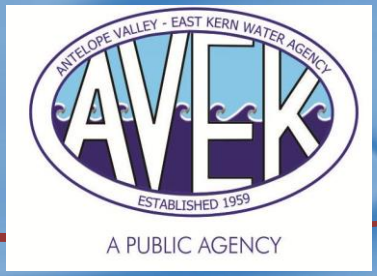
Kennedy/Jenks Consultants



Grand Prize – Environmental Sustainability Kennedy Jenks Consultants and AECOM Antelope Valley-East Kern Water Agency (AVEK) – Westside Water Bank

Michael Flood, P.E.

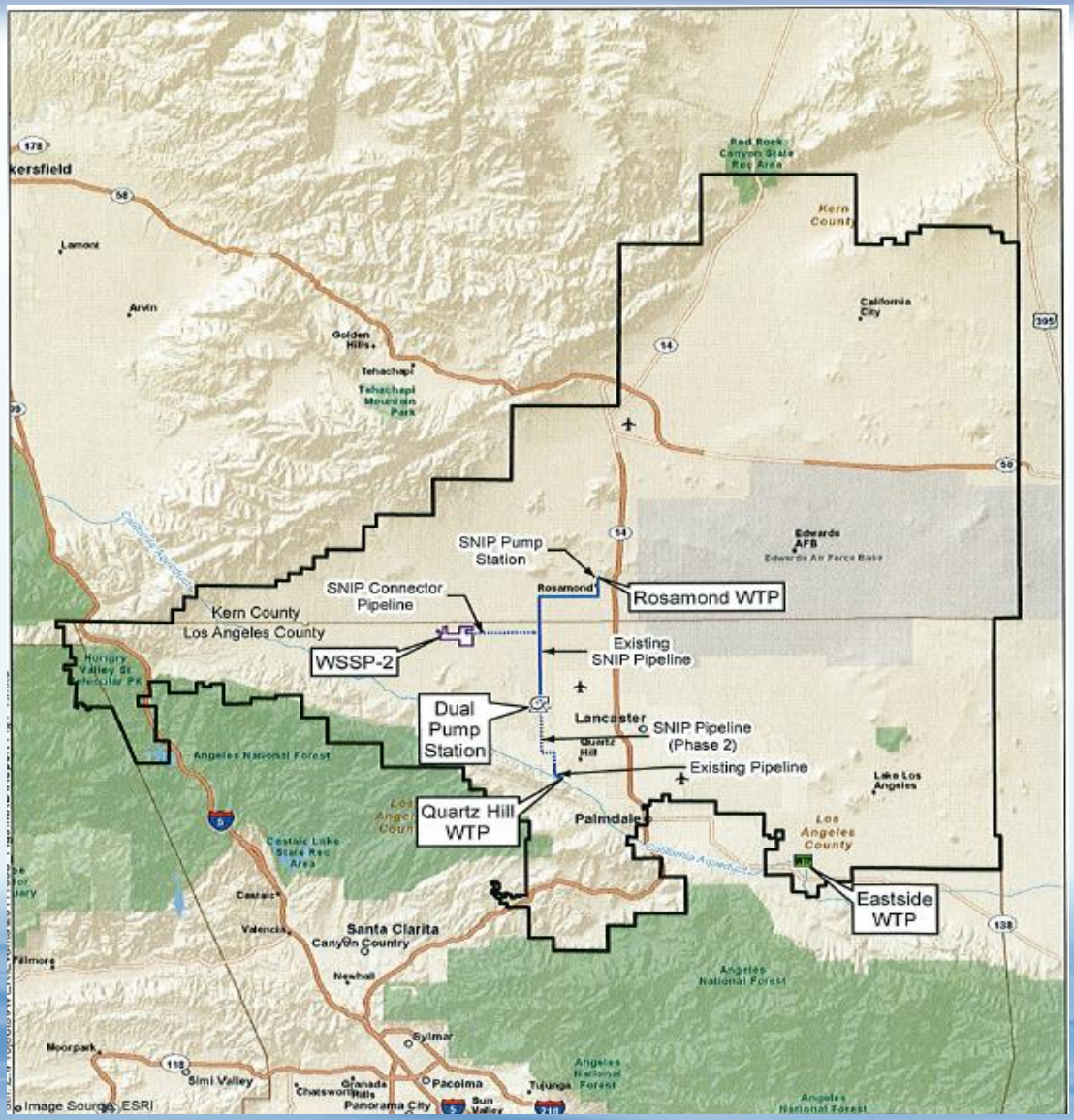
David Ferguson, Ph.D., P.E., BCEE

Presentation Overview

- AVEK Service Area
- Water Supply
- Water Banking Strategy
  - Water Supply Stabilization
  - THM Compliance
- Recharge Approach
- Extraction Wells and Conveyance
- 2014 Results

