Strawberries: The effects of modifying irrigation methods for transplant establishment

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www.itrc.org/projects/jdwt.html

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moving water in new directions

Funding by:
California Strawberry Commission
California Department of Food & Agriculture
US Bureau of Reclamation – Mid Pacific Region
United Water Conservation District

Key Growers:
Ryan Harrison
David Peck
Jim Carter
James DuBois

Primary Objectives

- Keep strawberry transplants healthy
- Switch to drip irrigation as early as possible

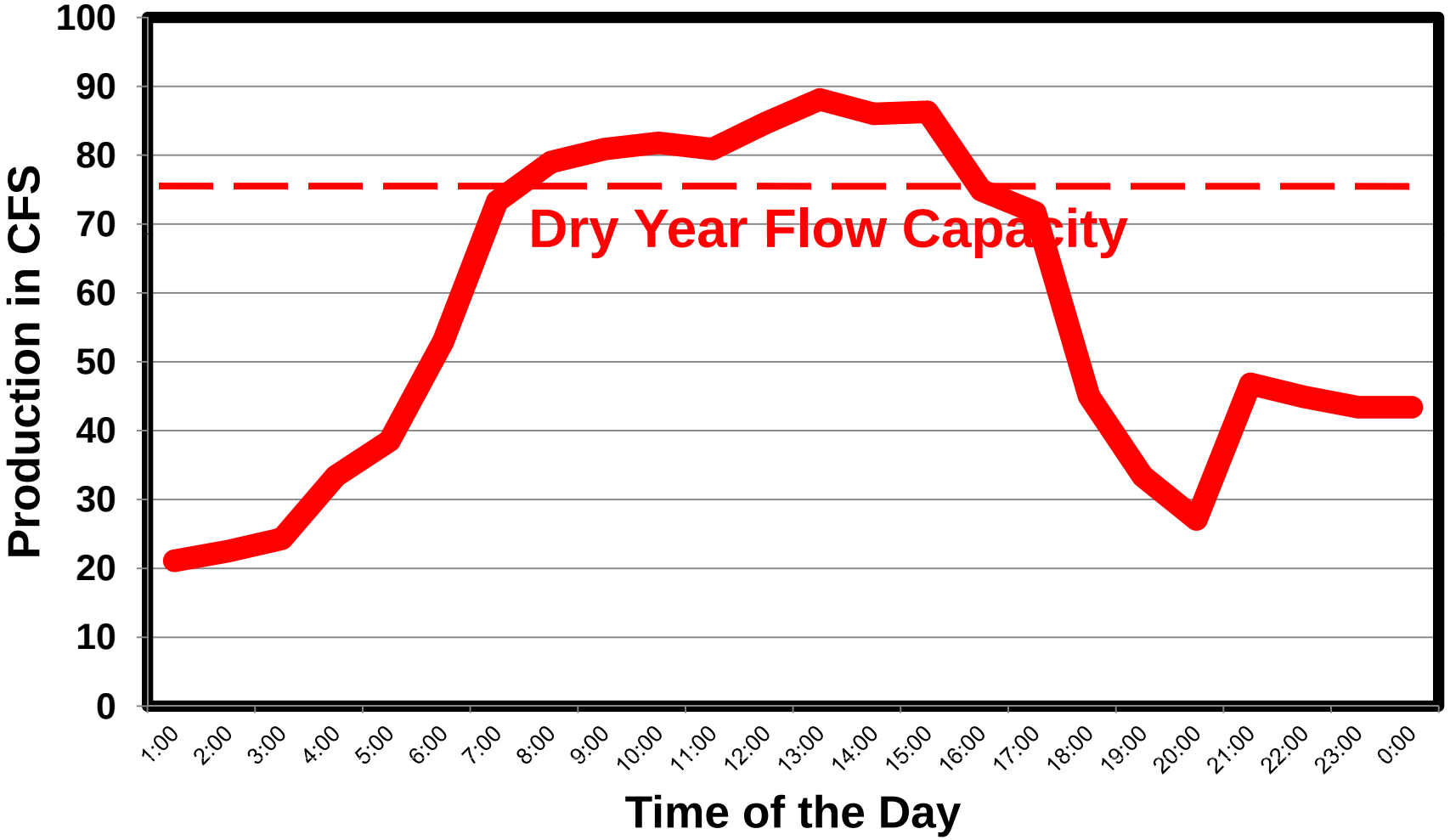
Primary Issues

- Salinity near the plant
- Soil moisture/nutrient management
- Santa Ana Winds (hot, dry east winds in Oct/Nov)

Problems with Sprinklers: Irrigation Runoff

United Water Conservation District

Problem with Capacity - Hourly Demand on October 23, 2008



Conventional Protocol

- Sprinkler Irrigation for about 6-8 weeks and then switch to Drip

Partial Sprinkler

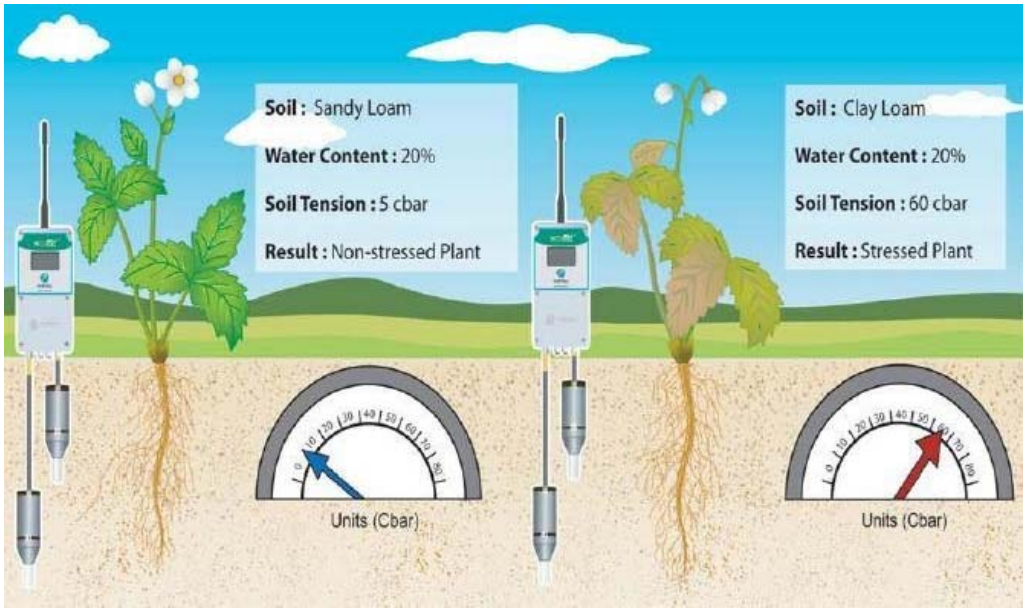
- Sprinkler Irrigate for “events”, then switch to Drip

