South Florida Water Management District
Lake Okeechobee Watershed Restoration Project

The Lake Okeechobee Watershed Restoration Project is a part of the Comprehensive Everglades Restoration Plan.

The South Florida Water Management District and the U.S. Army Corps of Engineers developed an ASR Well Science Plan to support a phased, science-based implementation of ASR wells as part of the Lake Okeechobee Watershed Restoration Project. The Science Plan reflects the latest science and best available information on the use of ASR wells in Everglades projects.

Through the Science Plan and an Underground Injection Control (UIC) permit, SFWMD is implementing ASR well technology. In addition, SFWMD is working with landowners to acquire land necessary for the wetland restoration portion of the project.

Goals and Objectives:
- Increasing water storage capacity in the watershed north of Lake Okeechobee, resulting in improved Lake Okeechobee water levels.
- Improving quantity, timing, and distribution of water to the Northern Estuaries.
- Restoring wetlands within the project area.
- Improving water supply for existing legal users.

Project Features:
- Approximately 10 clusters of ASR wells (55 total ASR wells).
- 5,900 acres of wetland restoration.

Next Steps:
- Chief's Report
- Congressional Authorization
- Project Partnership Agreement

ASR Phased Implementation as Recommended by the National Research Council

- Continuous Cores (2021-2023)
  - APP7 attributes (local scale)
  - Injection pressures for fracture potential
  - P removal mechanisms
  - Pathogen inactivation

- Reactivation of Existing ASR Systems (2021-2023)
  - APP7 attributes (local scale)
  - Premix mechanisms
  - Chronic toxicity testing
  - Arsenic transport within aquifer
  - Buffer zone to reduce sulfate concentrations
  - Fate of sulfate in recovered water to form methanetory
  - Pathogen inactivation
  - Groundwater travel times

- Test/Exploratory Multi-Well (2021-2023)
  - APP7 attributes (local scale)
  - Local scale models for heterogeneity, anisotropy, fracturing, and travel times
  - Arsenic analysis for regulating wells
  - Tracer studies for flow and transport
  - Crosswell tomography and geophysics
  - Well spacing and optimal recovery efficiency
  - Injection pressures for fracture potential
  - Pretreatment technologies to remove arsenic
  - Pathogen inactivation

- Initial Cycle Testing (2025-2027)
  - Well spacing and optimal recovery efficiency
  - Injection pressures for fracture potential
  - P removal mechanisms
  - Improved/better cycle tests
  - Establish buffer zone
  - Operate multi-well pairs and clusters
  - Locate clusters near large water bodies
  - Pretreatment technologies to remove arsenic
  - Acute and chronic toxicity and bioaccumulation testing
  - Multi-cluster chronic toxicity testing
  - Community-level effects and bioaccumulation
  - Long-term bioaccumulation & community dynamic studies
  - Probabilistic, quantitative risk assessment
  - Source water effects on redox evolution of aquifer
  - Arsenic transport within aquifer using buffer zone
  - Buffer zone usage to reduce sulfate concentrations
  - Fate of sulfate in recovered water to form methanetory
  - Variability of gross alpha and radium in recovered water

- Extended Testing & Wellfield Expansion (2026-2030)
  - Improved/better cycle tests
  - Establish buffer zone
  - Operate multi-well pairs and clusters
  - Multi-cluster chronic toxicity testing
  - Community-level effects and bioaccumulation
  - Protracted bioaccumulation studies
  - Probabilistic, quantitative risk assessment
  - Source water effects on redox evolution of aquifer
  - Arsenic transport within aquifer using buffer zone
  - Buffer zone usage to reduce sulfate concentrations
  - Fate of sulfate in recovered water to form methanetory
  - Variability of gross alpha and radium in recovered water

MAP LEGEND
- ASR Well Clusters
- Kissimmee River Center Wetland
- Paradise Run Wetland
- Brighton Reservation
- Highlands Co Glades Co
- C40 Cluster
- C41 Cluster
- C43 Cluster
- C44 Cluster
- C38N Cluster
- C38S Cluster
- C39 Cluster
- L33N Cluster
- L63N Cluster
- St. Lucie Co
- Martin Co
- NOT TO SCALE

REVISED RECOMMENDED PLAN

Kissimmee River Center Wetland
Paradise Run Wetland
Brighton Reservation
Highlands Co Glades Co
C40 Cluster
C41 Cluster
C43 Cluster
C44 Cluster
C38N Cluster
C38S Cluster
C39 Cluster
L33N Cluster
L63N Cluster
St. Lucie Co
Martin Co
NOT TO SCALE

NOT TO SCALE