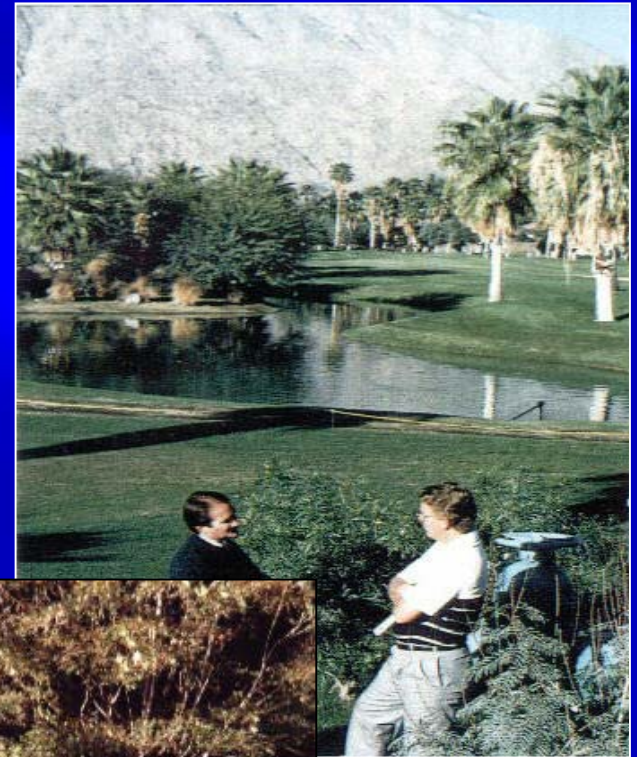
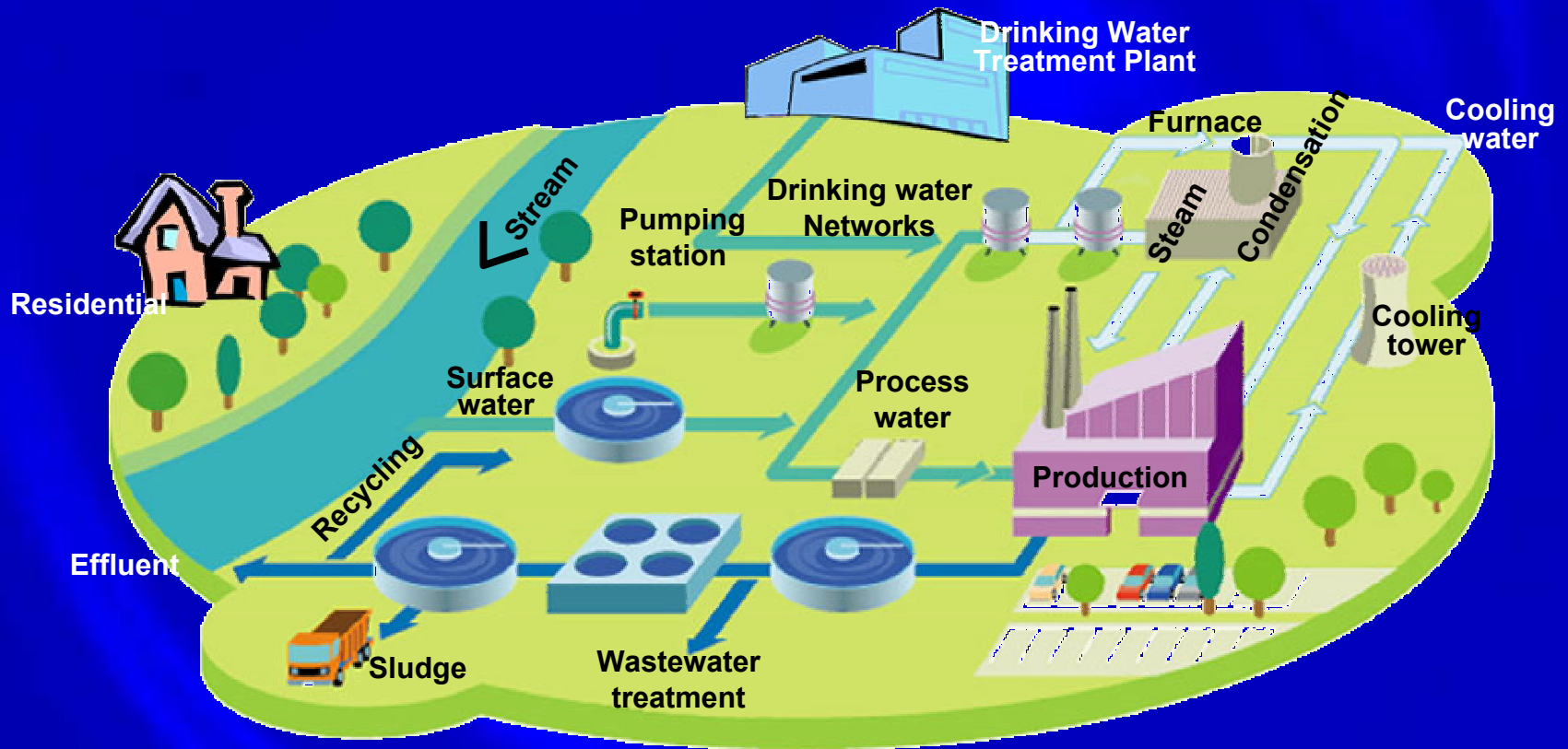