Drip Only

- Start on Drip, stay on Drip

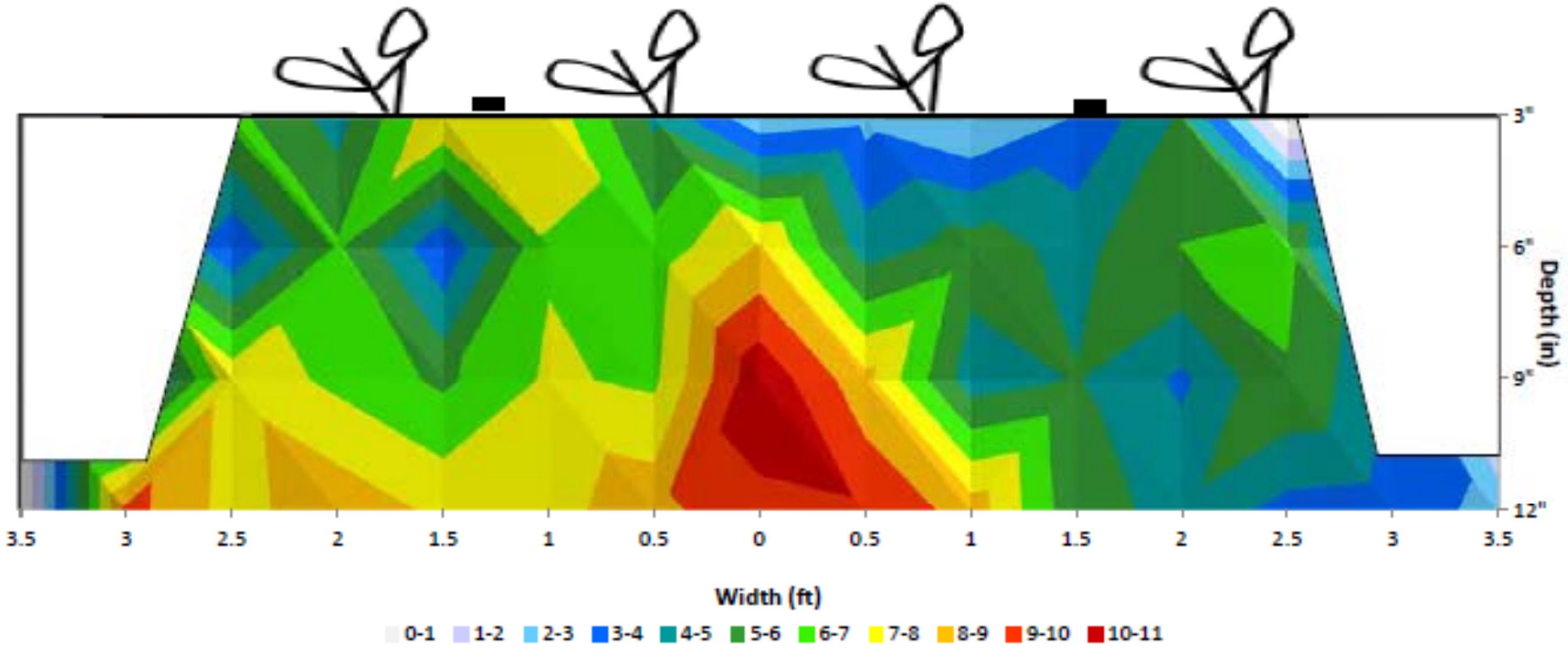
Salinity Decagon 5TE

Soil Moisture Sensors -Hortau

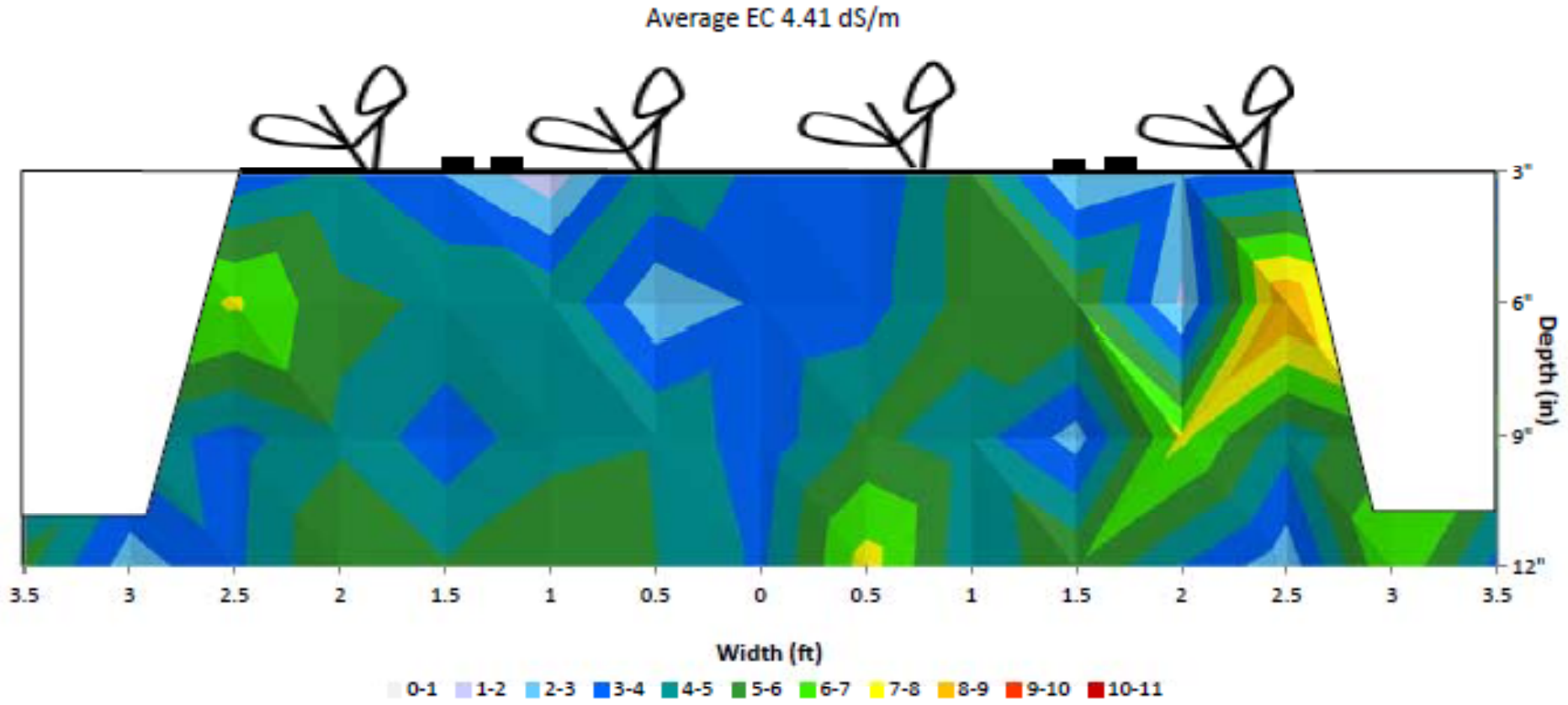


