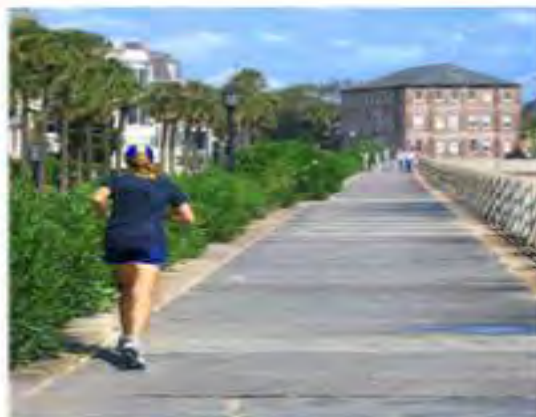




# Environmental Surveillance and Oversight Program

Aiken Environmental Affairs Office



# MISSION



To promote and protect the health of the public  
and the environment.

# ESOP Overview

- DOE – Funded Grant (Remediation and Environmental Monitoring Grant)
- Monitor the Savannah River Site
- Non-regulatory environmental monitoring
  - Allows DHEC to review SRS sampling program
  - DHEC samples provide a second set of data available to the public
- Look for radiological and non-radiological constituents in air, groundwater, drinking water, surface water, sediment, soil, milk, vegetation, fish, and game.