# Review of Successful Water Re-use Programs



# **USFilter:** *Leading the water industry in total water management solutions for commercial, industrial, municipal and residential customers*



# Water Re-use Application

- Crop/turf/lawn irrigation
- Process water applications
- Cooling water applications
- Equipment operations
- Industrial process applications





# Arvin, CA

## *Design/Build/Own/Operate*

### ■ First California Water Privatization

- 2.0-mgd Wastewater Facility with Collection System and Pump Station
- 35-year Agreement
- Operate Plant Now
- Effluent used for irrigation purposes



### ■ USFOS Engineering & Construction Design-Build Improvements

### ■ Annual and Up-front Payment to City

### ■ Guarantees Plant Completion and Service Date

# Atwater, Ca. WWTP

- **100% reuse of 6.0 MGD**
- **Discharge to Atwater Drain – flows to Joseph Gallo Farms for use in spring & summer**
- **Winter flows pass through to US Fish & Wildlife wetlands reserve for waterfowl.**

# **Conoco/Hydroserve, Westlake, LA**

## ***USFOS Project since 2/2000***

- **One of the Largest Transactions of its Kind in the Refining Industry**
  - **28-year Agreement**
  - **Own, Operate, Maintain and Manage**
    - **7.2-MGD Process Water Treatment Plant**
    - **7.1-MGD Industrial Wastewater Treatment Plant**
    - **Effluent reuse to industrial facility**



# Lecheria, Mexico

- Treats flows taken from “drainage” canal
- Re-use includes
  - Golf course irrigation
  - Glass plant
  - Foundry
  - Power Plant

# **Case Study**

## **Sun MidAmerica Company**



- Project:** 8-MGD Wastewater Treatment Plant Operation
- Rationale:** Sun MidAmerica wished to free assets and lower operating costs
- Technical:** 3.5mgd Reuse to Supply Cooling Towers
- Permits:** Transferred to USFilter, Air and Water
- Logistics:** Four week overlap of workforce to insure uninterrupted operations of WWTP



# Honolulu, Hawaii

## *Design/Build/Own/Operate*

### ■ 12-MGD Wastewater Reclamation Plant

- Includes Two Products and Merchant Plant Concept
- High-Purity RO Water for Industrial Use
- R1 Water for Irrigation Purposes
- Merchant Plant Concept is Initiated with Risk on Private-Sector Side



# **Atlanta-Fulton County, GA**

## ***Long-Term Operations***

- **O&M of a 90-mgd Water Treatment Facility including Pumping Station and Water Main**
- **Pilot Program Implemented to Increase the Flow Rate Capacity Without Requiring Capital Expenditures**
- **Award-Winning Treatment Facility**
- **15.2 MGD/yr. applied to grounds for lawn watering. Water is decant from process.**



- **Best Operated Plant in Georgia**
- **Safety Awards in 1996 and 1997**
- **Water Taste Challenge Award**
- **Safe Drinking Water Excellence Award**

