



CALLEGUAS' WATER QUALITY AND DEMAND BALANCE

CALLEGUAS WATER QUALITY PROGRAM

Source Water Monitoring

- Lake Bard
- Metropolitan Water District
- Los Posas Wellfield

Distribution System Monitoring

- Reservoirs
- TCR Sites
- DBP Sites
- Nitrification sites
- General Sites

Salinity Management Pipeline

- Effluent (Surfside)
- Ocean Sites
- Dischargers

REGULATORY GROUP



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DISTRIBUTION SYSTEM MONITORING

- Nine treated water reservoirs throughout the distribution system.
- Two clearwells at the LBWFP.
- The reservoirs provide balancing storage to the pipelines to meet fluctuations in demand.
- The treated water reservoirs, located in the communities of Camarillo, Lake Sherwood, Moorpark, Newbury Park, Oak Park, Simi Valley, and Thousand Oaks provide Calleguas with approximately 65 million gallons of storage.
- Each reservoir has its own operational challenges.



Sherwood Reservoir



Lindero Reservoir (4 MG)



Sherwood Reservoir (3.2 MG)



Newbury Park Reservoir (3.8 MG)



Thousand Oaks Reservoir (7 MG)



Grimes Canyon Reservoir (5 MG)



Westlake Tank Reservoir (5 MG)



Springville Reservoir (18 MG)



Conejo Reservoir (5 MG)



Clearwell Reservoirs (8 MG)

CALLEGUAS' RESERVOIRS

RESERVOIRS DISADVANTAGES

- Every tank is unique.
- Hydraulically challenged – not all tanks are able to be completely exhausted.
- Fire flow is a seasonal consideration.
- Clearwells are serpentine flow – increases detention time.
- No mixers in reservoirs



Clearwells

RESERVOIRS ADVANTAGES

- Separate tanks at some sites - one can be OOS (Thousand Oaks, Springville).
- Some tanks have low operating levels - pipes.
- Each tank is unique.



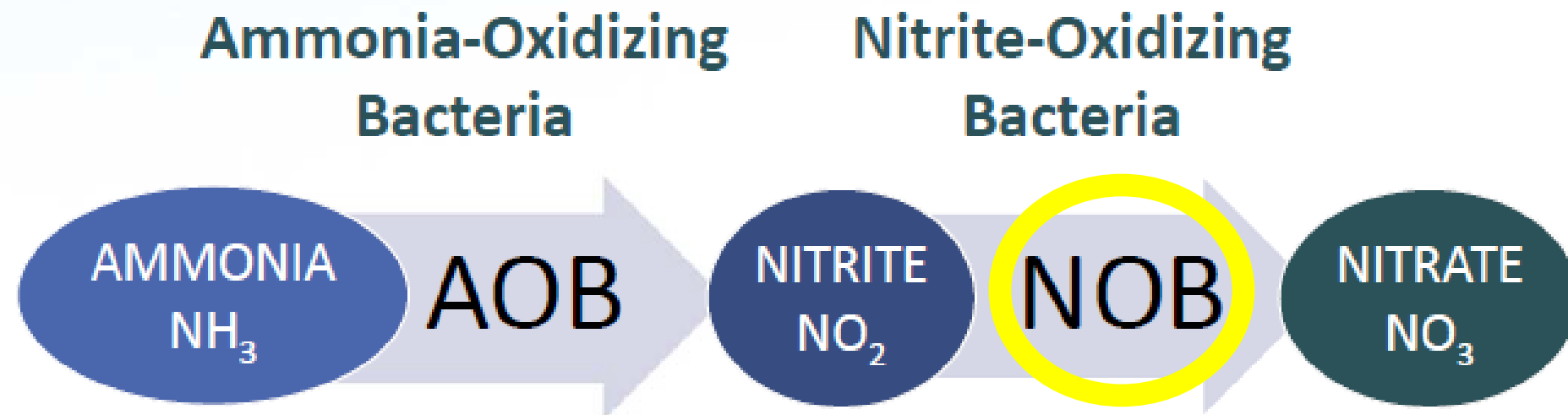
Thousand Oaks Tanks

WATER QUALITY CHALLENGES ASSOCIATED WITH LOW DEMAND

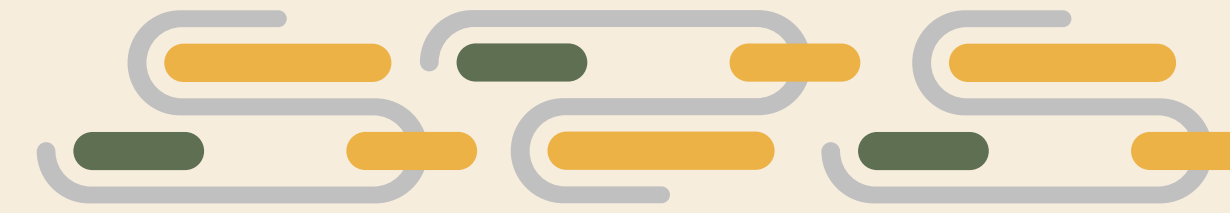
- Increased Disinfection By Products
 - *Metropolitan April 8 TTHM report :*
 - *Annual is 18 ug/L*
 - *Four Week is 35 ug/L*
 - *Calleguas April 8 Sampling:*
 - *Range was 17 -23 ug/L*
- Loss of chloramine residual
- Nitrification

