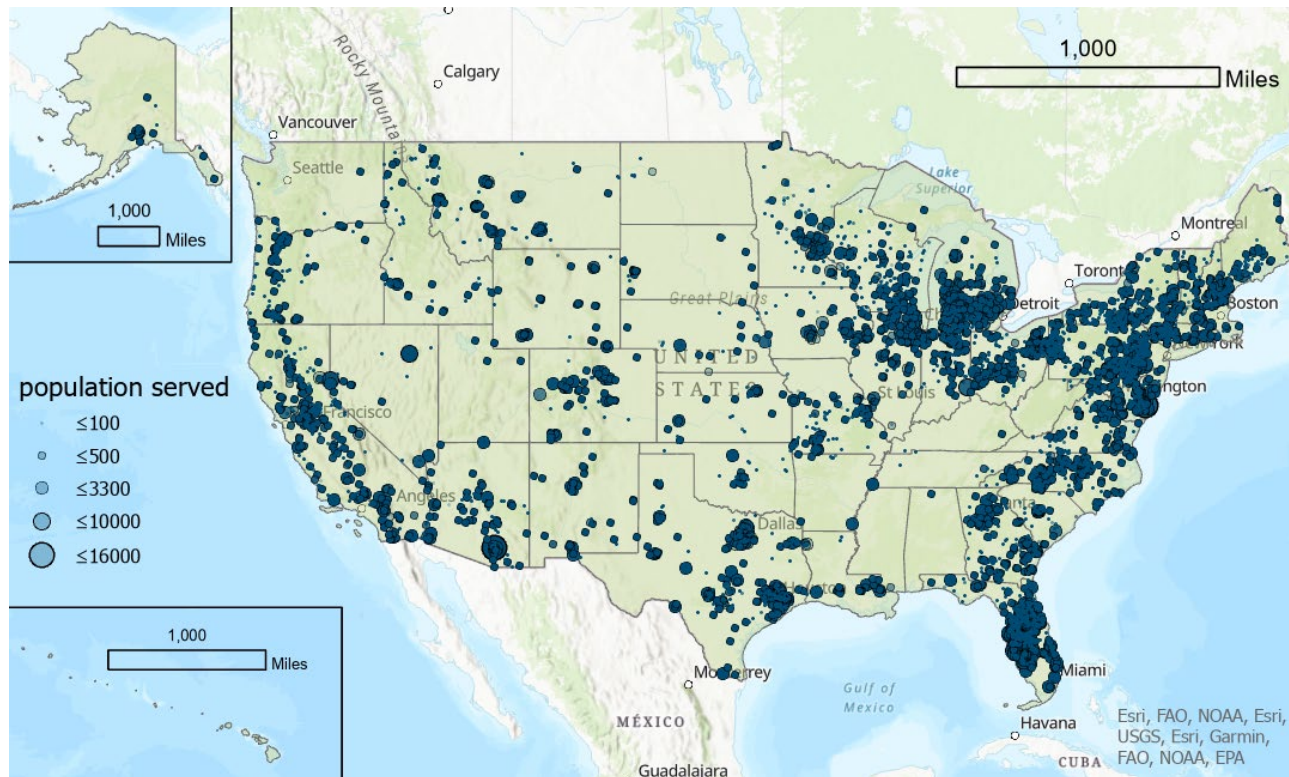
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Mapping of SDWIS Data

Drinking Water Violations for Systems Primarily Serving Manufactured Homes (1976 through Q2 2020)



Manufactured housing communities are served by small and very small drinking water systems