# **Lynn, MA**

## ***Long-Term Operations***

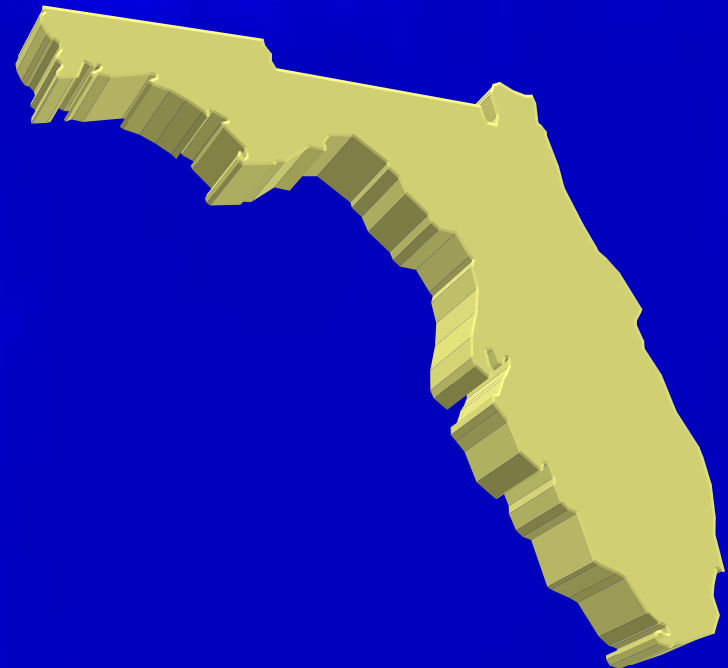
- **Operate and Maintain 26-MGD Wastewater Treatment Plant**
- **Primary/Pure Oxygen Secondary Treatment**
- **Filter Presses w/Fluidized-Bed Incineration**
- **15-year Agreement**
- **Water reuse in cooling and process wash-down**



# Florida Power & Light

## *USFilter Project since 1995*

- **Design, Build, Own and Operate  
Boiler Feedwater Systems**
  - **7 Power Plant Sites**
    - Manatee
    - Cape Canaveral
    - Riviera
    - Port Everglades
    - Putnam
    - Fort Meyers
    - Sanford





# **PSE&G – Bergen Station**

**Bergen Co., NJ**

- **NJDEP Environmental Excellence Award  
2002 Drought Relief Program**
- **Wastewater Effluent water reuse using  
Reverse Osmosis Process**

# Wilmington, DE

## *Public-Private Partnership*

- 20-year, \$164 million O&M Contract is One of the Largest Public-Private Partnership Agreements of its kind
- Effluent re-use for landscapers, road milling operations, and other commercial interest.
- Installing system for delivery to adjoining industry.



105 mgd  
secondary treatment  
wastewater facility

# **Woonsocket, RI**

## ***Long-Term Operations***

- **\$18 million in Capital and \$2 million Annual Operating Contract**
- **Community Faces Serious Environmental Challenges**
- **Solution includes Improvement to the Environmental Challenge**
- **Sites Adjacent to the Treatment Plant**
- **Significant Savings Transferring Technology to Industrial Plant**

# **Westlake Petrochemicals, LA**

## **■ Chemical Manufacturer**

- **Water and Wastewater Systems serving Two Ethylene Plants**
- **Demineralized Water Supply for a Styrene Plant**

## **■ 15-Year Outsourcing Agreement**

- **Operations, Maintenance & Management Services**
- **Capital Improvements**

## **■ Multiple Facilities**

- **2.59-MGD Industrial Process Water Plants**
- **0.576-MGD Industrial WWTPs**
- **0.001-MGD Sanitary WWTPs**



# **IPSCO Steel, Mobile, AL**

## ***New Plant Construction***

- **Water Production and Wastewater Facilities for State-of-the-Art Steel Mill**
  - **2 Year Schedule - 15-Year Agreement**
  - **Design, Build, Own, Operate and Manage**
    - **95,000 gpm of Water to Meet All Needs**
      - **Potable**
      - **Contact**
      - **Non-Contact**
      - **Reuse**
      - **Wastewater**



# Various Projects

<i>Project</i>	<i>Plant Type</i>	<i>Re-use Application</i>
<b>Bristol, TN</b>	WWTP	100,000gpd wash down
<b>Burlingame, Ca.</b>	WWTP	300,000gpd wash down
<b>Crystal River, FL.</b>	WWTP	Hay field irrigation
<b>Fall River, Ma.</b>	WWTP	800,000gpd air scrubber
<b>Moore, OK.</b>	WWTP	Power generation supply
<b>Oklahoma City, OK</b>	3 WWTP	Golf course irrigation, power plant cooling (2)
<b>Palm Springs, Ca.</b>	WWTP	Ground water recharge, golf course irrigation
<b>Cranston, RI</b>	WWTP	Power plant cooling

# Summary

- **Various and Diverse re-use applications**
- **Cost effective alternatives to “new” water**
- **Re-use treatment available to highest quality standards**
- **Environmentally superior to traditional one-use and then discharge approach**