Presentation Agenda

- Project Description
- Project Benefits
- Key Project Parameters
- Infiltration Test Basin
- Soil Column Test Plan
123,000 customers served
17,000 – 23,000 AFY
Water Supplies

- Over-drafted Basin
- Groundwater
  - 38%
- Local Surface Water
  - 12%
- State Water Project
  - Surface Water
  - 50%
- Variable Availability

50% State Water Project Surface Water
Surface Spreading Recharge
- 2,000 – 4,000 AFY Recycled Water
- 4,000 – 9,000 AFY SWP Surface Water

Extraction Wells
- 7,500 – 12,000 AFY
Favorable Conditions

- Large, over-drafted basin
- Close access to recycled water (TDS < 490 mg/L)
- Ample undeveloped land
- Available diluent water
Achieve Multiple Benefits

- Meet Future Demand Needs
- Diversify Water Supply Portfolio
- Maximize SWP Water Supply
- Increase Reliability
- Provide More Local Control
Verification of Key Project Parameters

Recharge Capacity
- Recharge Rate?
- Required Recharge Basin Size

NDMA Removal
- 100 – 600 ng/L
- < 10 ng/L required

TOC Removal
- 0.5 / recycled water %
- Initial = 2.5 mg/L
Infiltration Test Basin

Shallow Boring Percolation Tests

3 ft/day

To-Scale Test Recharge Basin

??? ft/day
Preliminary Test Basin Results

Perc Rate (feet/day)

- 12/06/17
- 12/08/17
- 12/10/17
- 12/12/17
- 12/14/17
- 12/16/17
- 12/18/17
- 12/20/17
- 12/22/17
- 12/24/17
- 12/26/17
- 12/28/17
- 12/30/17
- 01/01/18
- 01/03/18
- 01/05/18
Potential Pathways for NDMA Reduction

Palmdale WRP

NDMA 100 – 600 ng/L
Need 90 – 98% Removal

Seasonal Storage Ponds (Photolysis)

90 – 99% Removal

Recharge Basins (Photolysis)

30% Removal

Surface Water Dilution

0 – 80% Dilution

Confirm with Soil Column Test

Soil Aquifer Treatment

50 – 99.9% Removal
Soil Column Test Plan

Title 22 Disinfected Recycled Water

Attenuation of Bulk Organic Matter, CECs, DBPs, and Microorganisms

Weekly water quality composite sampling

Vadose Column #1 Effluent

Vadose Column #2 Effluent

Attenuation of Bulk Organic Matter, CECs, DBPs, and Microorganisms

Weekly water quality composite sampling

vent
Testing Procedures

Week 1

4 7 10 13 16 19

Flushing

Tracer Test and Bio-Acclimation

Cycle #1: Flooded Period

Cycle #1: Drained Period

Cycle #2: Flooded Period

Cycle #2: Drained Period

Current Status
Soil Column Test Goals

- Show NDMA Reduction to < 10 ng/L
- Show TOC Reduction to 2.5 mg/L and hopefully lower
- Show 90% Removal of Contaminants of Concern
Questions?