AVEK Service Area

- Wholesale supplier
- 2,300 square miles
- Los Angeles and Kern Counties, CA
  - Mojave Desert area
  - Edwards Air Force Base
- 20+ municipal retailers, agricultural, and industrial users



Water Supply

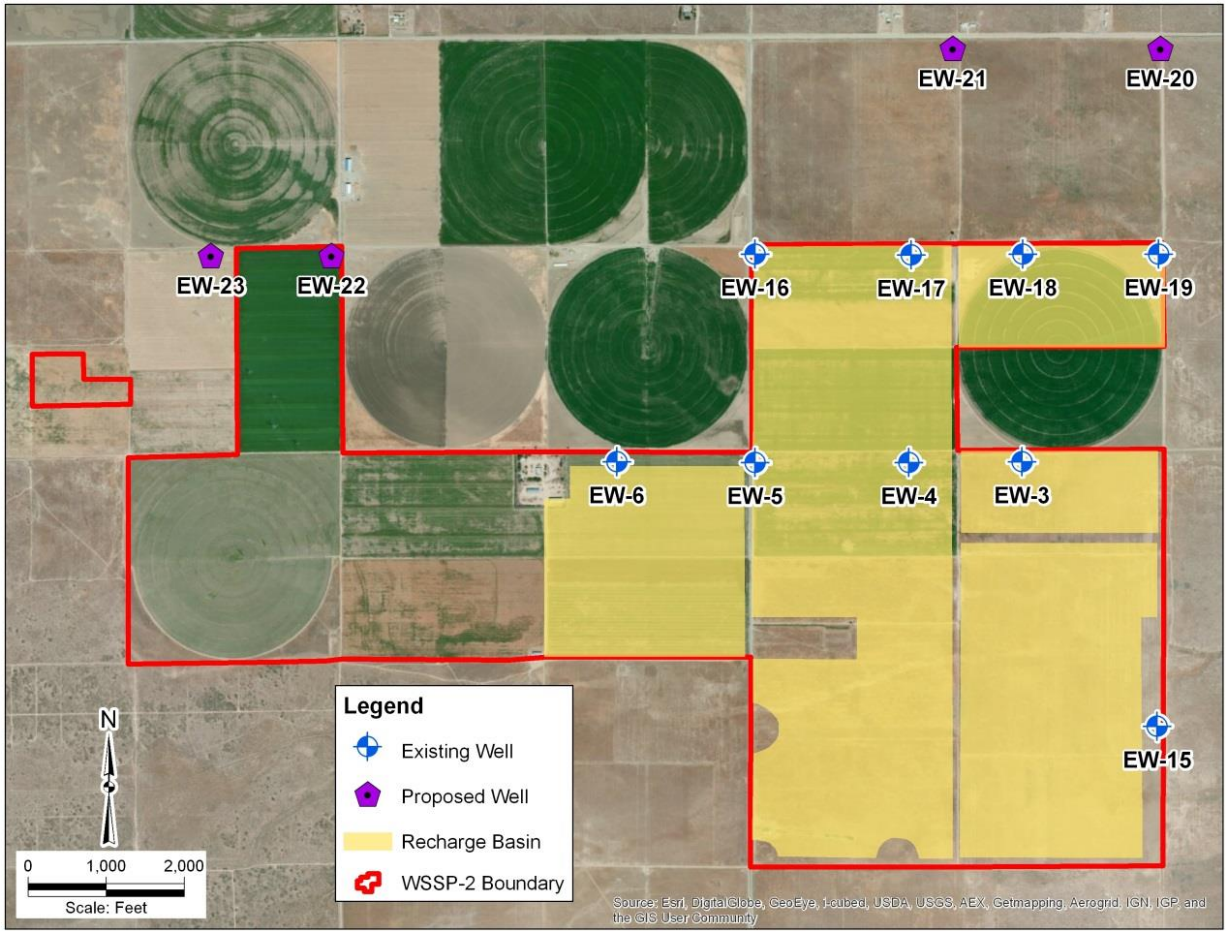
- **CA State Water Project Contractor**
  - **144,800 AFY Table A Allocation**
  - **60,000 AFY average demand**
- **SWP highly variable**
  - **5% to 80+% allocations**
  - **Average 58%**
- **Groundwater basin is currently in an adjudication process**

