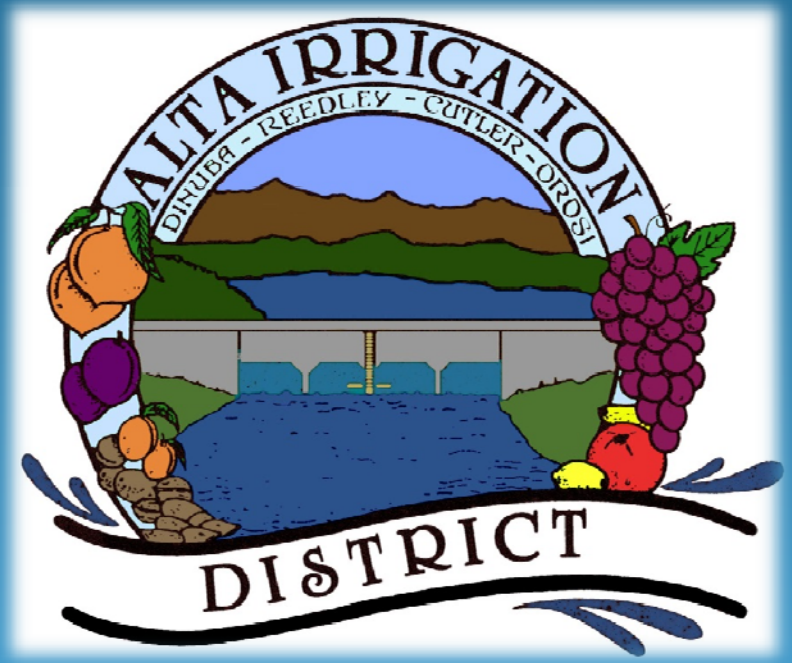
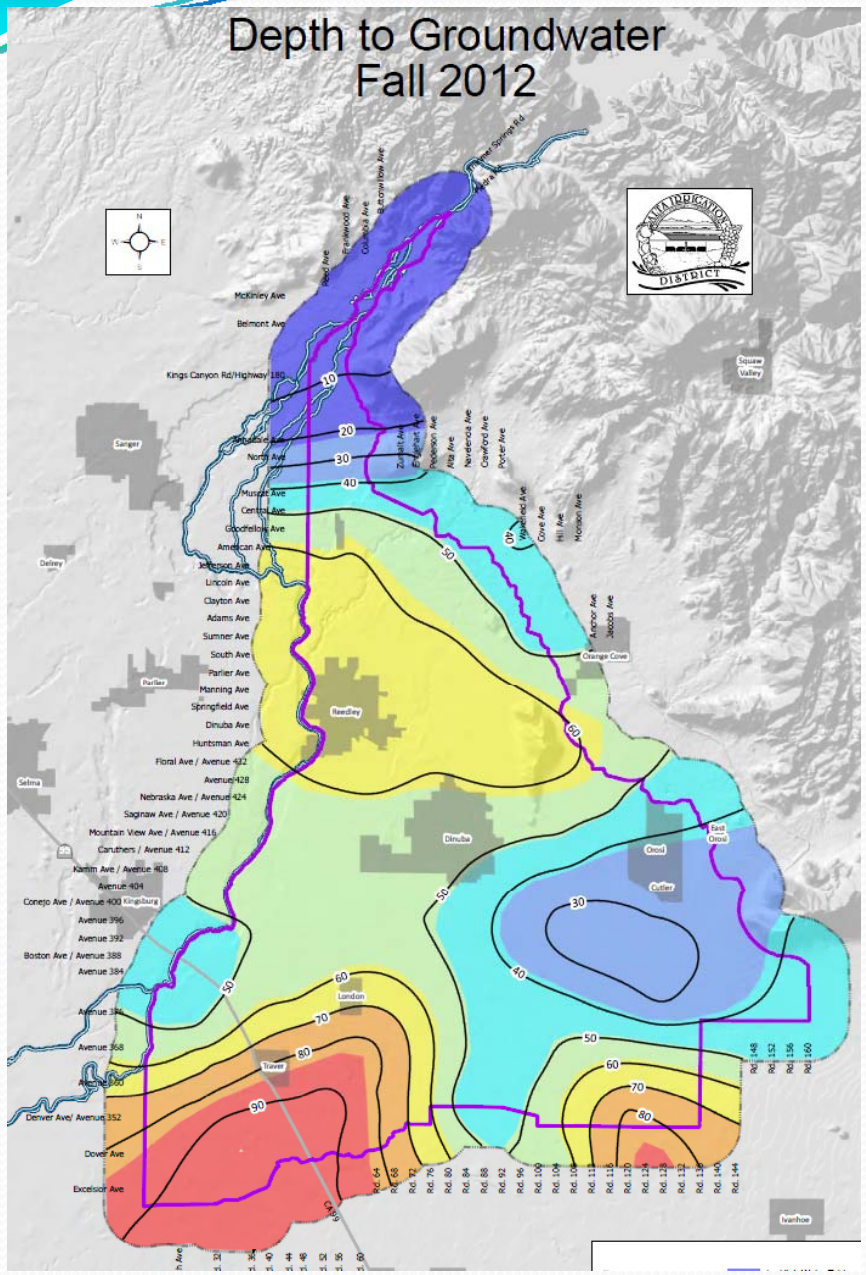
