Regional Recycled Water Program

Engineering and Operations Committee
Item 6b
September 10, 2018
Outline

- CA Recycled Water Regulatory Framework
- Demonstration Project Activities
  - Regulatory Collaboration
  - Testing Approach
  - Independent Scientific Advisory Panel
  - Construction Status
- Full-Scale Program Planning
California Recycled Water Regulations

Non-Potable Reuse
Irrigation
Industrial Uses
2000

Indirect Potable Reuse
Groundwater Replenishment
2014

Indirect Potable Reuse
Reservoir Water Augmentation
2018

Direct Potable Reuse
Raw Water Augmentation
2023/TBD

Increasing requirements for public health protection
Potential Full Program (up to 150 MGD)

- JWPCP
- Rio Hondo Spreading Grounds
- Santa Fe Spreading Grounds
- OC Spreading Grounds
- Regional Board 4
  - Los Angeles
- Regional Board 8
  - Santa Ana

Sources: Esri, USGS, NOAA
Regulatory Collaboration

2016
- Program Introduction
- AWT Demo Process Design

2017
- Prelim. Groundwater Assessments
- MBR Technology Acceptance

2018
- Demonstration Testing and Monitoring Plan – Workshop (Aug 9)

2019
- Field Tour of Demonstration Plant
- Baseline Testing Data Review
MBR Process at Demonstration Plant

- Fine Screening
- Aeration Basin
- Nitrification
- Anoxic Basin
- Denitrification
- Membrane Modules
- Filtration

Water flow

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Growing knowledge base from national and international research on pathogen removal in MBR systems

Australia’s MBR validation protocol outlines 3-tiered approach to achieve pathogen reduction credit

California regulators concur with Metropolitan’s proposed MBR testing approach utilizing this protocol
Final test plan to be submitted to regulators in early October for approval by end of 2018

Testing anticipated to begin early 2019

- **Pre-testing**
  - Equipment Testing and Process Acclimation (3 months)

- **Phase 1**
  - Baseline Performance Testing (4 months)

- **Phase 2**
  - Challenge Testing and Evaluation (8 months)

Additional testing for process optimization and full-scale design criteria to follow
Demonstration Testing and Monitoring
Laboratory Analysis
Independent Scientific Advisory Panel

Title 22 Regulations require independent panel of experts to review alternative approaches for meeting existing regulations (e.g., application of Membrane Bioreactor)

National Water Research Institute commissioned to secure panel for demonstration project

Panel will help guide demonstration project

- Testing and Monitoring Plan
- Water quality and operational data
- MBR Technology Acceptance report
- Stakeholder engagement
Focus Areas/Panel Feedback

**Process Technology**
- Testing Approach
- Operational Criteria

**Monitoring and Analysis**
- Monitoring Frequency
- Analytical Methodology

**Source Control and Brine Mgmt**
- Source Assessments
- Discharge Requirements
Independent Scientific Advisory Panel
Workshop Report

Final ISAP report available by end of Sept 2018
Demonstration Plant Construction
Current Status and Schedule

- Construction approximately 65% complete
- Complete construction – December 2018
- Commence start-up and operation – January 2019
Construction Site Overview
Construction Site Overview
Electrical Building
Full-Scale Program Planning

- Conceptual planning and phasing evaluation
- Groundwater modeling
- Source control assessments and nitrogen management studies
- Institutional and financial arrangements
- Public outreach planning efforts
## Schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>2018</th>
<th>2019</th>
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<tr>
<td>Demonstration Plant</td>
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<td>Conceptual Planning Studies Report</td>
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<td>Assessment of IRP, Rates, and Terms</td>
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<td>Board Workshops on RRWP</td>
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### Progress Indicators:
- **Construction**: Red
- **Operations/Testing**: Purple
- **Studies**: Blue
- **Other**: Cyan
- **Board Workshops**: Green
- **Completion**: Yellow

*E&O Committee*  
*Item 6b, Slide 23*  
*September 10, 2018*
www.mwdh2o.com/RRWP
MBR Equipment
MBR Equipment (cont’d)
RO Equipment
UV/AOP Equipment
Chemical Tank Farm