Water Bank Strategy

- **Water Supply Stabilization**
  - **Bank surplus SWP water during wet and normal years and extract the banked water during dry years**
- **THM Compliance**
  - **Substitute SWP treated water with extracted (low TOC) groundwater for one quarter out of the year**
  - **Blend the SWP treated water with 50 to 70% groundwater for multiple quarters**

Water Bank Layout

- 1,500 ac property
- Recharge up to 50,000 Ac-Ft/year
- Extract 90% of recharged water:
  - Phase 1 – 20,000 Ac-Ft/year
  - Phase 2 – 40,000 Ac-Ft/year

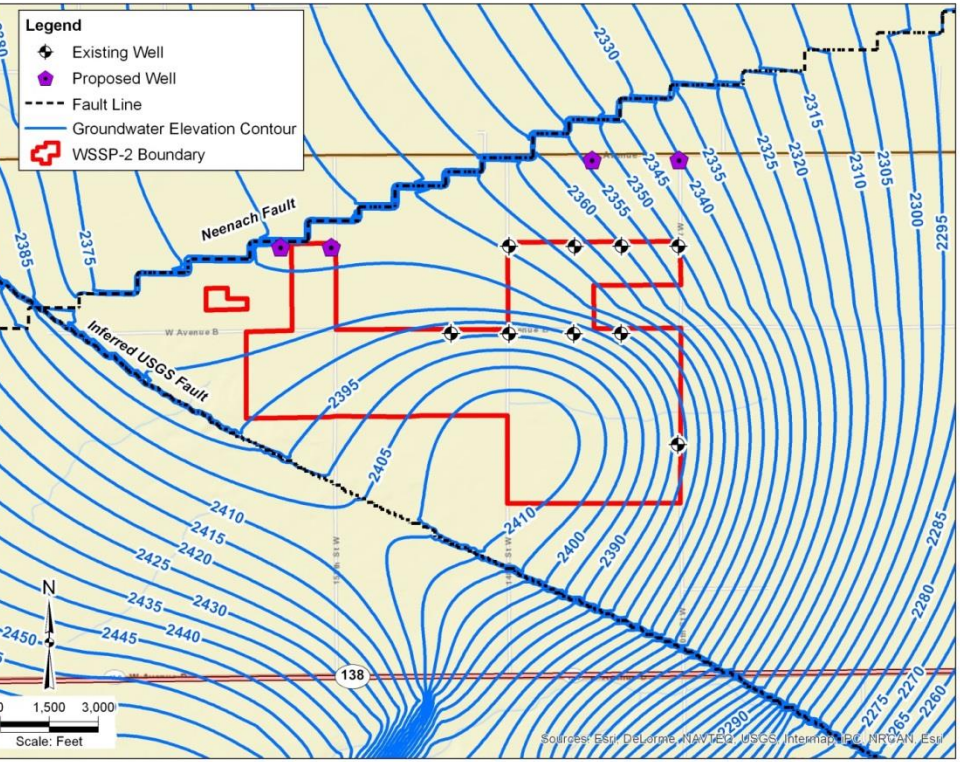


Turnouts with Above-Ground Piping

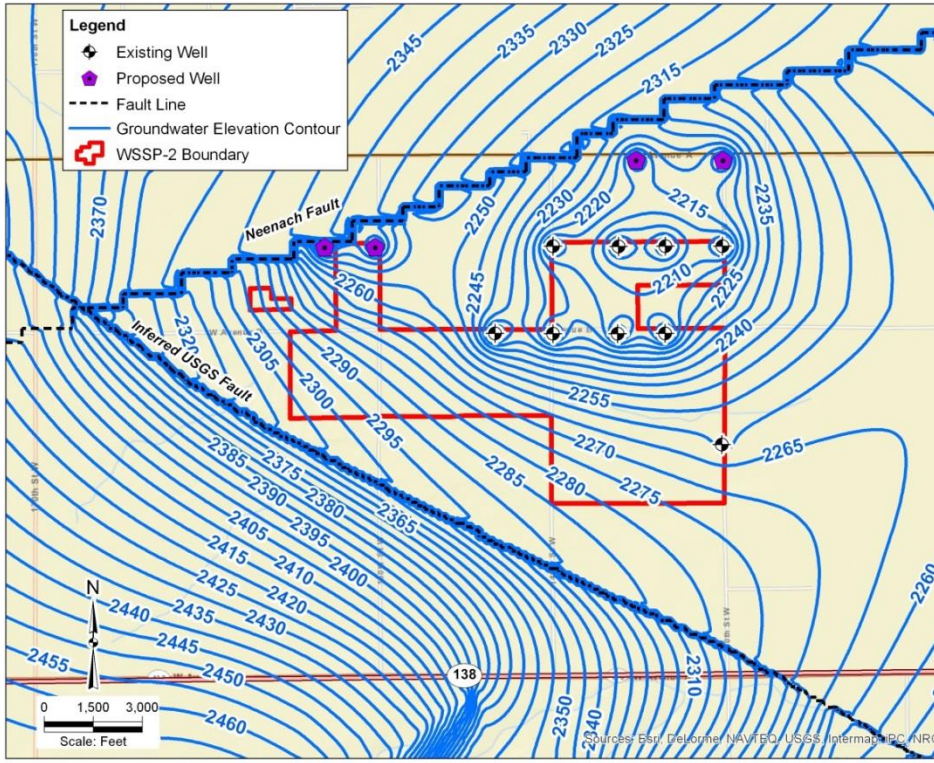
Low-berm Flooding of Agricultural Fields

