Irrigated Lands Regulatory Program (ILRP)

Status of Nitrogen Management Plan Development
8 December 2014

Joe Karkoski, Program Manager
California Regional Water Quality Control Board
Central Valley Region
Important Dates

- December 2012 – ESJ Order Adopted
- April 2013 – Proposed Templates from Coalitions (“Group Option”)
Important Dates

- December 2013 - CDFA Task Force Final Report
- September 2014 – Expert Panel Report
- 2015? - State Board Decision on Eastern San Joaquin Order Petitions
Geographic Areas/Commodities Addressed by New WDRs

Sac River – Mar 2014
Sac Valley Rice – Mar 2014
Delta – Mar 2014
East San Joaquin – Dec 2012

Westside – Jan 2014
Westlands – Jan 2014
Tulare Lake – Sept 2013
Individual – June 2013
Nitrogen Cycle

Supply (Applied)

- Cover crops, manures, composts
- Irrigation water
- Commercial N fertilizers

Demand (Removed + Sequestered)

- Foliars
- Harvested nuts
- Husks, leaves, prunings removed from orchard

Loss

- Volatilization, denitrification from soil

Nitrogen

Stored

- Organic matter
- Mineralized N in soil
- Nitrate

Leaching

Kathy Kelley-Anderson et al: ANR Pub # 21623
Nitrogen Balance

Supply (Applied) = Demand (Removed + Sequestered) 
+ Loss (Leaching + Atmosphere + Runoff) 
+ ▲ Change in Storage (increase/decrease of N in soil)

[Expert Panel] ➔ Over time, change in storage should even out (some years N in soil is depleted, sometimes increases)

“Loss” = [Supply – Demand]
Grower Performance Standards

- Minimize waste discharge off-site to surface water
- Minimize percolation of waste to groundwater
- Minimize excess nutrient application relative to crop consumption
- Prevent pollution and nuisance
- Achieve/maintain water quality objectives and beneficial uses
- Protect wellheads from surface water intrusion
Nitrogen Management Plan (NMP)

- NMP is kept on farm and required of all growers
- Must be certified, if in high vulnerability area
- NMP Summary Report – summarize key information from previous year (not addressed yet)
- First deadlines – March 2015
Growers implement practices:
✓ Consistent with Plans
✓ Meet Performance Standards

Third-party management plans:
✓ Groundwater Quality

Third-party assessments:
✓ Groundwater Quality

Grower plans:
✓ Nitrogen Management

Grower reports:
✓ Farm Evaluations/Practices
✓ Nitrogen Management Summary Reports

Third-party assessments:
✓ Groundwater Quality

Water Quality Monitoring
✓ Management Practices Evaluation Program

Water Quality

Implement Management Practices

Collect Information

Communication and Joint Learning
Comparison of Recommendations

- Coalitions/Ag Recommended Nitrogen Management Plan (November 2014)
- California Dept. of Food and Agriculture – Nitrogen Tracking and Reporting Task Force
- State Water Board’s Agricultural Expert Panel
Comparison of Recommendations

- Key Similarities – tracked/collected
  - Crop Type and Location
  - Nitrogen applied (synthetic, organic, irrigation water)
  - Residual N in soil
  - Yield (expected/actual) – CDFA/Coalition
Comparison of Recommendations

- Key Differences – tracked/collected
  - Nitrogen Removed/Sequestered (CDFA/Expert Panel)
  - Irrigation management plan (Expert Panel)
  - Records of nitrogen and irrigation inputs/timing (Expert Panel)
  - Crop evapotranspiration (ET); Distribution Uniformity (Expert Panel)
  - List of Planned Improvements (Expert Panel)
# Nitrogen Management Plan Template

**1. Crop Year, (Harvested):**

**2. Member ID#:**

**3. Name:**

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>5. Crop</strong></td>
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<td><strong>6. Production Units</strong></td>
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<td><strong>7. Expected Yield [Units/Acre]</strong></td>
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<td><strong>8. N Needed [lbs N/acre]</strong></td>
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<td><strong>9. Acres</strong></td>
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<tr>
<td>Post Production Actuals</td>
<td>Available N in Manure (est)</td>
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<tr>
<td><strong>13. Actual Yield [Units/Acre]</strong></td>
<td>Available N in Compost (est)</td>
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<tr>
<td><strong>Total N [lbs N/acre]</strong></td>
<td><strong>16. Total N Applied [per acre]</strong></td>
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<tr>
<td><strong>N Removed [lbs N/acre]</strong></td>
<td><strong>Soil Nitrogen Credits (est)</strong></td>
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<td><strong>14. Notes:</strong></td>
<td>Available N carryover in soil</td>
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<td>N in irrigation water (annualized)</td>
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<td><strong>Total N Credits [lbs N per acre]</strong></td>
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<td><strong>Total N Available (Applications + Credits)</strong></td>
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**11. CERTIFIED BY:**

<table>
<thead>
<tr>
<th>Certification Method</th>
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<tr>
<td>Low Vulnerability Area, No Certification Needed</td>
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<tr>
<td>Self-Certified, approved training program attended</td>
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</table>

**DATE:**

- Self-Certified, UC or NRCS site recommendation
- "Nitrogen Management Plan Specialist"

**As defined in the Instructions**

**Not required at this time**
Next Steps

- Executive Officer provides final Nitrogen Management Plan Template to Coalitions by end of December
- Coalitions need to develop guidelines / definitions
- Coalitions to develop study plan to fill knowledge gaps
Questions ?