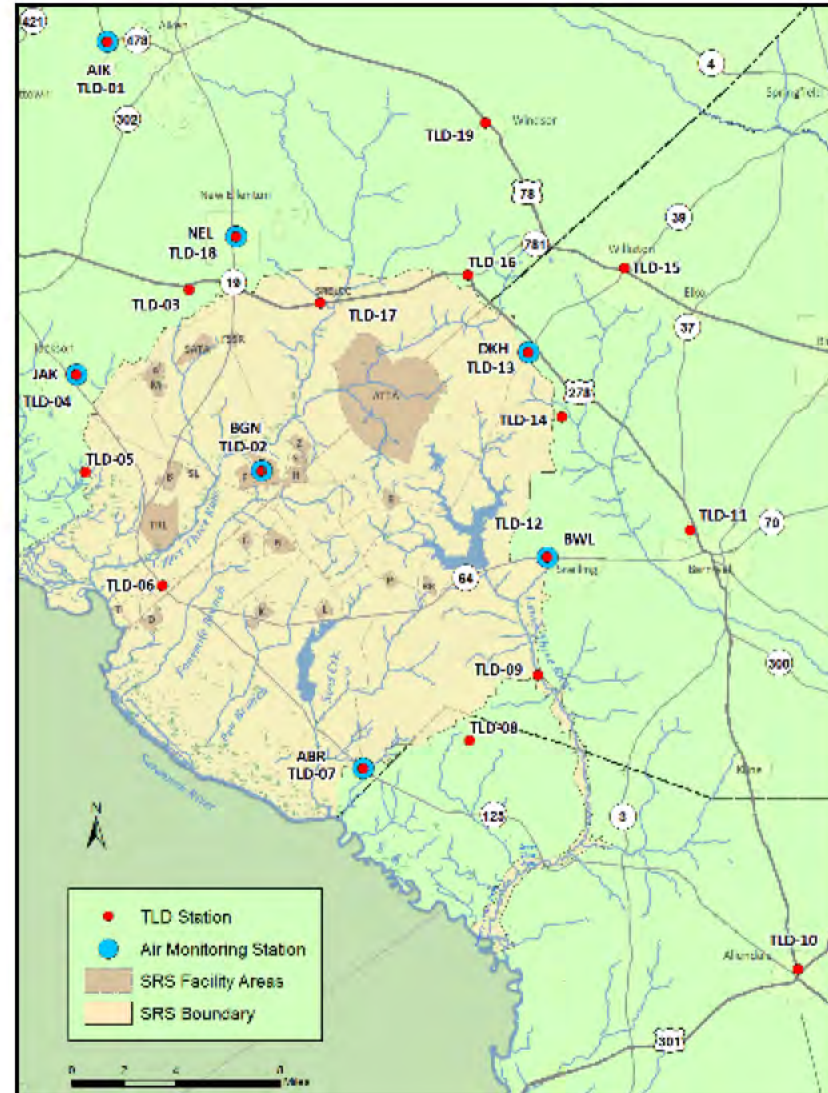
## Radiological Atmospheric Monitoring



## 7 Air Stations

- Particulates
- Precipitation
- Atmospheric Moisture

## 19 TLD's

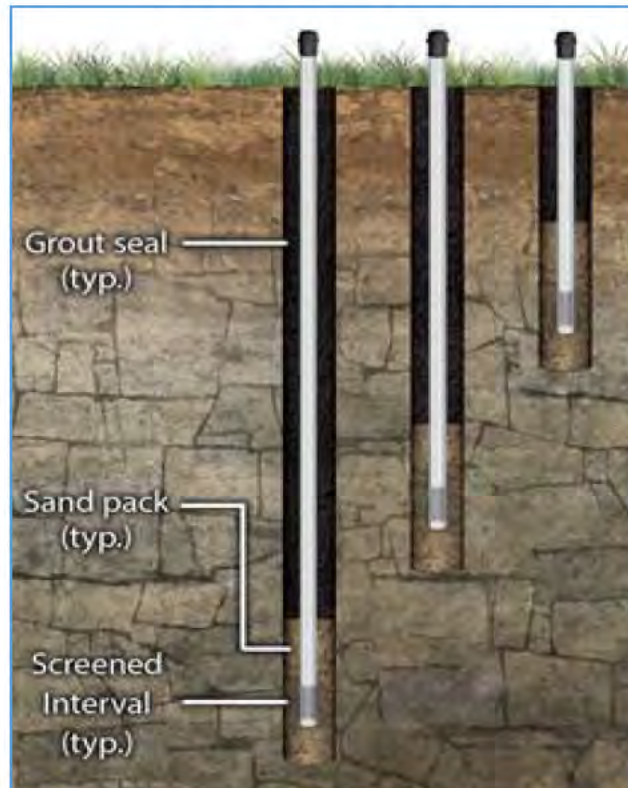


## Groundwater Monitoring

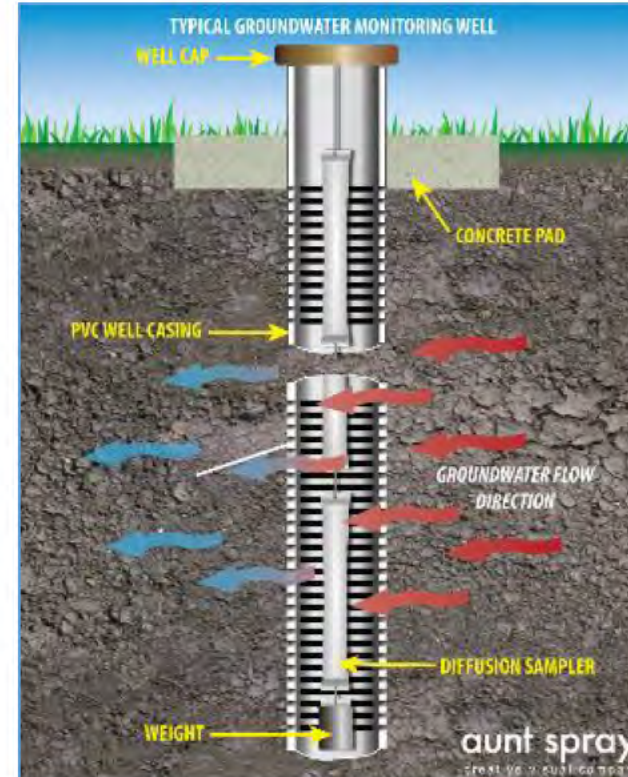


## Well Designs

### Cluster Wells



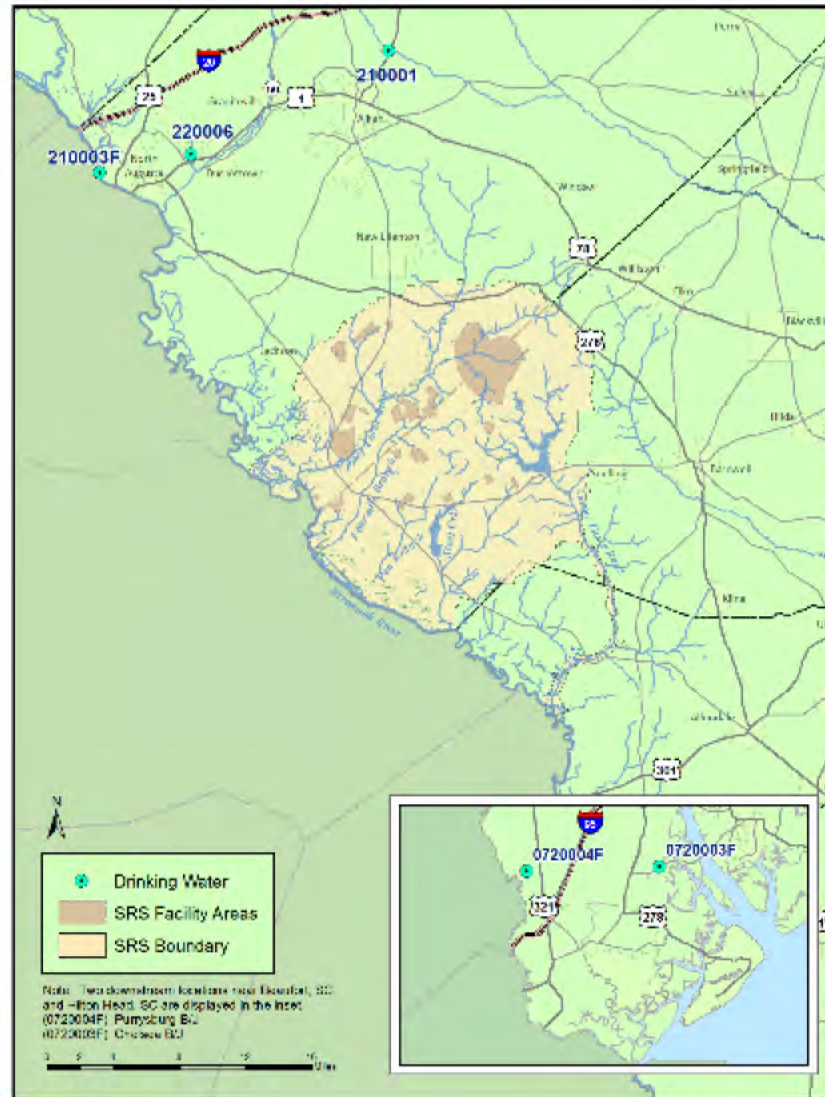
### Network Wells





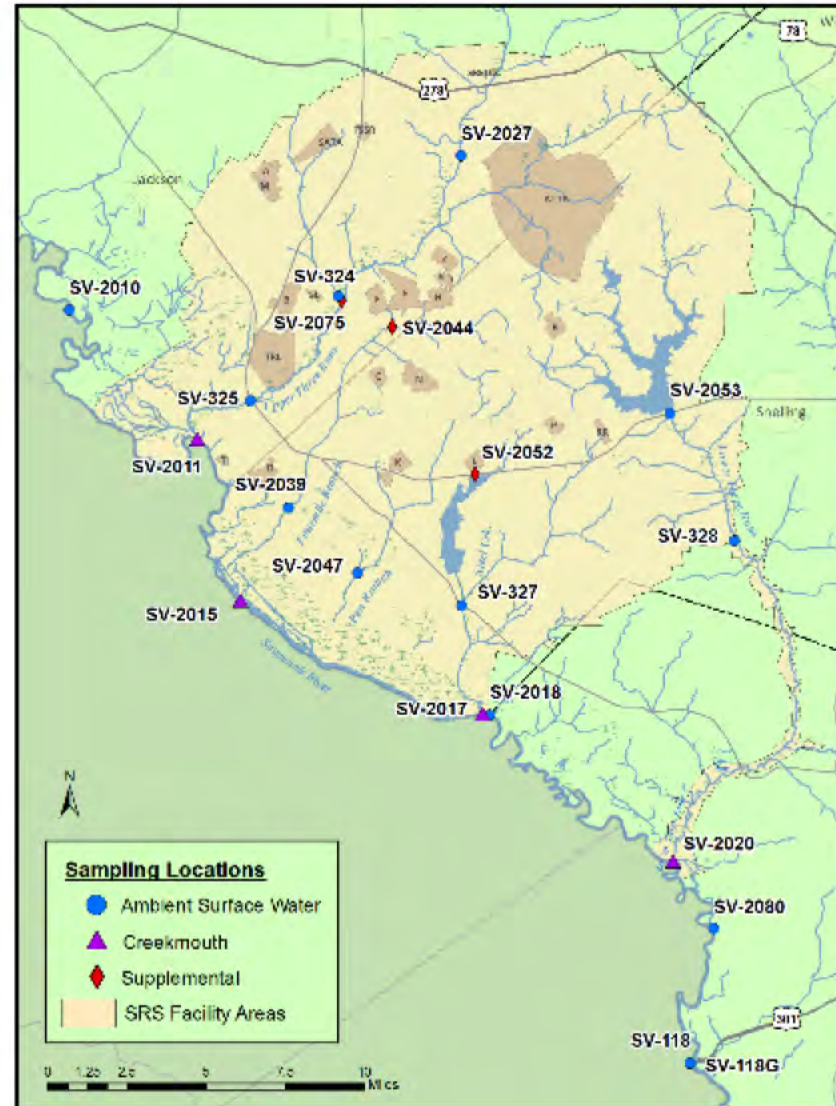