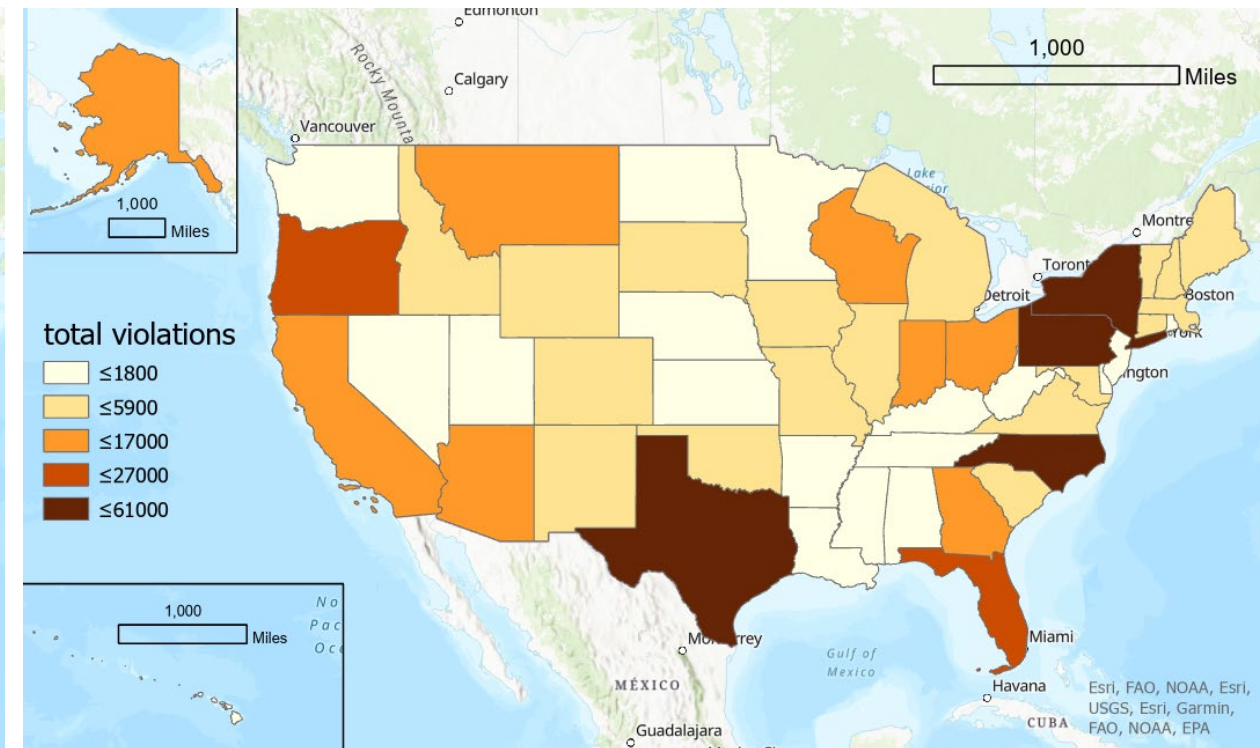
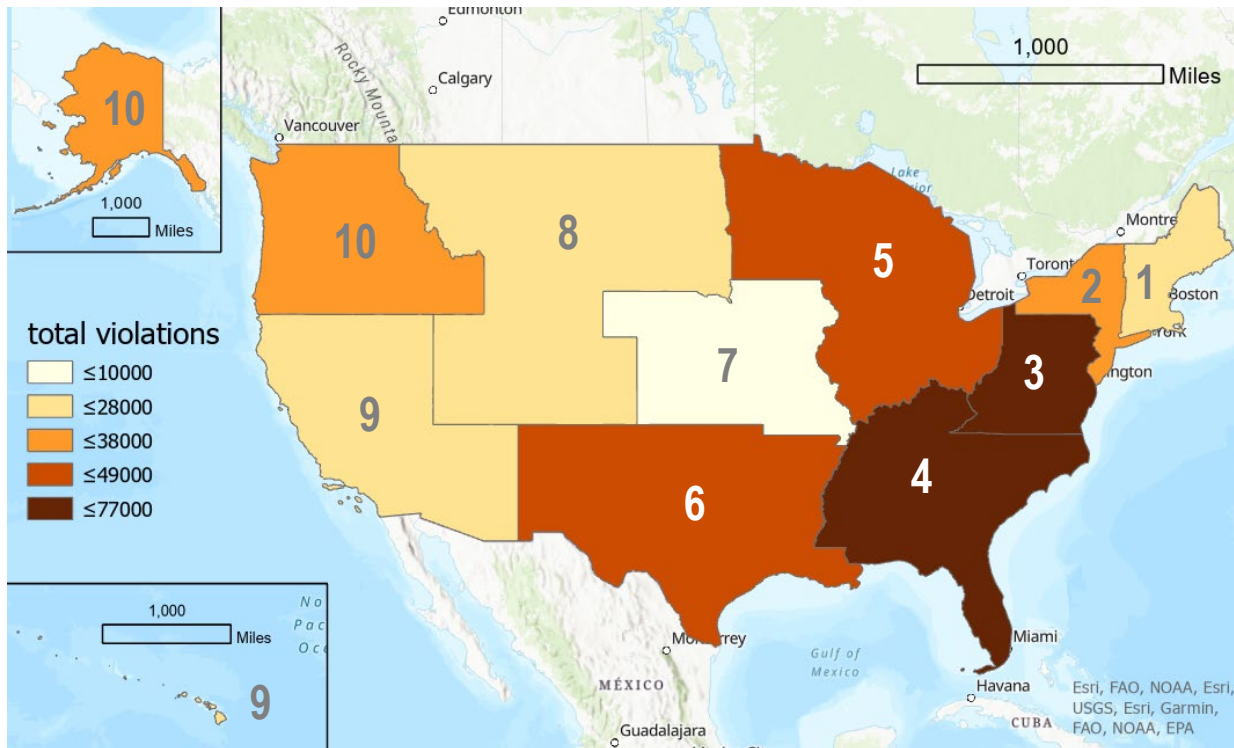
~99.8% are small systems (<3,300 people)