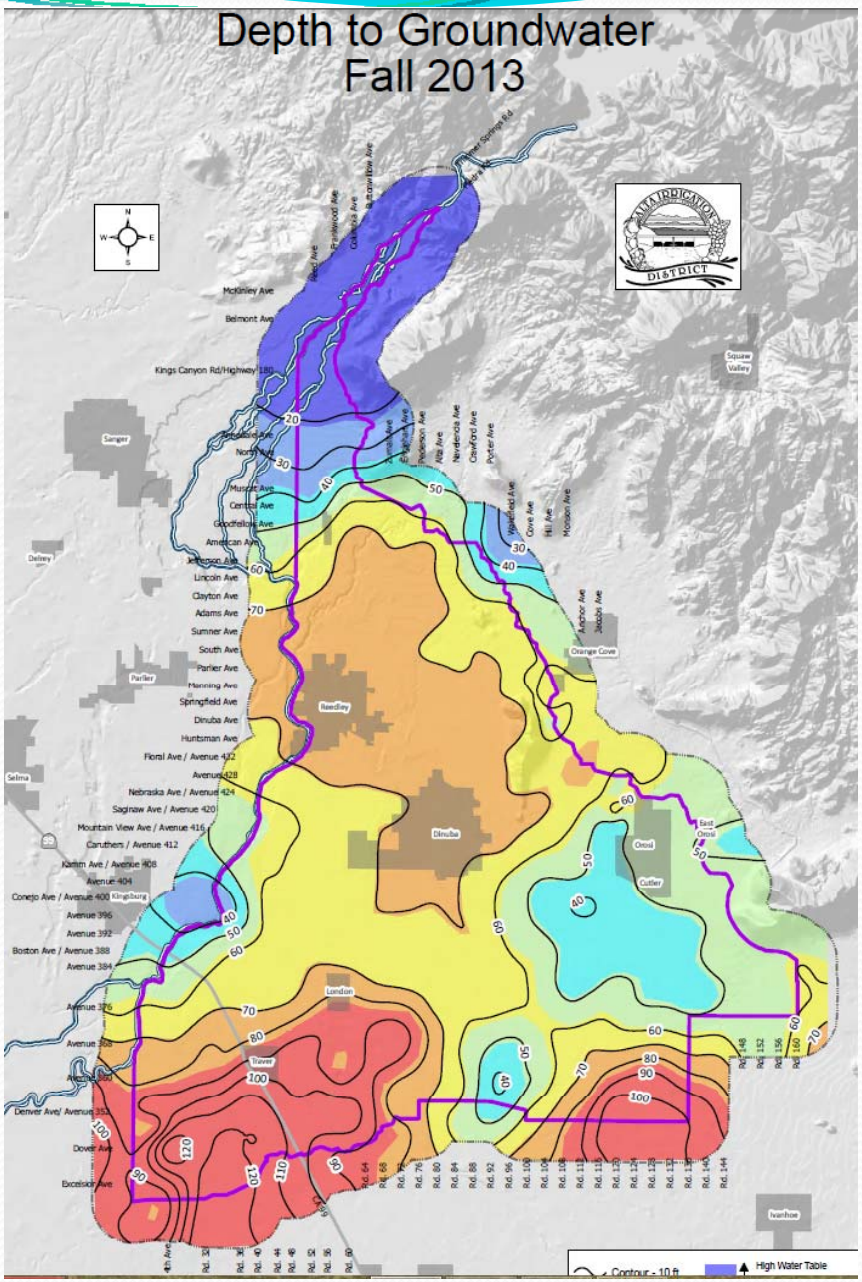
Expert Nitrate Panel