Sub-regional Groundwater Model

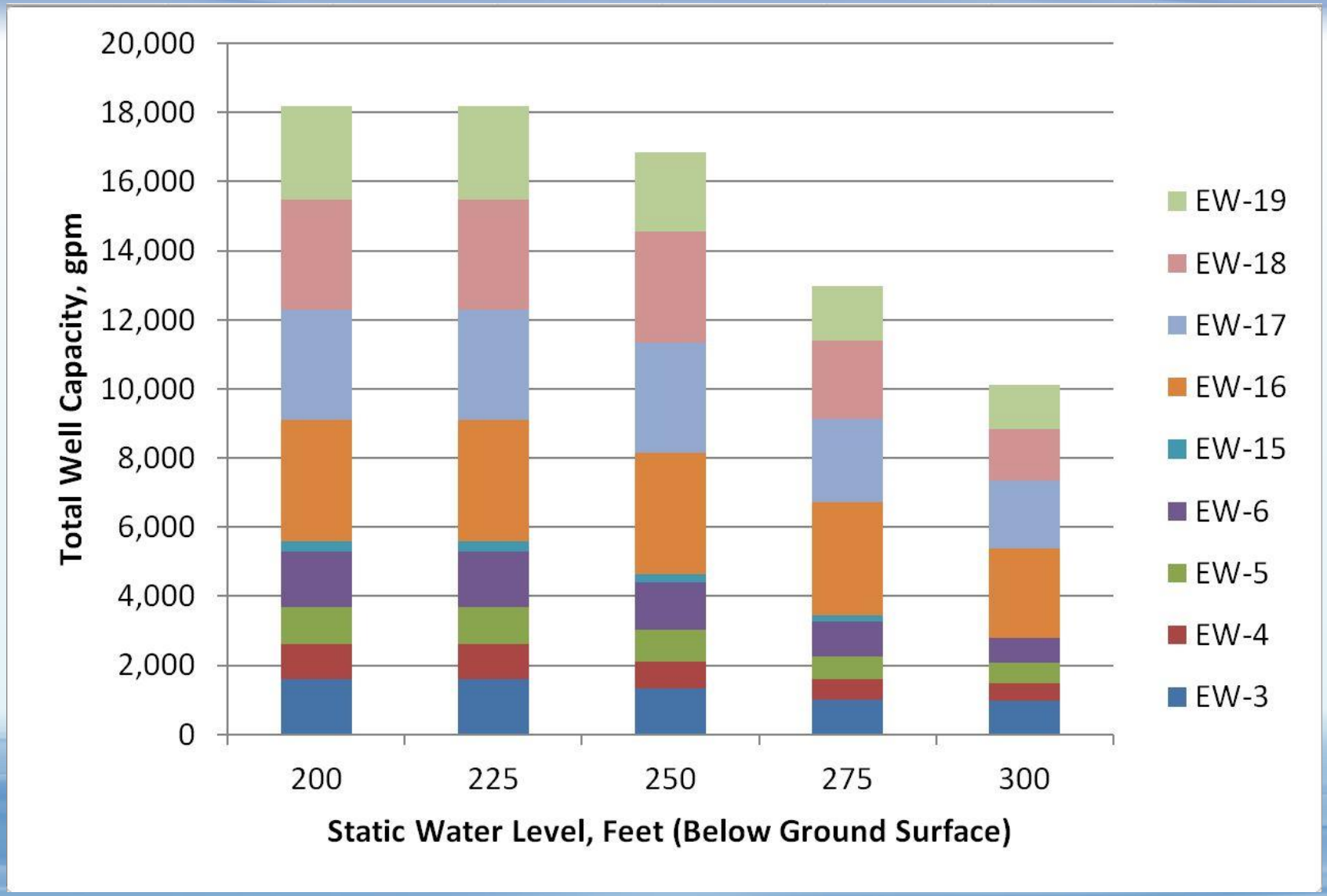
Maximum Mounding



Maximum Drawdown



Well Capacity – Varies with Static Water Level



Well Drilling

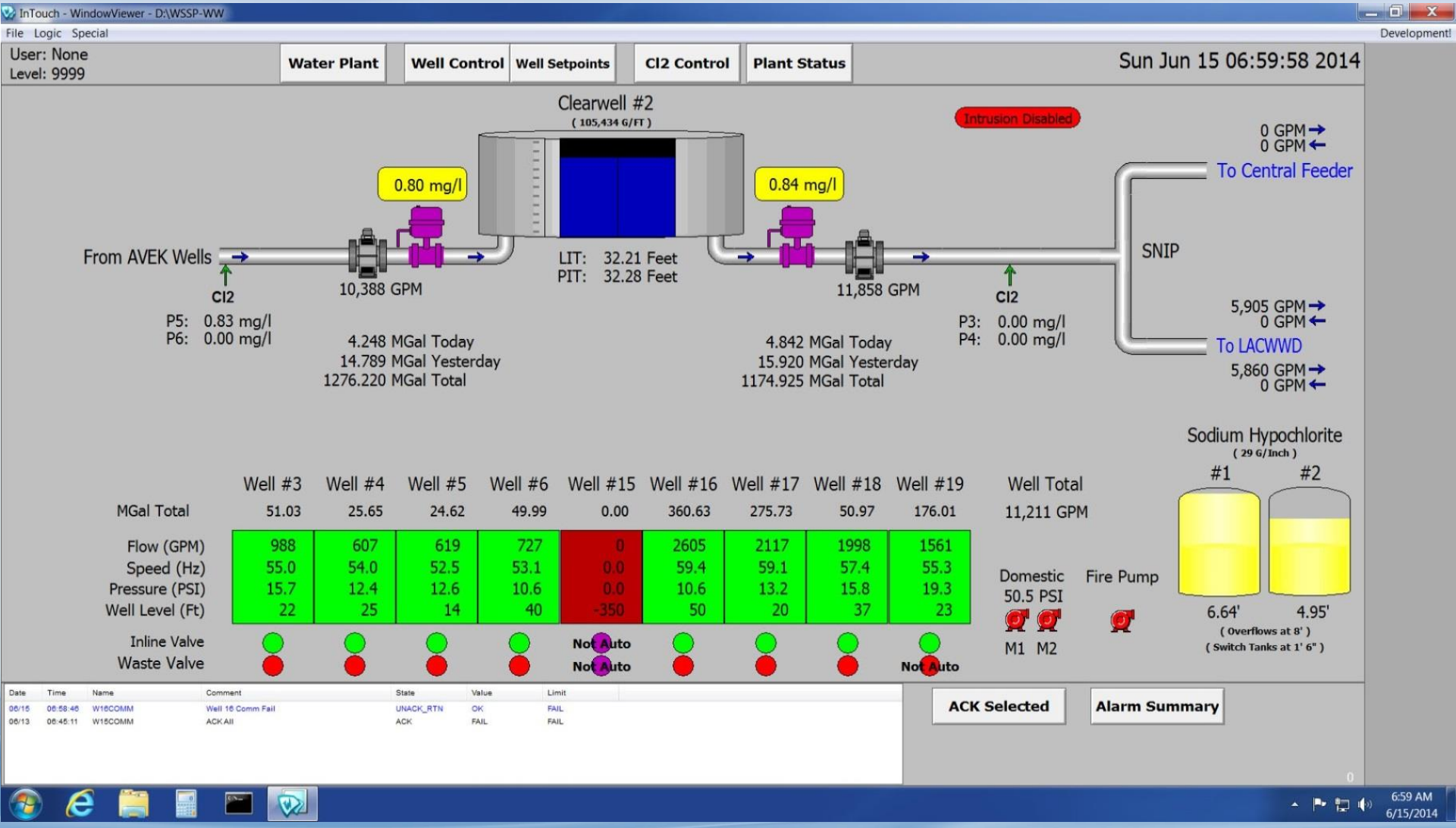
Extraction Wells: 50 to 400 HP

Construction in 2013

On-line January 2014

Chlorination System: Sized for 50 mgd

Control and Automation



2014 Results

- **Saved the Day during 2014 Drought!**
  - **Produced 15,000 Ac-Ft**
  - **Nearly 50% of 2014 supply**
- **Excellent water quality**
  - **Low distribution system THMs**

Q & A

Kennedy/Jenks Consultants

ANTELOPE VALLEY - EAST KERN WATER AGENCY
AVEK
ESTABLISHED 1959
A PUBLIC AGENCY