~18% very small systems (<50 people)

**Data was not available for: American Samoa DC, Guam, Northern Mariana Islands, Puerto Rico, Trust Territories, U.S. Virgin Islands*

EPA Regional and State Heat Maps

Total Violations (1976 through Q2 2020)



**Data was not available for: American Samoa DC, Guam, Northern Mariana Islands, Puerto Rico, Trust Territories, U.S. Virgin Islands*

Guest Speakers



Sandi Spiegel
Delaware Department of Health &
Social Services



Amanda Ames
Louisiana Department of Health



Melissa Blake
Louisiana Department of Health



*DELAWARE HEALTH
AND SOCIAL SERVICES*

Division of Public Health



Delaware

DEPARTMENT OF HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH
DRINKING WATER STATE REVOLVING FUND





Mrs. Sandi Spiegel

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Dela(where)?



Size comparison

Size (miles)	Delaware	Texas
Length (longest)	96	790
Width (narrowest)	9	--
Width (widest)	35	660

- Delaware population is ~975,000
- Texas population is ~29,000,000



Delaware's Endless Discoveries

- ❑ In Delaware, public and private water systems get their drinking water from surface water like the Brandywine, White Clay and Red Clay creeks and reservoirs, or from groundwater aquifers.
- ❑ In Delaware, the lowest point is sea level and the highest is 450 feet above sea level (at PA border).



Manufactured Home Community (MHC) Drinking Water State Revolving Fund (DWSRF) System Compliance Assistance Strategies

- Forest Park – Set Aside Activities
- Holiday Pines - Regionalization





Forest Park

Recalcitrant System Returns to compliance through a collaborative effort among EPA, DHSS's Office of Drinking Water, Office of Engineering and DWSRF Technical Assistance contract with the Delaware Rural Water Association (DRWA)

DWSRF \$: 0; 100% system funded for nitrate removal and upgrades; Technical Assistance via Set-Aside Activities

Population: 46 persons; 25 connections





Forest Park

Problem: Forest Park has been on EPA's ETT list for several years with numerous violations including nitrate exceedances.

Solution: The Park owner worked with DWSRF's Technical Assistance Provider, DRWA to return to complete compliance using the 2% and 15% Set-Asides



Forest Park

EPA Issued:

Notice of Violation on 3/22/17

Administrative Order on 7/5/17

Close out letter issued in November/December 2017





Forest Park



Timeline to compliance 2017...



May 10

EPA Region 3 contacts DE DWSRF for assistance

May 16

Conference call with:

EPA R3

DE DWSRF

Office of Drinking Water

Health Systems Protection Leadership

May 22

Meeting with:

Forest Park Owner

DRWA

Source Water Protection-DNREC

May 24

Owner contacts 2 water treatment companies for preliminary consults

DRWA Begins work on CCRs for 2013, 2014, 2015, and 2016



June 7

Water treatment contractor selected

Lead/Copper samples collected

June 13

Floor in converted shed prepped for concrete installation

June 19

CCRs reviewed by ODW

Contract signed with Water treatment contractor

Lead/Copper Sampling Plan started



July 13

Plans received by the Office of Engineering for nitrate removal equipment installation

July 31

Nitrate removal equipment installed

August

CCR Compliance achieved

Nitrate Compliance achieved

Owner completed
Sampler/Tester course
(8/29/17)



DRWA Performed 10 site visits totaling 21.5 hours

This did not include:

Phone and email correspondence with

Treatment contractor

Regulatory officials

CCR Preparation





Holiday Pines



Recalcitrant System Returns to compliance due to regionalization with a private water company, Tidewater Utilities Inc.

DWSRF \$: \$1,578,667.43

Population: >200 persons



Holiday Pines

Problem: Holiday Pines is small mobile home community, lacking managerial capacity. A recalcitrant owner and CCR, lead/copper issues plagued public health authorities and residents for many years.

