Pure Water Project Las Virgenes-Triunfo: Seasonal Imbalance and Facility Sizing

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Agenda

1. Project Background
2. Seasonal Imbalance
3. Facility Sizing
4. Acknowledgements and Questions
Project Background

MWH, now part of Stantec delivered the Recycled Water Plan of Action and Basis of Design Reports culminating in 2016

Key Project Goals

• Beneficially reuse 100% of the JPA’s Water
• Stop discharging to Malibu Creek
• Increase Reliability
• Address Seasonal Imbalance
Seasonal Imbalance
Seasonal imbalance between supply and demand

Recycled Water Supply and Demand

Total RW Sold (Monthly Average) (AF)

RW Produced (Exclusive of all potable supplements) (AF)
Seasonal imbalance between supply and demand

Recycled Water Supply and Demand

- RW Produced (Exclusive of all potable supplements) (AF)
- Total RW Sold (Monthly Average) (AF)

Volume (AF per month)

Deficit = New Demands

RW Surplus

RW Surplus > Deficit = New Demands

Storage
RW Storage vs. Indirect Potable Reuse

A new reservoir...

Encino Reservoir?

Las Virgenes Reservoir...
<table>
<thead>
<tr>
<th>RW Storage</th>
<th>vs.</th>
<th>Indirect Potable Reuse</th>
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<tbody>
<tr>
<td>Requires new storage to be built</td>
<td>Allows JPA to use existing facility for storage</td>
<td></td>
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<tr>
<td>Additional Demand would need to be identified</td>
<td>Created a potable demand for treated water</td>
<td></td>
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<tr>
<td>Addresses storage in recycled water system only</td>
<td>Addresses storage in potable and recycled systems</td>
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Indirect Potable Reuse using Surface Water Augmentation

- Facilities that need to be properly sized in order to capture all flow that may go to Malibu Creek.
  - Pipelines
  - Pump Stations
  - Reservoir (Operation Strategy)
  - AWT Facility
Facility Sizing
Volume Drivers (Reservoir Sizing)

- Adequate size to address seasonal imbalance, or ability to fill and draw reservoir simultaneously
- Adequate size to achieve required detention time

Flow Rate Drivers (AWT Sizing)

- Staying out of Malibu Creek
- AWT must be sized to capture at least 95% of historical flows
Reservoir Sizing
Historical Surplus Recycled Water

- Confirmed reservoir size is adequate for storage
- Recommended pursuing continuous fill draw for operational flexibility
AWT Sizing
Calculating Daily Surplus

Las Virgenes Reservoir Capture Rate

Percent of Surplus Water Captured

Flow (MGD)

0 2 4 6 8 10 12
AWT Sizing
Additional Operational Tools

- Smaller Reservoirs within the system to store RW temporarily
- Spray fields to add Recycled Water Demand
- Ability to Discharge AWT Plant to the Sewer
- Conservative Reservoir Management to ensure adequate capacity
- Storage at the AWT
Acknowledgements

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Thank you!

Questions?
Reservoir Sizing

- When sizing storage and treatment, projections for future wastewater generation were inconsistent with current trend.
Reservoir Sizing

Difference between projected and observed flows roughly 2.5 MGD in 2015