

Molokai CPAC

May 20, 2015

Kawela Plantation Water System



About Kawela Water System

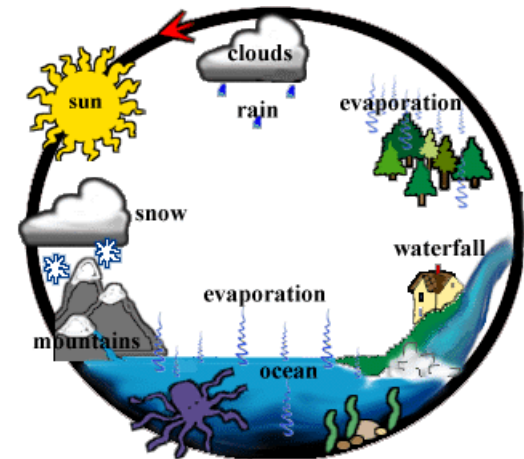
- The Kawela Water system is a public water system.
- System entirely owned by Kawela Plantation Homeowners' Association (KPHA).
- We are not regulated by the Public Utilities Commission.
- We follow the regulations set by the EPA, DOH and the Safe Water Drinking Act.
- Service is provided solely within the Kawela subdivisions.
- 5 miles east of Kaunakakai, between Makakupaia and Makolelau.

History

- The water systems were built in 1980.
- Originally developed with two separate water delivery
 - Potable
 - Agricultural
- State of Hawaii CWRM issued KPHA a water use permit; allocating 285,000 gpd.
- Allocation for both potable and agricultural use.
- Cost of water delivery was included in the maintenance fees.
- First 15 years KPHA employees operated the system.
- Late 1990's to 2010 water operations were outsourced.

History

- 2006 Water rate charges were passed.
- 2007 System at verge of complete failure.
- 2007 New contract operators hired.
- 2007 Assistance from RCAC began.
- 2007 Ag System taken out of service.



System Function

➤ Ag System

- 2 groundwater wells
- 4 core-ten steel tanks

➤ Potable System

- 3 deep wells
 - Located at approximately at 250' elevation within the subdivision
 - Depth of 235'
 - Submersible pump/motor
 - 6" well casing
- 2 miles of transmission line
 - 4" Ductile Iron (DI) pipe
- 6 booster pumps

System Function

- 3 concrete storage tanks
 - 450,000 gallon capacity
- 1 core-ten steel tank
 - 50,000 gallon capacity
- 12 miles of distribution line
 - 8" DI pipe
- Chlorination system for water treatment
- Tank 1 supplied lower elevation lots in units 1 & 2
- Tank 2 supplied upper elevation lots in unit 1
- Tank 3 holding tank
- Tank 4 supplied upper elevation lots of unit 2 and all of unit 3

System Function

- Entire delivery system controlled by an electronic monitoring system called SCADA (Supervisory Control and Data Acquisition)
- Data collected by SCADA; i.e., flow rates, amps, chemical feed rate
- Water pumped is metered at the wells and at each service connection