Solution: Tidewater Utilities Inc., a for-profit company in southern Delaware purchased the system for a nominal fee and interconnected it with one of their existing water districts.



Holiday Pines

The interconnection bolsters managerial capacity, provides storage, a more consistent water source, and fire protection.





Holiday Pines

Although water quality was not an issue, other public health and public communication requirements were not being met. The project relieved the owner of a burdensome and antiquated water system, which he inherited.



Manufactured Home Community (MHC) Drinking Water State Revolving Fund (DWSRF) System Compliance Assistance Strategies

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Mrs. Sandi Spiegel

DWSRF Program Administrator

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LOUISIANA ENFORCEMENT: LEGAL ACTIONS



Amanda Ames, P.E.
LDH Chief Engineer

Melissa Blake
LDH Attorney

ENFORCEMENT IMPROVEMENTS

- DWRLF Consolidation program
 - Closed 4 loans over the past year totaling ~\$9M
 - Inactivated 4 systems that had administrative orders
- Began making orders executory
 - Get in front of a judge!
- Going forward:
 - Legislation including better consolidation authority, water system grading, improved receivership authority

REGIONAL OVERVIEW

- Abundant area of groundwater
 - Many small, independently minded systems
 - Additional water quality regulations have made small system compliance difficult
 - Minimal Cl₂ residual
 - Ammonia, Iron, Manganese, organics
- In this case:
 - Katrina funds:
 - Typically no match required
 - Quick construction, difficult oversight
 - Deferred maintenance
 - due to small customer base, difficult to overcome financial cost