Chris M. Kapheim
General Manager
May 5, 2014

AID Groundwater Map





AID Nitrate Background

- Nitrate contamination is more prevalent in the easterly area
- Groundwater aquifers are less defined in the easterly area
- Heavier soil is predominate along the easterly area closer to the foothills

AID Groundwater Protection Impacts

- Shallow groundwater (less than 100 feet)
- Use of septic tanks in rural areas
- High concentration of small parcels with home sites
- Type of agricultural cropping patterns
- Type of farming practices

AID 2010 Crop Survey (acres)

- Citrus 13,386
- Deciduous 38,065
- Nut Trees 1,768
- Row Crops 25,252
- Vineyards 16,418
- Other 9,486
- Non Irrigated 24,925

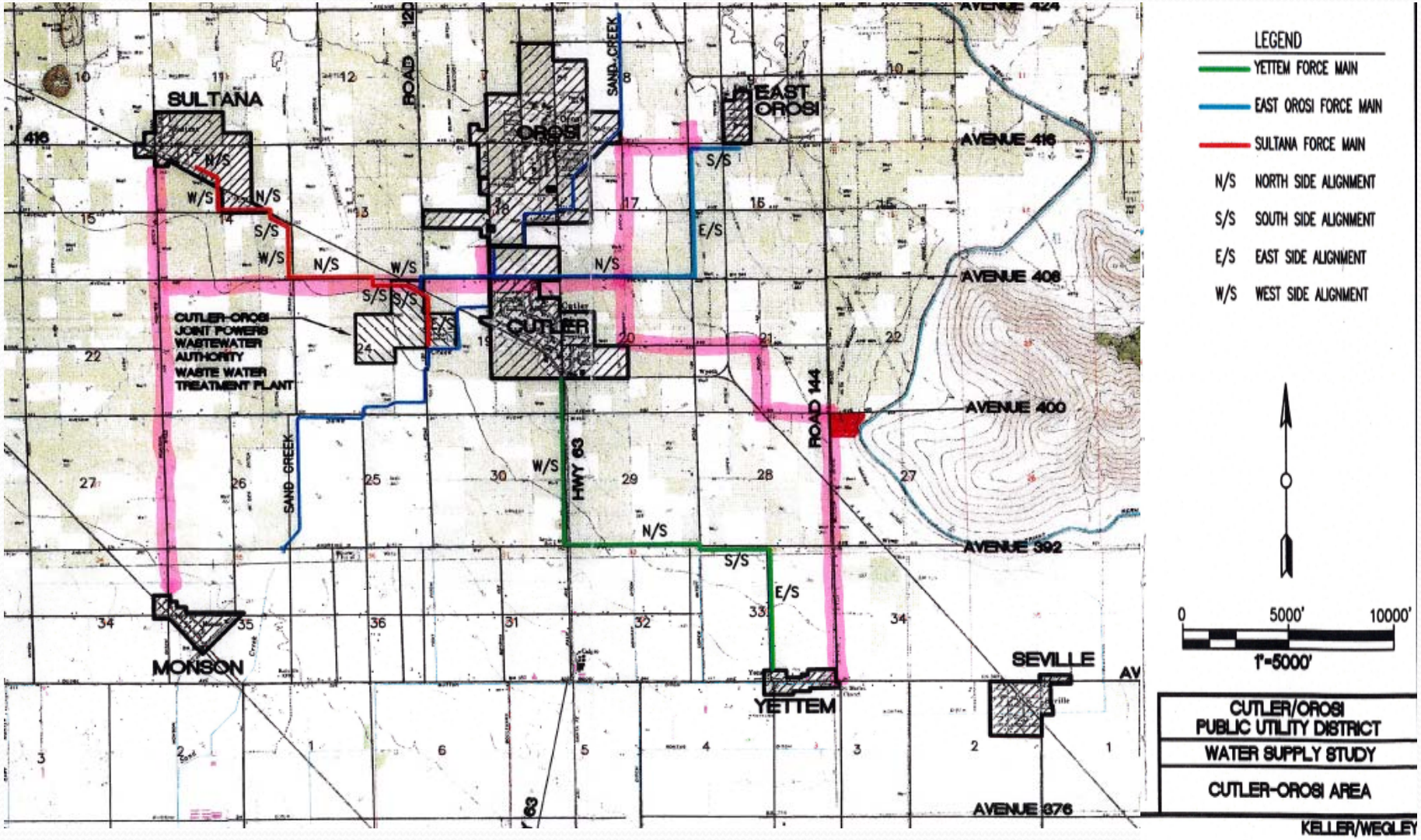
Application of Management Practices

- Most of the agriculture is furrow irrigated (approximately 80%)
- Citrus and grapes are moving to low volume irrigation
- Improperly abandoned wells
- Well construction standards & approval need to be updated
- Gravel packed wells being deepened into the drinking water strata can result in aquifer contamination

Regional Long-Term Solution

- Surface water treatment
  - Reduce groundwater pumping
  - Insure compliance with drinking water standards
  - Cost effective on a regional basis
    - Especially for disadvantaged or severely disadvantaged communities
- Blended water strategy (utilize wells & surface water)
  - Reduce cost
  - Alternate supply

Surface Water Treatment Area



Verification Measures

- Testing
  - Origin of nitrogen
    - Synthetic nitrogen fertilizer
    - Plant or animal source
    - Other
  - Holistic analysis and review
    - Cropping patterns
    - Water supplies and sources (surface and groundwater)
    - Historical uses

Verification Cont'd

- Monitoring Wells
  - Engineered for water depths and geology
  - Clustered at various depths
  - Well locations are part of a monitoring plan

Reporting

- Clarify sampling and testing:
  - Irrigated Lands Regulatory Program
  - Integrated Regional Water Management Plan
  - Water agency, county or city
  - Regional Groundwater Management Agency (pending)
- Coordination of data:
  - Local
  - Regional
  - State Partnership

Conclusion

- Focus on solutions to issues
  - Need for clean drinking water (surface water treatment)
  - Need for additional onsite testing (origin of contaminants)
  - Groundwater protection (best management practices)
- Re-evaluate regulatory mandates based on in-place solutions
  - Vulnerability assessments
  - Monitoring and reporting