Current Conditions

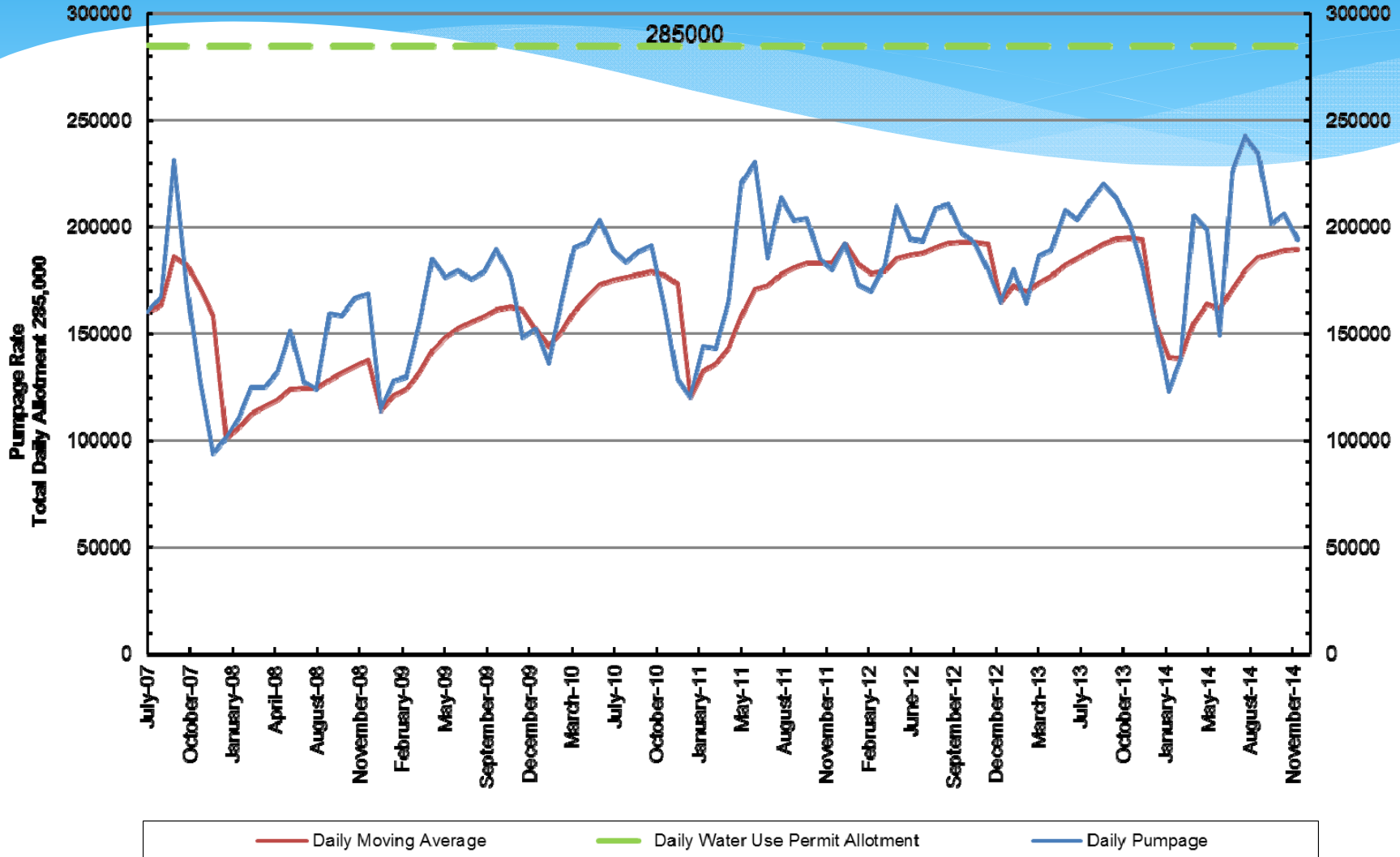
- 2009 System underwent a 2 year upgrade and capital improvement projects
 - 2 new parallel wells with 12” well casing
 - All stainless steel pump/motor
 - Eliminated 4 booster pumps
 - Eliminated core-ten steel tank
 - Tied remaining tanks together
 - Installed new chlorination system
 - Upgraded SCADA system
- 2010 Water Operations under Kawela Management
- Staff of 2.5 field staff; 1 office support, 1 manager
- 2010 Water System Rules and Regulations adopted

Current Conditions

- 2011 Backflow Preventer Regulations adopted
- 2014 Well 1 taken offline
- 155 service connection
 - 130 with usage
 - 210 service capacity
- Average daily pumpage 165,000 between July 2007 to December 2014
- 5mgd sustainable yield in Kawela aquifer
- Current unaccounted or non-revenue loss is 15%
- Chloride or salinity levels average 115mg/L

Water Allotment

Kawela Plantation Water Use July 2007 - December 2014



Future Conditions

- KPHA will not be able to meet future needs
- Projecting 500,000gmd at full build-out
 - Consumer usage
 - Fire protection
- Will need to start allocation request process with CWRM
- New source water location needed
 - Higher elevation
 - Bigger capacity
- New storage unit
- Photovoltaic power production

Concerns

- Emergency Interconnection
- Wildfire
- Storage capacity
- Disaster and emergency response
- Watershed protection

KPHA's Mission Statement

Provide for the management, maintenance, protection, preservation, architectural control and development of Kawela Plantation, and to promote the health, safety and welfare of its members. By operating our water system in a professional and cost effective manner so as to deliver clean, safe, drinking water on a consistent basis we can protect our investment and consider future needs, based on full build-out. KPHA understands we share this valuable resource with the greater Molokai community and will always show our respect for the importance of this resource and the community in our actions.

The Kawela Water System will provide safe, clean, and affordable drinking water to customers by ensuring the safety and security of its supply and the system, meeting existing and new regulations, and consistently improving operations.

Mahalo

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