

# *Dixon/Solano RCD Water Quality Coalition*



## **Irrigated Lands Program**

**Measurement & Management  
Of Water and Nitrates  
NOVEMBER 29, 2018**

# HOUSEKEEPING

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- Please Sign In!!!
- If you would like nitrogen self-certification CEU credit, **please take certificate at the end of the class & keep with your records**
  - Everyone who has become self-certified up to this point has until January 2021 to earn 3.0 hours CEUs.



# AGENDA

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- INTRODUCTION – Kelly Huff, Dixon/Solano Coalition
- MEASURING CROP WATER USE -  
Paul Lum, Solano Ag Water Conservation Committee
- IRRIGATION & SOIL HEALTH PRACTICES Liz Colby  
and Wendy Rash, USDA NRCS  
*\*\*Quick Break around 10:30*
- TESTING NITRATES / FINANCIAL & TECH  
SUPPORT – Amy King, Solano RCD

# Measurement & Management TOPIC

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- Irrigated Lands Program –
  - Accounting for nitrates in irrigation water
  - Future requirements for testing & reporting nitrate levels drinking water wells (2022)
- Water Conservation
- Water Rights
  - Direct Diversions Water Use Reporting – SB-88
  - Groundwater Sustainability Agencies



# Dixon/Solano Farm Reporting for 2018 Crop Year

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- Online System
- Login & Passwords will be sent soon
- Deadline for reporting February 15<sup>th</sup>
- Farm Evaluations not required for 2018, 2019 Crop Years
- Nitrogen Management Summary Reports for High Vulnerability Areas ONLY

# Current Surface Water Management Plans

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## Active High Priority Management Plans

- New – Selenastrum (Algae) Toxicity (Sept. 2015, February 2016, November 2016)
- Potential- Pyrethroids/Sediment Toxicity at Ulati Creek
- Ecoli at all sites

## Completed

- Pyrethroids / Sediment Toxicity at Z-Drain (deemed complete July 2017)
- **Chlorpyrifos in Ulati Creek**

# Sediment Toxicity / Pyrethroid Detections Ulatis Creek April & Aug 2018

**Pyrethroids –**

**Active Ingredients –** Esfenvalerate/Fenvalerate, **Lamda-Cyhalothrin**, Cypermethrin, **Bifenthrin**, Cyfluthrin

**Field Dissipation Half Life –** Half-life in soils ranges from 1-2 months. In aquatic sediment, months to years.

**Aquatic Toxicity –** Very high\*

**Management goal –** Retain fine sediments, reduce velocity and/or amount of tailwater especially post-application, vegetated filters



# Groundwater Requirements NOW

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- Field level nitrogen plans & reporting
- Accounting for nitrate in irrigation water in fertilizer applications
- Wellhead protection
- Backflow prevention
- Proper well abandonment



# Groundwater Requirements - SOON

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- Member testing of drinking water wells
- Coalition testing of trend wells
- Groundwater protection formulas and targets
- Regional Board expects that current nitrogen reporting will eventually lead to “acceptable crop specific applied/removed (A/R) ranges”
- Management Practice Effectiveness Program – will lead to recommended practices by crop & region.

# Great Resource! = <https://agmpep.com/>

SSJV MPEP | Southern San Joaquin Valley Management Practices Evaluation Program

## WELLHEAD PROTECTION & WELL MAINTENANCE

JANUARY 2018

Wellhead protection practices are to help prevent the movement of contaminants into a well. Unprotected wellheads can transmit contaminants from the surface into groundwater. This handout provides information about practices for wellhead protection and well maintenance.

### PREVENT SURFACE WATER FROM ENTERING THE WELLHEAD.

Practices include:

- Maintain well casings free of holes and cracks, and keep the casing anchored. You should not be able to move the casing by hand (Figure 1).
- Maintain watertight caps and plugs at all openings and access points to the well (Figure 2).
- Install air vents above the flood level with down-turned and screened "U" bends. (Figure 3).
- Place a seal at the top of the casing. Check the seal and replace it if it is disturbed.
- Maintain a watertight seal or gasket between the pump



**1** **CRACKED WELL CASING.** A cracked well casing may allow surface water and contaminants into the well. Consult a water quality professional, such as a licensed well driller, to repair or replace the cracked casing. Source: CA State Water Resources Control Board, [https://www.waterboards.ca.gov/gama/docs/wellowner\\_guide.pdf](https://www.waterboards.ca.gov/gama/docs/wellowner_guide.pdf).

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## ABANDONED WELLS AND INACTIVE WELLS

JANUARY 2018

Improperly abandoned or maintained wells can transmit contaminants from the surface into groundwater and can also be a safety hazard. This handout provides information about the destruction of abandoned wells and maintenance of inactive wells.

### ABANDONED WELL

A well is considered abandoned (or permanently inactive) if it has not been used for over one year and there is no intention to use the well again. All abandoned wells must be properly destroyed consistent with state law and county ordinances within a reasonable timeframe.

### ABANDONED WELL DESTRUCTION

Abandoned wells must be properly destroyed to protect groundwater from surface and subsurface contaminants and to eliminate potential physical hazards. Well destruction consists of the complete filling of the well according to state law and county ordinance. Contact your local county health department to determine what procedures and permitting are required. Generally, destruction of abandoned wells includes



**OPEN WELL CASING.** Improperly abandoned wells can transmit contaminants from the surface into groundwater and can also be a safety hazard to people and animals. This open well casing is an example of an abandoned well that has not been properly filled and sealed. Source: Groundwater Resources Association of California: <http://cart.grac.org/Abandoned-Wells-1?search=Abandoned%20Wells>.

Includes Calculators, crop specific information, posts latest information from research etc.



# RECOMMENDED PRACTICES FOR GROUNDWATER PROTECTION

- Test irrigation (ag & domestic wells) water and for nitrates
- Become familiar with the nitrogen use curve for your specific crops & maximize nitrogen use efficiency
- 4Rs - Right Source, Right Rate, Right Time, Right Place,

A Collaboration between   

## California Fertilization Guidelines

These guidelines have been written by scientists from the [University of California, Davis](#) with support from [CDFA-FREPP](#). The guidelines are based on research results from studies carried out in California and elsewhere. For an optimal fertilization program, site-specific information needs to be taken into account. A discussion about site-specific adjustments can be found [here](#).

Additional Information
<b>Soil Sampling</b>
Soil Test Sampling Instructions
Sampling for Soil Nitrate Determination
Soil Sampling in Orchards
<b>Plant Tissue Sampling</b>
Field Crops and Vegetables
Orchards and Vineyards
<b>Resources, Links</b>
<b>Nitrogen Partitioning and Seasonal Uptake Curves</b>
A Discussion about Site-

### Field crops and vegetables

- Alfalfa
- Barley
- Dry Beans
- Broccoli
- Carrot
- Cauliflower
- Celery
- Corn
- Cotton
- Lettuce
- Melons
- Onion
- Potato
- Rice
- Safflower

**Great Resource! = CDFA FREPP Guidelines**