## Radiological Monitoring of Drinking Water Adjacent to the SRS





## Radiological Surface Water Monitoring





## Non-Radiological Monitoring of Surface Water



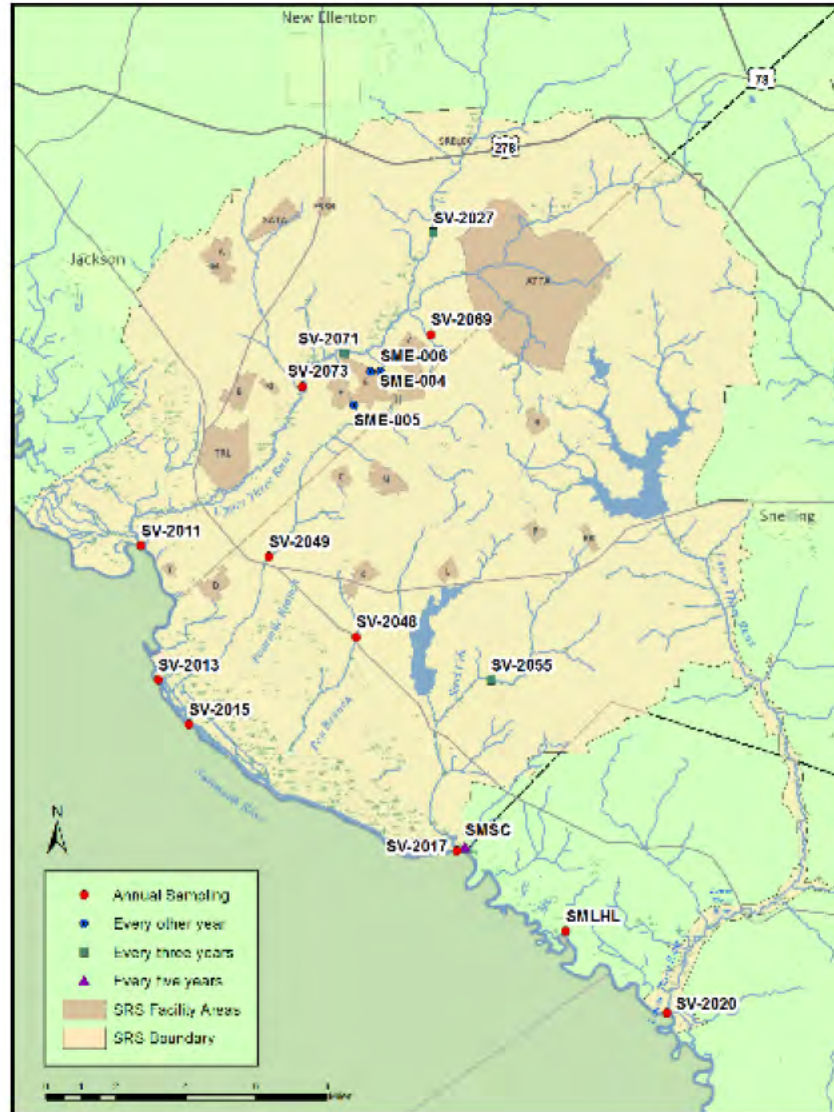


## Sample Parameters

- |                         |              |
|-------------------------|--------------|
| 💧 Temperature           | 💧 Alkalinity |
| 💧 pH                    | 💧 Cadmium    |
| 💧 Dissolved Oxygen      | 💧 Chromium   |
| 💧 BOD                   | 💧 Copper     |
| 💧 Total Suspended Solid | 💧 Iron       |
| 💧 Turbidity             | 💧 Mercury    |
| 💧 <i>E. coli</i>        | 💧 Manganese  |
| 💧 Ammonia               | 💧 Nickel     |
| 💧 Nitrate/Nitrite       | 💧 Lead       |
| 💧 Phosphorus            | 💧 Zinc       |
| 💧 TKN                   |              |