Manzanita Block 2 A Reduced Sprinkler - 2 Tape
EC (dS/m) 1/6/12

Average EC 5.9 dS/m

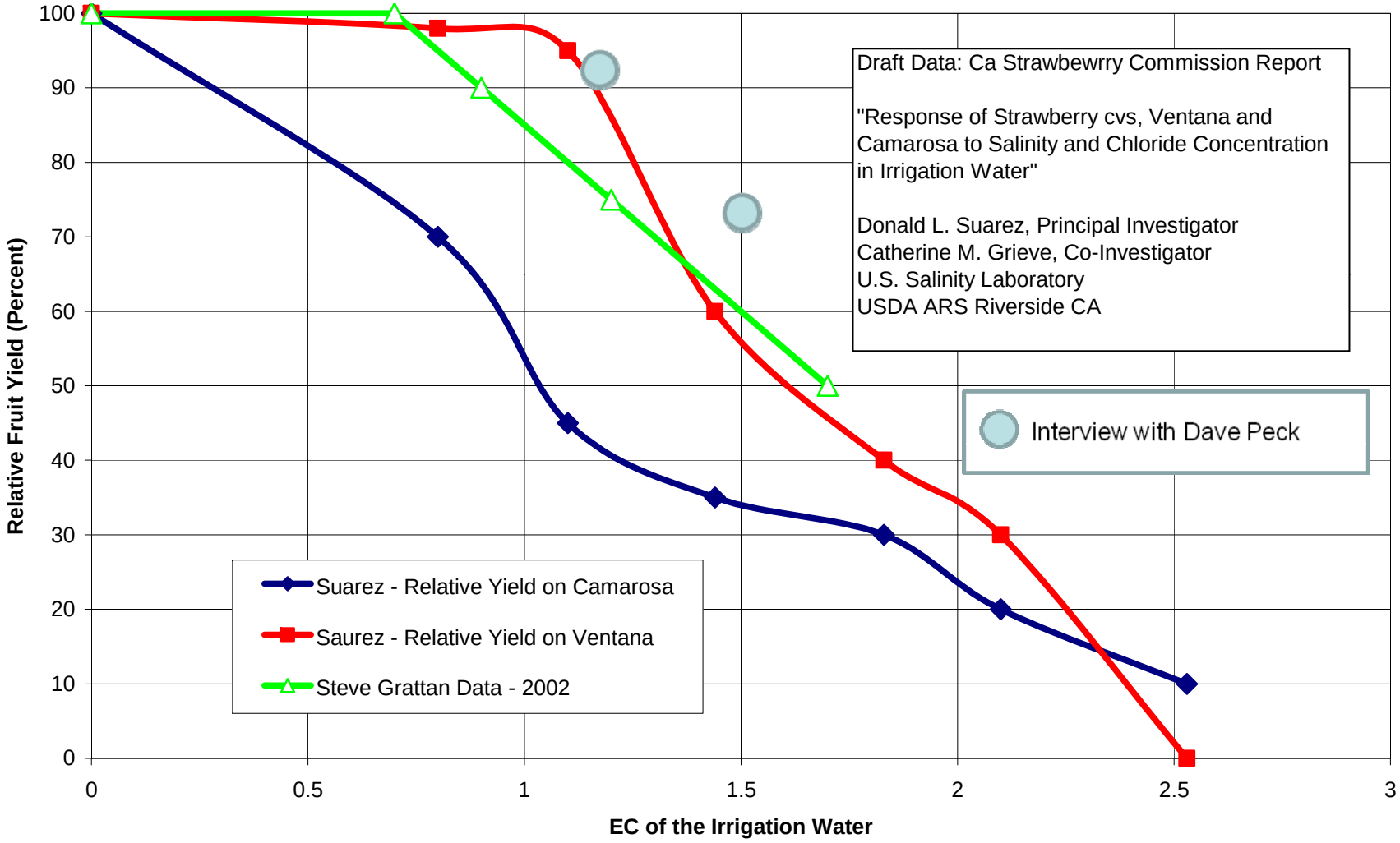


Manzanita Block 2 A Reduced Sprinkler - 4 Tape
EC (dS/m) - 2/25/12

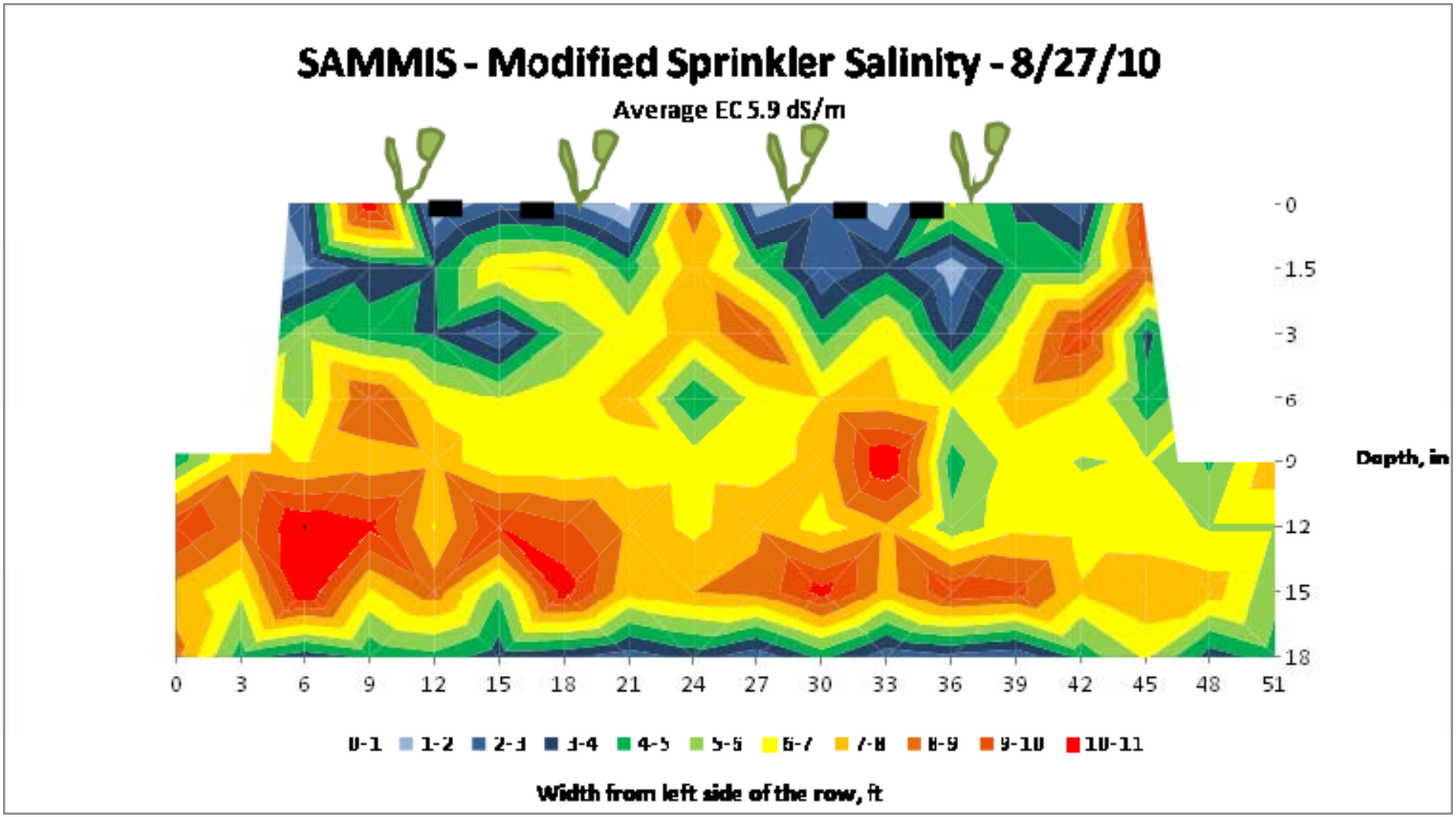


Note: - less salts in the root zone
- issue with short duration irrigations

Evaluate yield impact based on the water quality of the source water



Evaluate the Soil Salinity



Evaluate the salt and water distribution

2 Tapes – High Flow

4 Tapes – Low Flow

How water moves through a “wall”

- Fresh water moves “INTO” the potato slice
- Salty water moves “OUT OF” the potato slice

