### SmartBall Inspection of Oxnard-Santa Rosa Feeder

Purveyor Managers Meeting January 23, 2025





## Agenda

Calleguas Potable Water System
Condition Assessment of Bar-Wrapped Pipe (AWWA C303)
System Modifications
Smart Ball Inspection (OSR 1 & 2)

2:4/ CCT/ 8/2024

### Calleguas System



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#### **Pipe Materials**

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Smith Road Large Smith Road Small

- Prestressed Concrete Cylinder Pipe: 26 miles
- Welded Steel Pipe: 31 miles
- Bar-Wrapped Pipe: 70 miles

None: 1 Ventura County Water Works District No. 17 is served through City of Simir Valley. 2 Port Insereme Water Agency (PHW) is annexit through City of Conrand. The service area boundary for PHWA is off the Sgure 3. The service area boundary for Italier Ranch Matual Water Company is not above. 4. Specific manipulation HGL and deep capacity select area per around training.



Prestressed Concrete Cylinder Pipe High-strength concrete core Steel cylinder High-tensile prestressing wire

#### Welded Steel Pipe

- Thick steel cylinder
- Lined and coated with mortar





#### Bar-Wrapped Pipe

- Steel-cylinder can
- Helically wound reinforcement bar
- Mortar lined and coated



#### Condition Assessment of Bar-Wrapped Concrete Cylinder Pipe

#### Phased approach

Base Method – low-cost, generally non-invasive methods *Corrosion survey Close-interval survey Leak survey (Smart Ball Tool)* 

Internal Visual Inspection High-Resolution Assessment Exterior spot-check

### **Corrosion Surveys**

Corrosion surveys investigate the corrosivity of the soil Typically performed during the design of the pipeline



#### Close Interval Surveys

- Pipe-to-soil survey – potential readings between the pipeline and electrode.

- Cell-to-cell survey – readings between electrodes above pipeline.

- In both cases, electrode needs to make contact with the soil.







# Leak Detection of OSR 1 and 2

Activities in Advance of Inspection:

- Identify locations for tool insertion and extraction

- Make system modifications to allow for insertion and extraction

- Coordination with purveyors due to planned temporary meter station outage

- Create demand to meet min/maximum flow

- Lower water level in Springville Reservoir in advance of inspection activity





# System Modifications

-4" air-vac pipe-Vault-roof slab

### Leak Detection Survey

In-pipe leak detectors "listen" for leaks as they are transported by water along a pipeline.

- Tool is inserted into a pipeline while in service
- Requires access port for insertion and extraction of tool
- Neutrally buoyant tool flows along centerline
- Min and max flow velocities are required





### Leak Detection Survey





## Insertion Location







# Extraction Location







Table 2.1: SmartBall Receiver Tracking Locations					
Tracking Location Number	Distance from Insertion [feet]	SmartBall Passage Time [hh:mm:ss]	Location Description	GPS Coordinates	
TL #1	0	12:50:44 PM	Vault STA 239+00 (Insertion)	34.239029, -118.900064	
TL #2	2,530	1:27:44 PM	MH & ARV STA 264+26	34.238098, -118.908331	
TL #3	4,215	1:53:13 PM	Vault STA 281+00	34.237510, -118.913862	
TL #4	6,326	2:23:01 PM	Blowoff STA 302+00	34.236833, -118.920677	
TL #5	7,906	2:44:26 PM	MH & ARV STA 317+75	34.241001, -118.920881	
TL #6	9,138	3:00:47 PM	MH & ARV STA 330+00	34.240935, -118.924954	
TL #7	11,121	3:26:24 PM	Blowoff STA 349+85	34.241422, -118.931471	



Figure 2.5: Tracking Location Positional Data for the Inspection

#### Table 1.1: SmartBall Inspection Details and Results

Pipeline Name		39-inch Oxnard - Santa Rosa Feeder Units 1 & 2		
Pipe Material:		Concrete Cylinder Pipe		
Diameter of Pipe:		39 inches		
Product:		Potable Water		
Inspection Start Location:		Vault STA 239+00 (Insertion/TL #1)		
Inspection End Location:		Vault STA 451+50 (Extraction/TL #10)		
Total Length Inspected:		21,287 feet		
Duration of the Inspection:		4 hours, 58 minutes		
Average SmartBall Velocity:		1.2 feet/second		
Total Number of Leaks:	0			
<b>Total Number of Static Air Pocket Events:</b>				



# Questions?