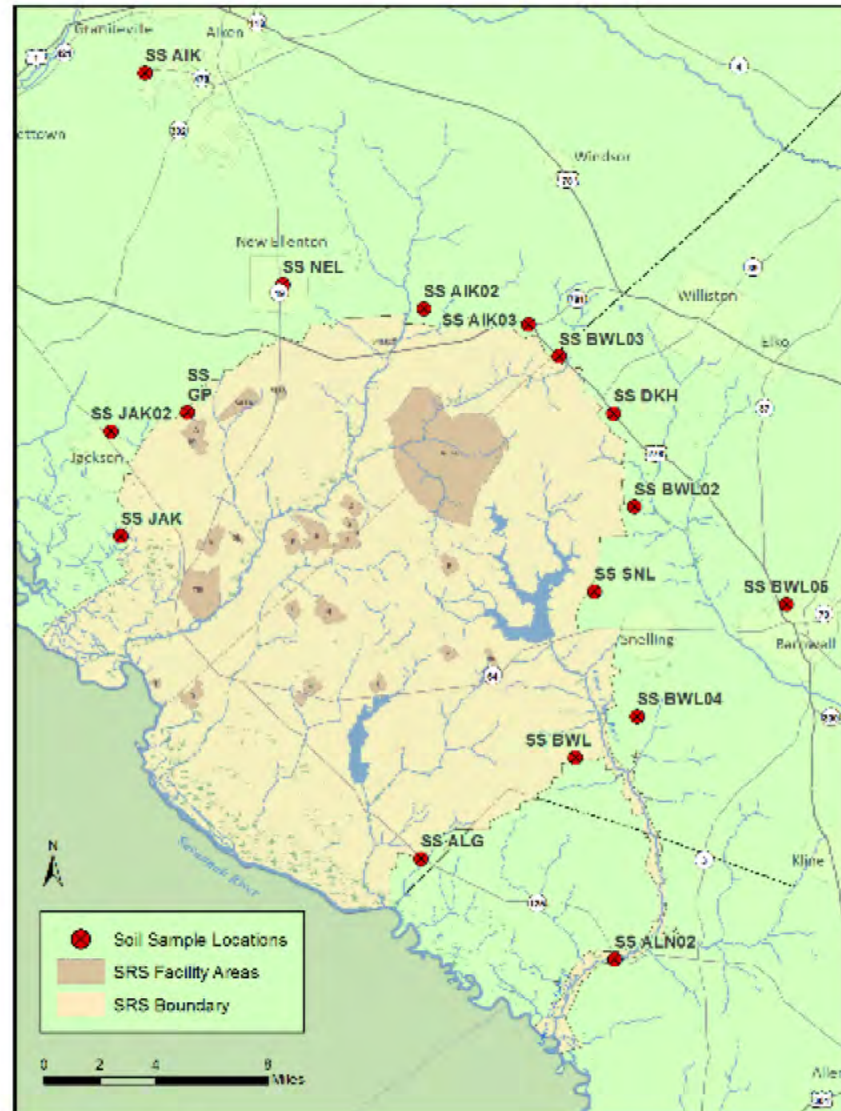
## Sediment Monitoring





## Soil Monitoring





## Terrestrial Vegetation Monitoring



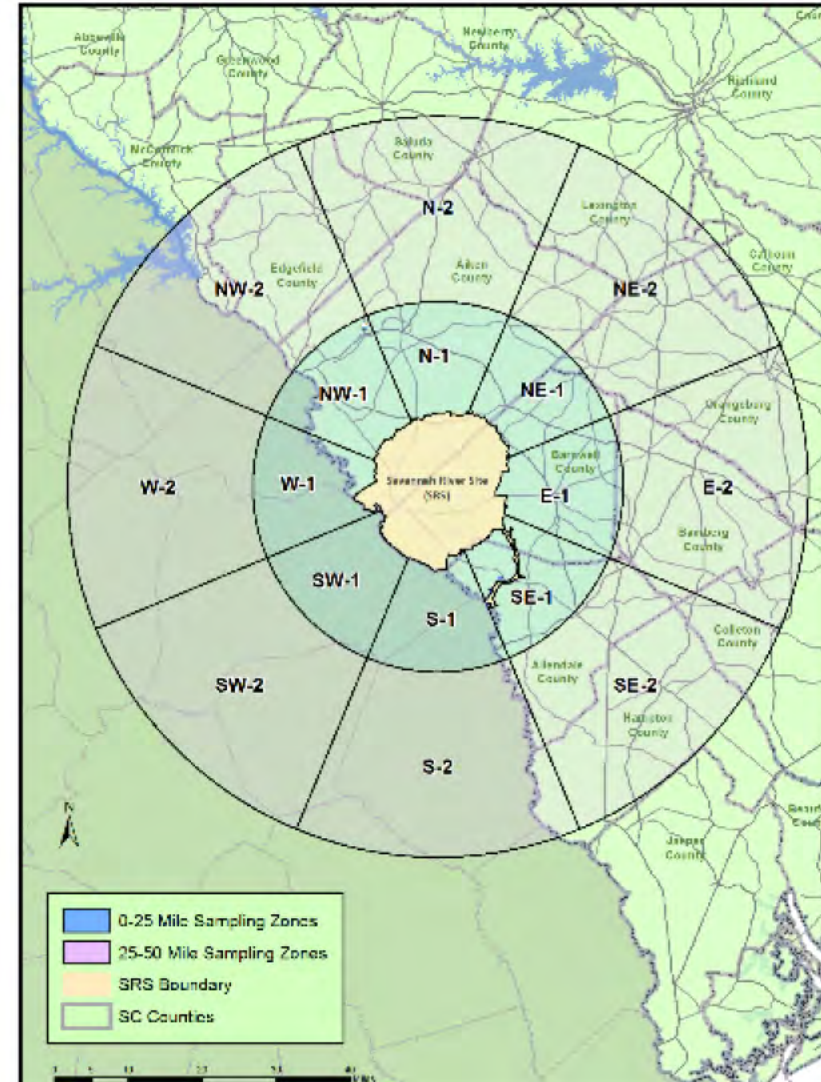
**Bermuda Grass**



## Edible Vegetation Monitoring

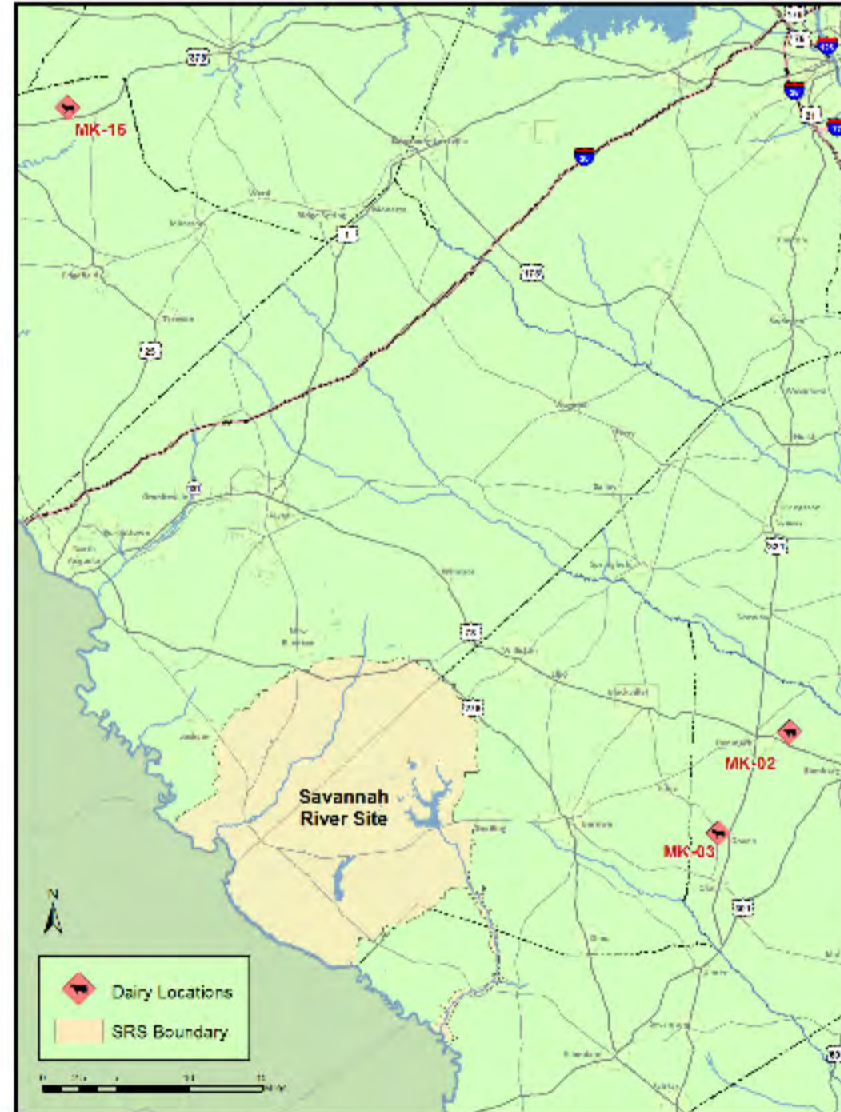


## Sampling Locations

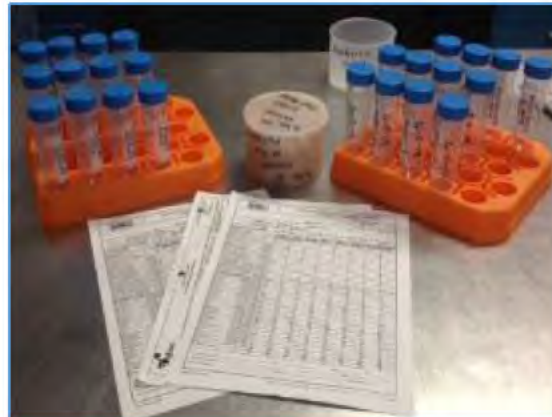


## Milk Monitoring





## Fish Monitoring



## Freshwater Species:

Channel and Flathead Catfish