RV PARK IN ST TAMMANY PARISH

- Population Served: 87
 - Service Connections: 29



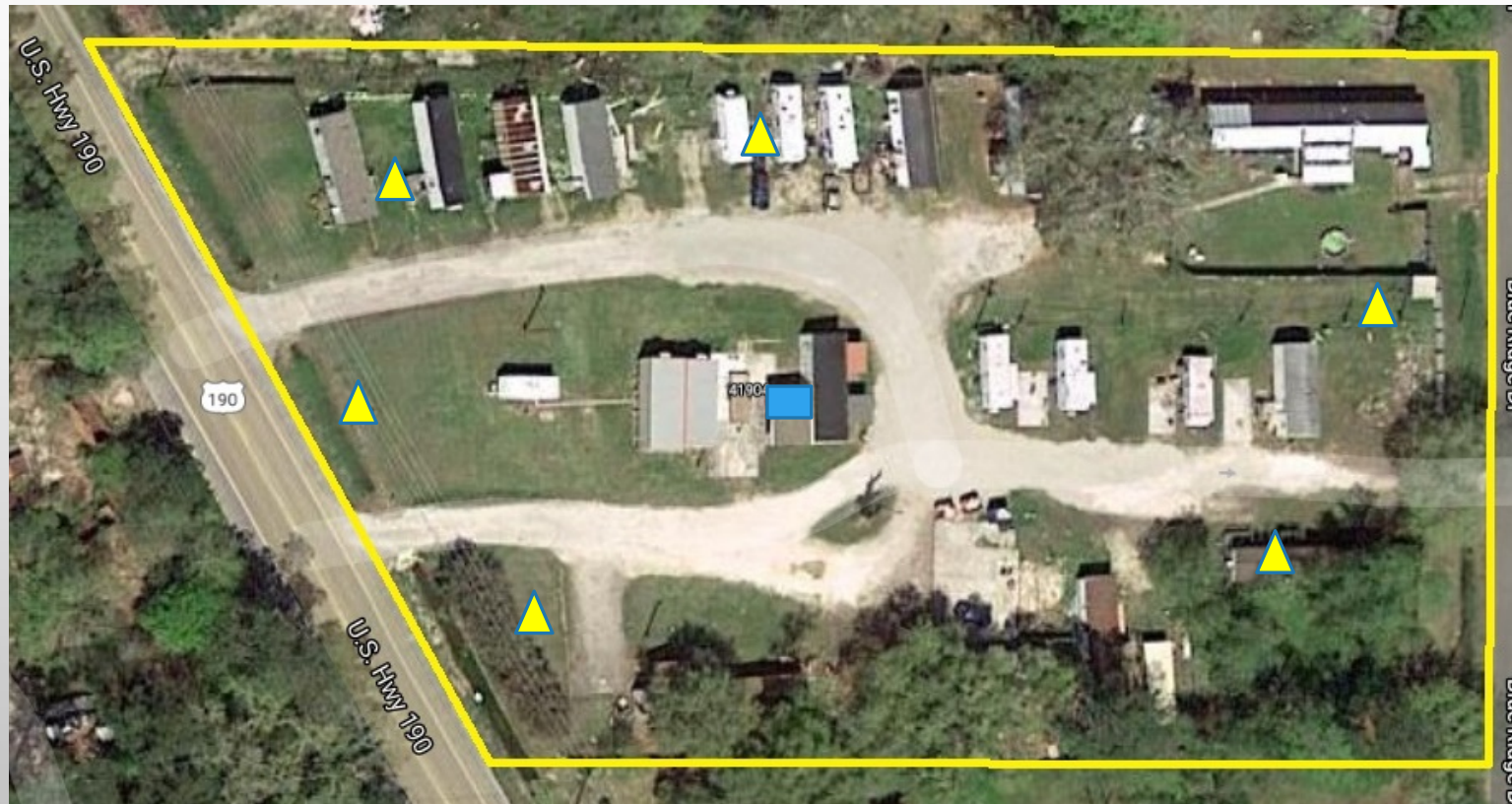
WATER VIOLATION HISTORY

- Historical violations/Intermittent compliance since 2006
- Major violations began in 2015
- District court Injunction ruling granted against co-owners
- Rule for contempt filed in 2016
 - Sparked compliance for a time (~2 years)
- 2018-2020:
 - 18 E. coli positive samples
 - 7 Level 2 Assessments performed
 - Boil order issued in 2019

RECENT WATER VIOLATIONS

- Well
 - No second source
 - No flowmeter
- Monitoring Plan
 - Incorrect sample site locations
 - Improper sampling taps (nozzle and piping)
- Chemical Feed
 - No Secondary containment
 - Maintain Cl₂ residuals
 - No Calibration of feed system
 - Incorrect dosing equipment
- Hydro-pneumatic Tank
 - No bypass
 - No control equipment
- Other
 - Chlorine records
 - CCCP
 - O&M Plan
 - Cover exposed water lines
 - Certified Operator