Impact of Salinity with Different Salts

20 dS/m NaCl

20 dS/m KSO4

10 dS/m NaCl

10 dS/m KSO4

5 dS/m NaCl

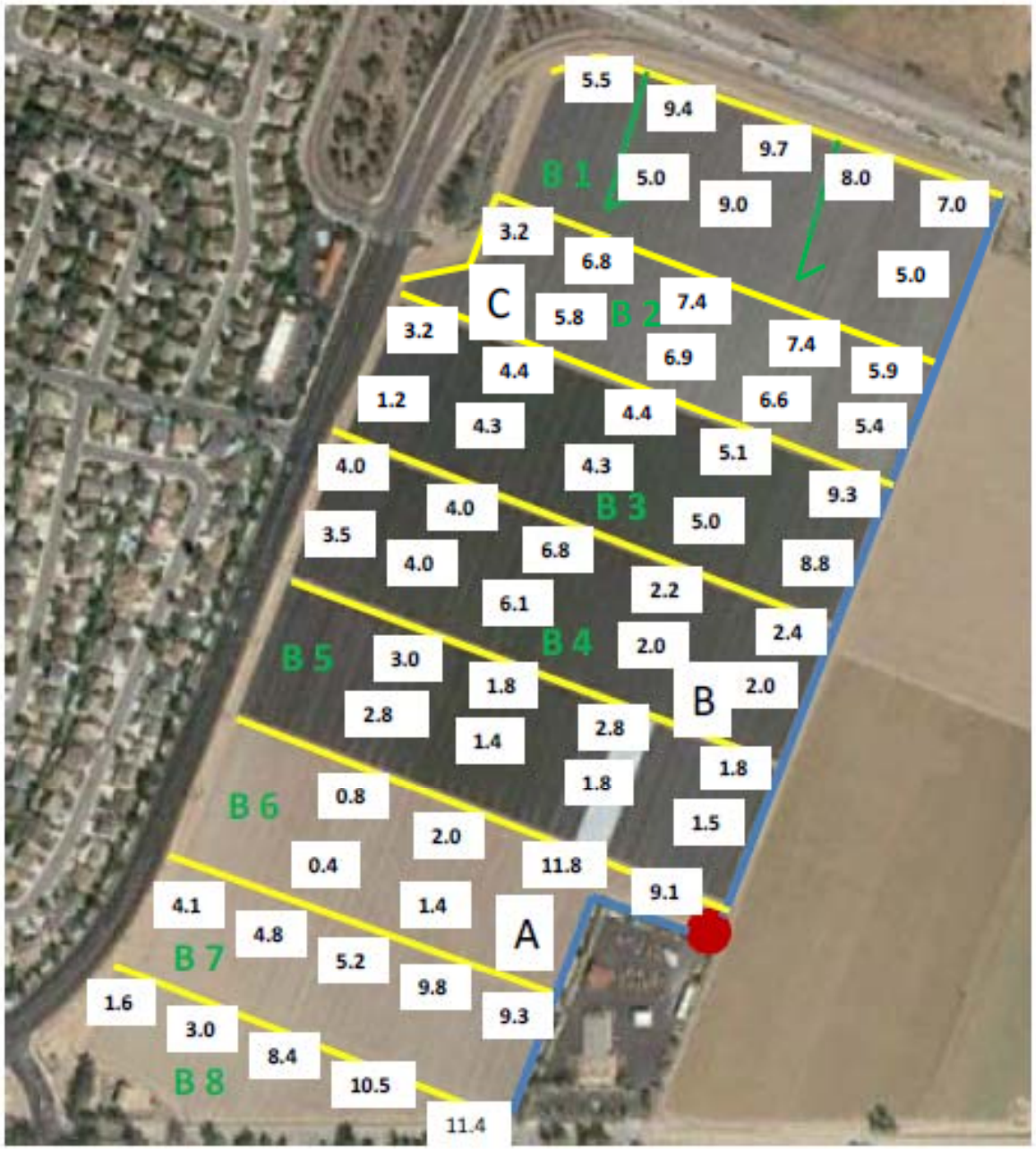
5 dS/m KSO4

0 dS/m NaCl added

0 dS/m KSO4 added

Key Point: Chloride salts are BAD

Evaluate the pressure distribution



Sammis

Contact: Ryan Harrison
Location: Camarillo, CA
Crop: Strawberries
Acreage: 86
Date: July 3, 2012

N

Legend

Pump & Filter Station

Mainline

Manifold (Layflat)

Laterals

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moving water in new directions

Need more information?

ITRC Website

www.itrc.org/projects/jdwt.html