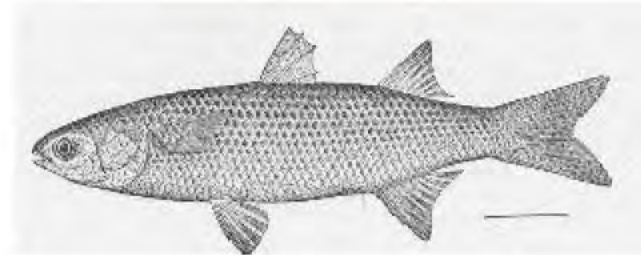


Largemouth Bass



## Saltwater Species:

Striped Mullet



Red Drum



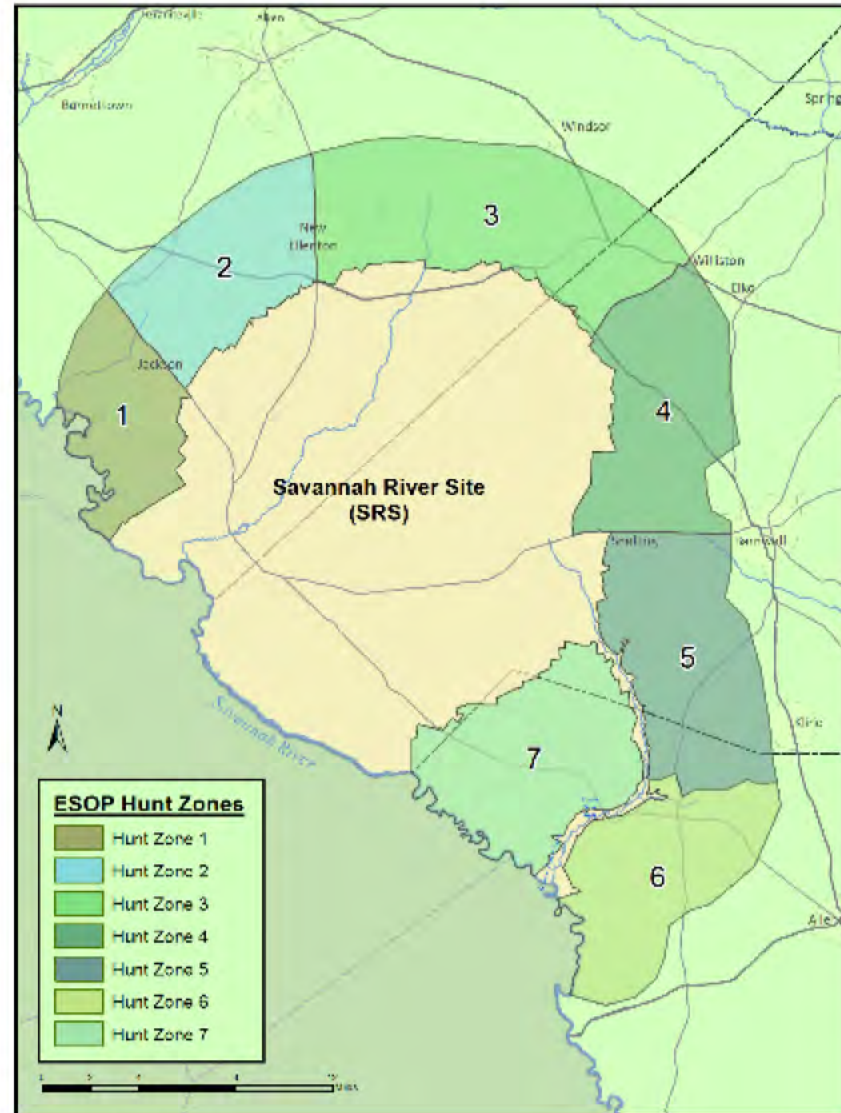
## Sampling Locations

Sample ID	Location
SV-2028	New Savannah Bluff Lock and Dam (NSBLD)
SV-2011	Upper Three Runs Creek
SV-2015	Fourmile Branch
SV-2017	Steel Creek
SV-2020	Lower Three Runs Creek
SV-118	Highway 301
SV-2091	Highway 17 (saltwater)
MD-119	Combahee River between Beaufort and Colleton counties