SITE WATER SYSTEM



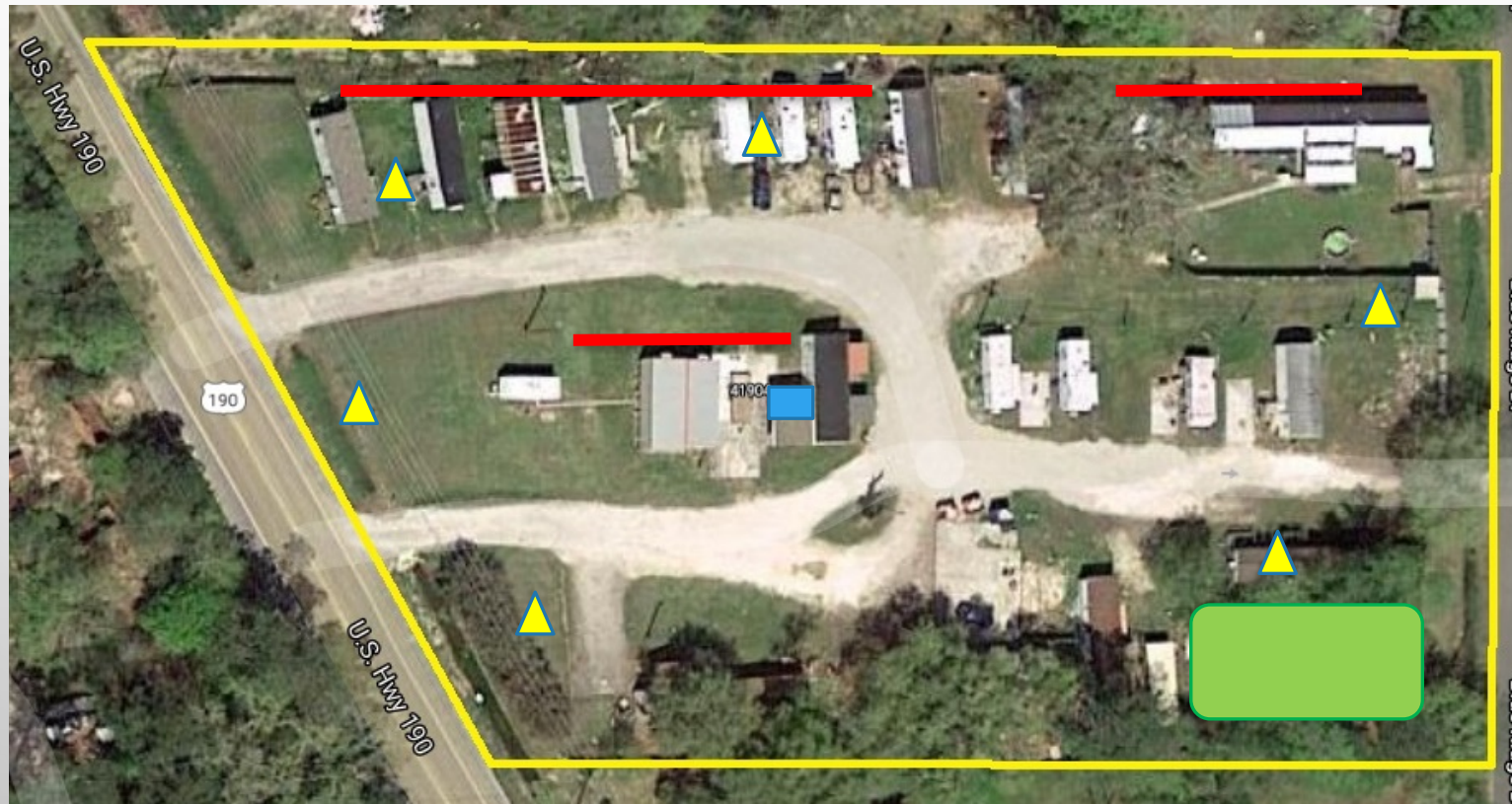
SEWER VIOLATION HISTORY

- Violations began in 2019
- Compliance Order issued by health department
- Order made Executory in district court

RECENT SEWER VIOLATIONS

- **LAC 51:XIII.305.A** – A person shall not directly or indirectly discharge, or allow to be discharged, the contents or effluent from any plumbing fixtures, vault, privy, portable toilet, or septic tank, into any road, street, gutter, ditch, water course, body of water, or onto the surface of the ground.
- **LAC 51.XIII.505.A** – All component facilities of a community sewerage system shall, at all times, be maintained in the same configuration as permitted, in working order and operated efficiently to minimize upsets, discharges of excessive pollutants, bypassing of discharges from the system, and health hazards and nuisances
- **Sewer Collection**
 - Lines Need repair
 - Lines need to be buried
 - Sewer caps/ system must be sealed
 - SSO need to be cleaned and disinfected
- **Treatment Plant**
 - Needs current LDEQ discharge permit
 - Remove Vegetation
 - Aeration equipment in plant needed and sludge removed
 - Chlorination required
 - Security fence required
 - Need certified operator

SITE SEWER SYSTEM



SEWER SYSTEM PHOTOS



Exposed/Broken mains

COURT CONSOLIDATION

- 2020 – Consolidation of sewer and water cases – one Judge
- Filed rule for contempt on both

JUDICIAL PROCEEDING AND CONTEMPT

- Evidence – photos, historical violations
- Engineering team – expert witnesses
- Guilty verdict – contempt on both water and sewer violations
- Penalty
 - 30 days in prison for co-owners (suspended)
 - \$1000 fine

CURRENT VIOLATION STATUS

WATER

- **Well**
 - **No second source**
 - **No flowmeter**
- **Monitoring Plan**
 - **Incorrect sample site locations**
 - **Improper sampling taps (nozzle and piping)**
- **Chemical Feed**
 - **No Secondary containment**
 - **Maintain Cl₂ residuals**
 - **No Calibration of feed system**
 - **Incorrect dosing equipment**
- **Hydro-pneumatic Tank**
 - **No bypass**
 - **No control equipment**
- **Other**
 - **Chlorine records**
 - **CCCP**
 - **O&M Plan**
 - **Cover exposed water lines**
 - **Certified Operator**

SEWER

- **Sewer Collection**
 - **Lines need repair**
 - **Lines need to be buried**
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 - **SSOs need to be cleaned and disinfected**
 - **No flowmeter**
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 - **Needs current LDEQ discharge permit**
 - **Remove vegetation**
 - **Aeration equipment in plant and sludge removed**
 - **Chlorination required**
 - **Security fence required**
 - **Need certified operator**

CURRENT STATUS PHOTOS

WATER

Before



After



SEWER

Before



After



COMPLIANCE

- All violations remediated
- Fines paid
- Sewer and water woes eliminated for citizens

CONTACT INFORMATION

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QUESTIONS AND DISCUSSION

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