## Game Monitoring

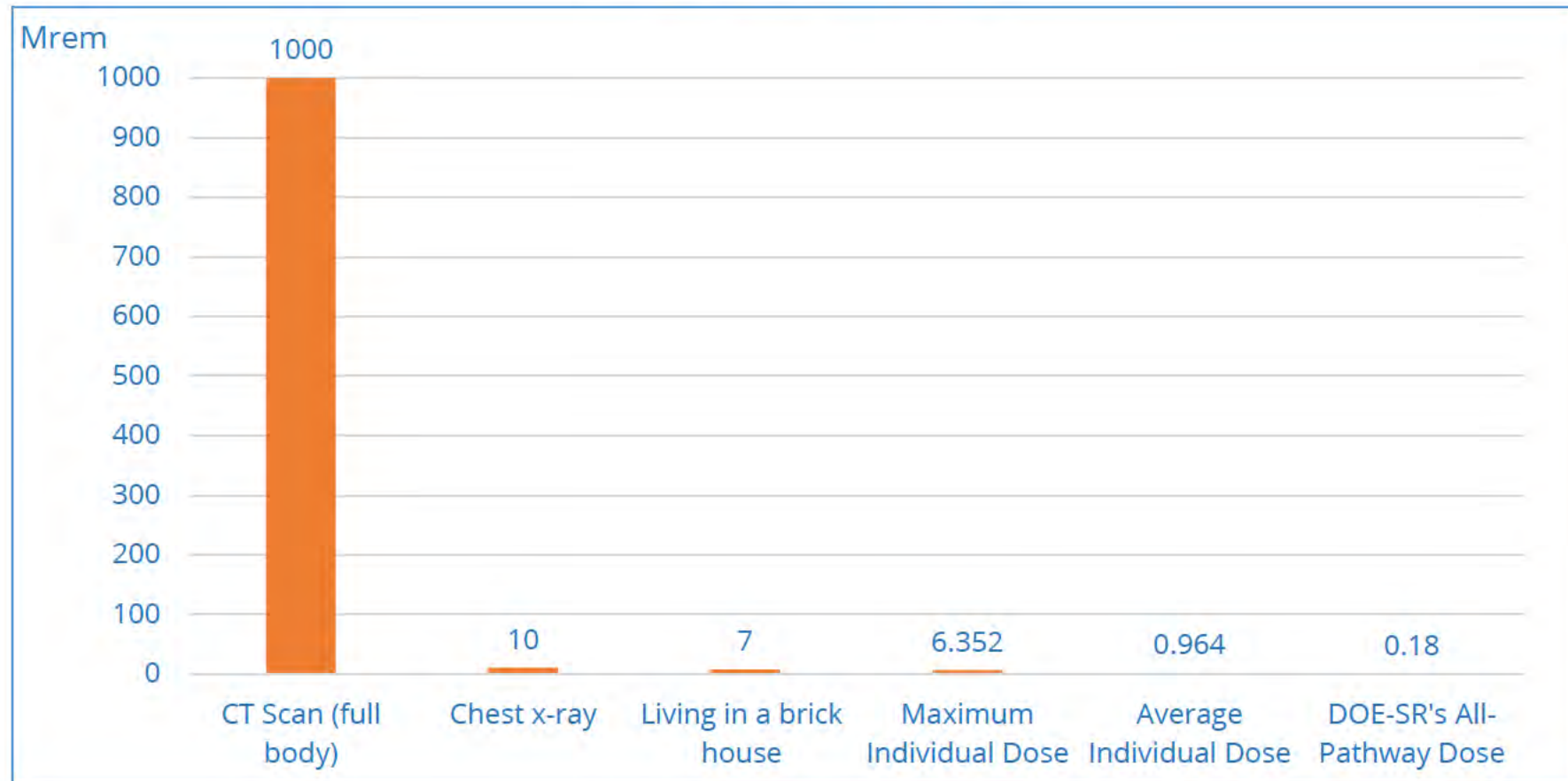




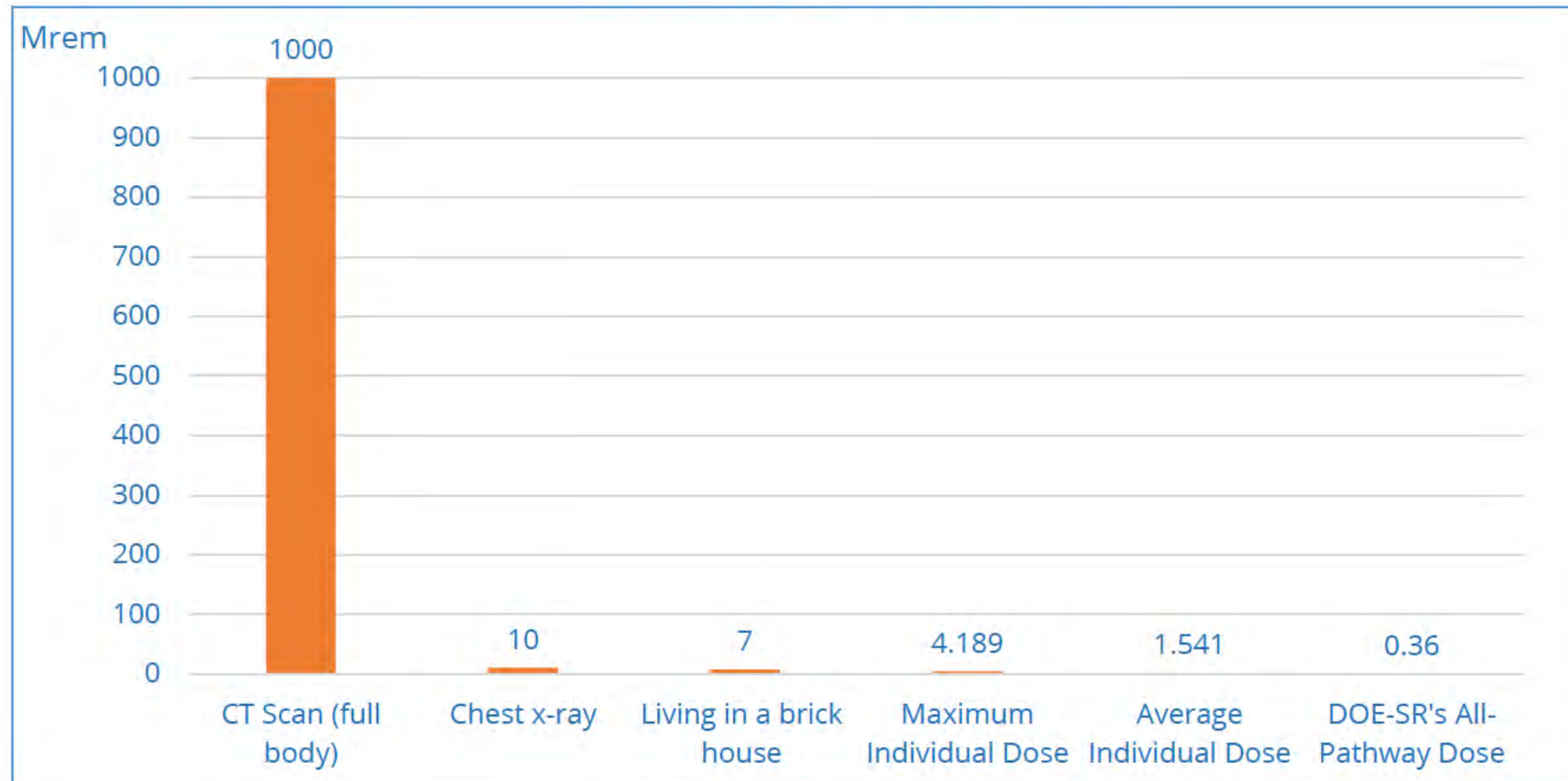
# Yearly Dose

- DHEC uses the data collected in each project to calculate a yearly dose
- DHEC results are comparable to DOE-SR's data

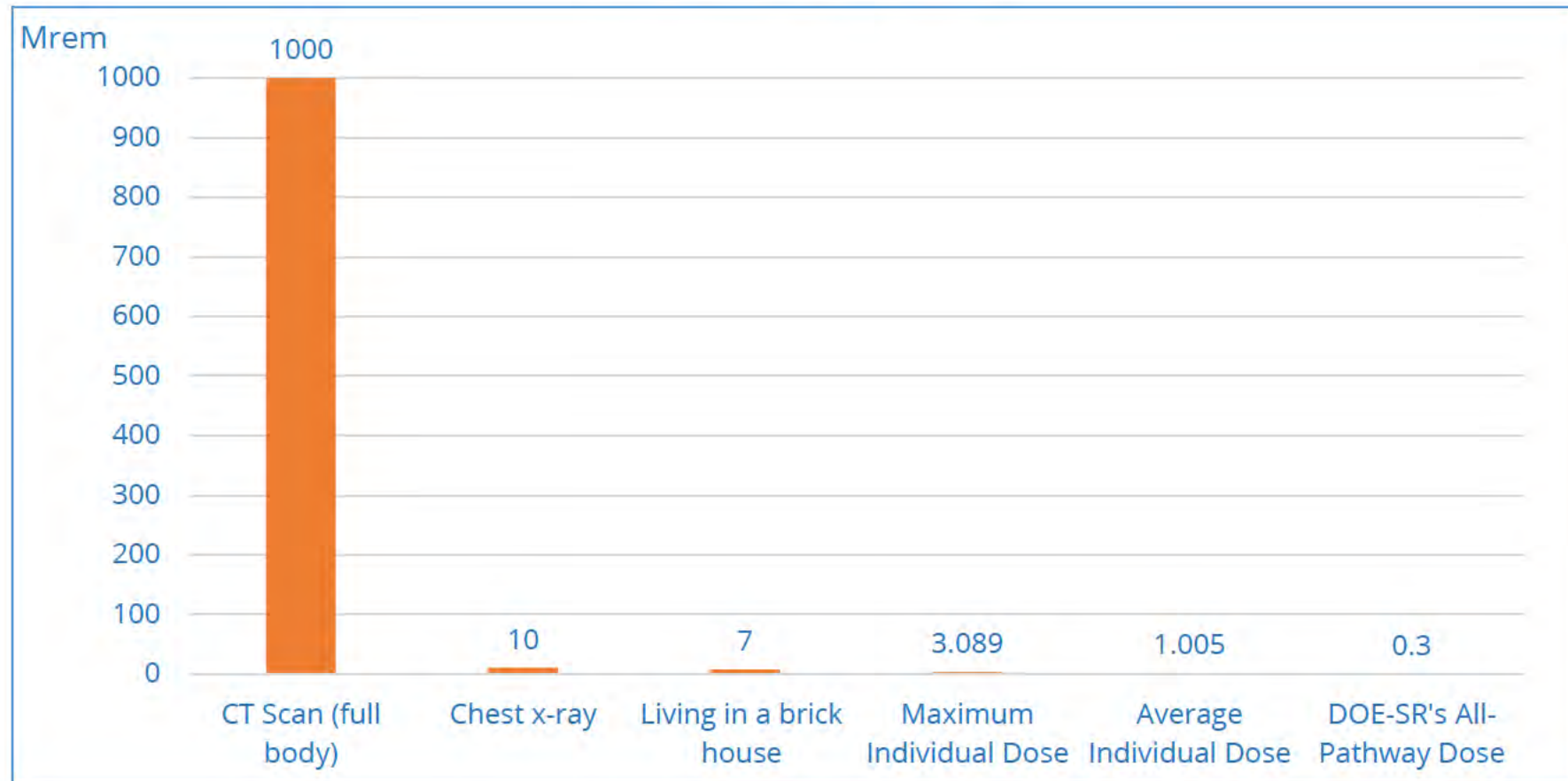
## 2019 Dose



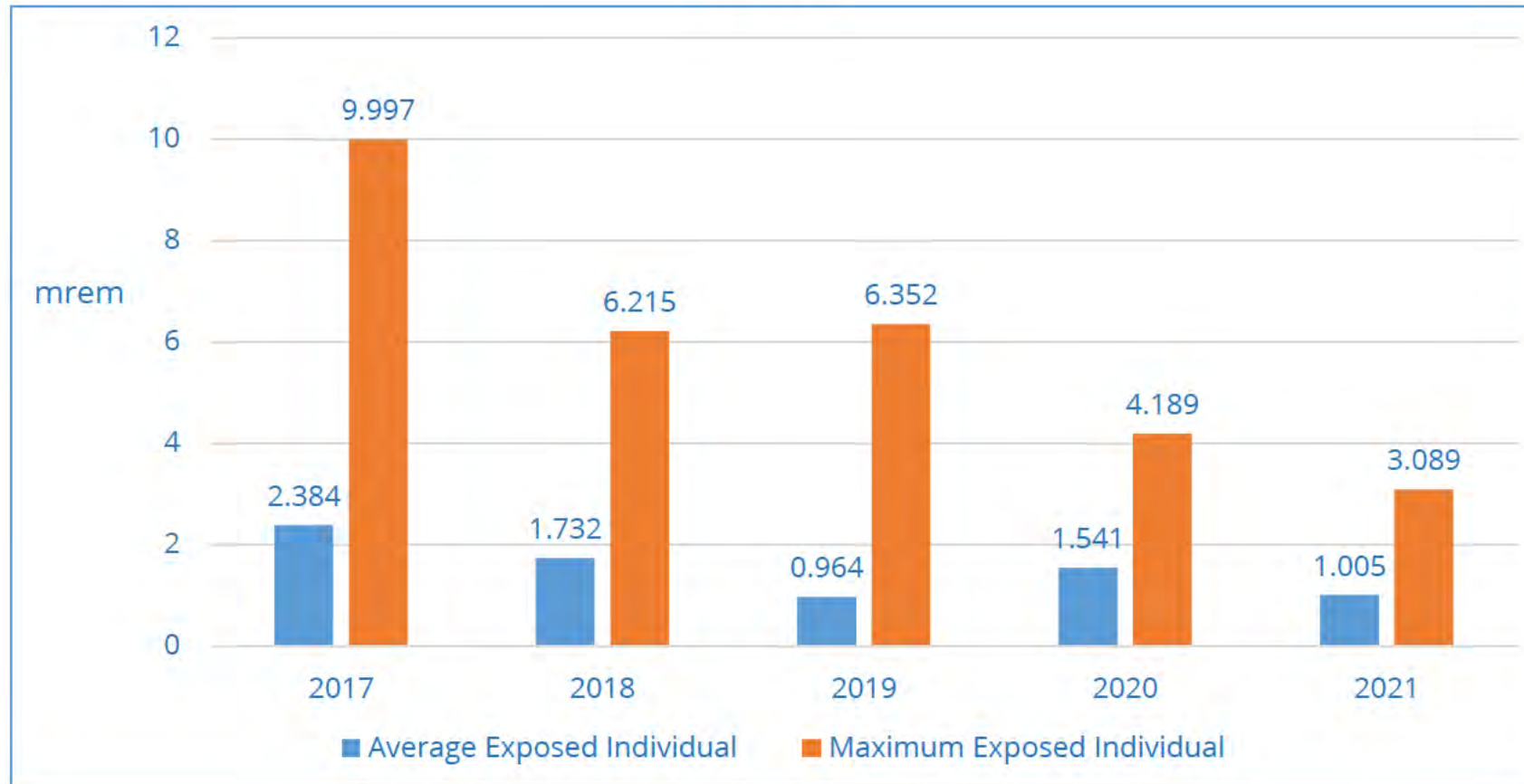
## 2020 Dose



## 2021 Dose



## Historical Trends for DHEC Dose: 2017 - 2021



# Public Outreach



**ESOP**  
Environmental Surveillance  
and Oversight Program  
2021 DATA REPORT



Grace Anne Martin  
ESOP Environmental Surveillance and Oversight Program







# Questions?



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Aiken, S.C. 29801  
803-642-1637

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- <https://www.researchgate.net/publication/262990262> An Entropy-Based Contagion Index and Its Sampling Properties for Landscape Analysis
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