MICROBIOLOGY OF NITRIFICATION

- Nitrification is a dynamic two-step microbiological process
- Nitrifying bacteria use inorganic substrates as energy sources to produce organic cell matter



NITRIFICATION

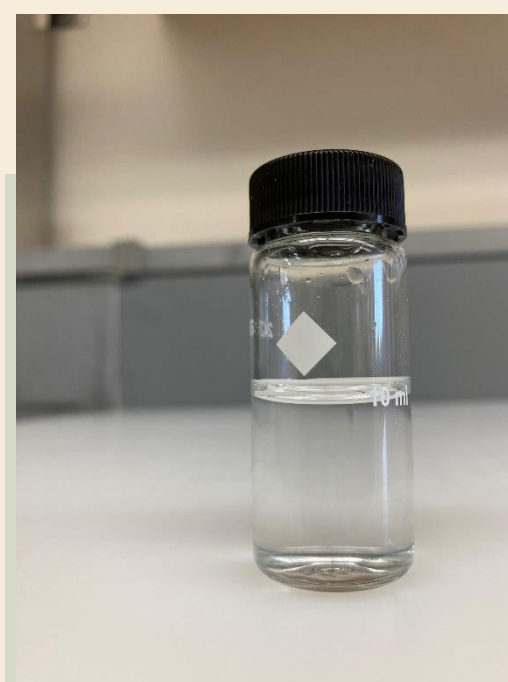


These are the parameters Calleguas collects for its nitrification monitoring program.



Total Chlorine

2.5 ppm



Free Chlorine

Non-Detect



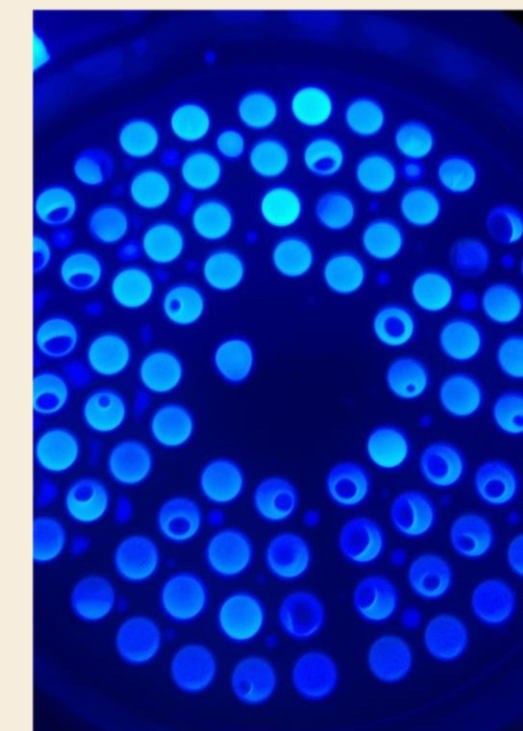
Nitrite

Action Level = 0.01 ppm



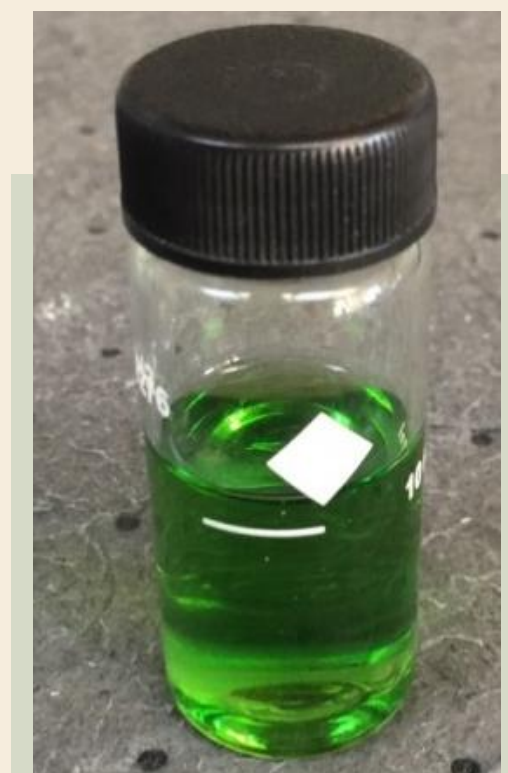
pH

➤ 8.2
➤ 7–8 is ideal
nitrification conditions



HPC

Should be low

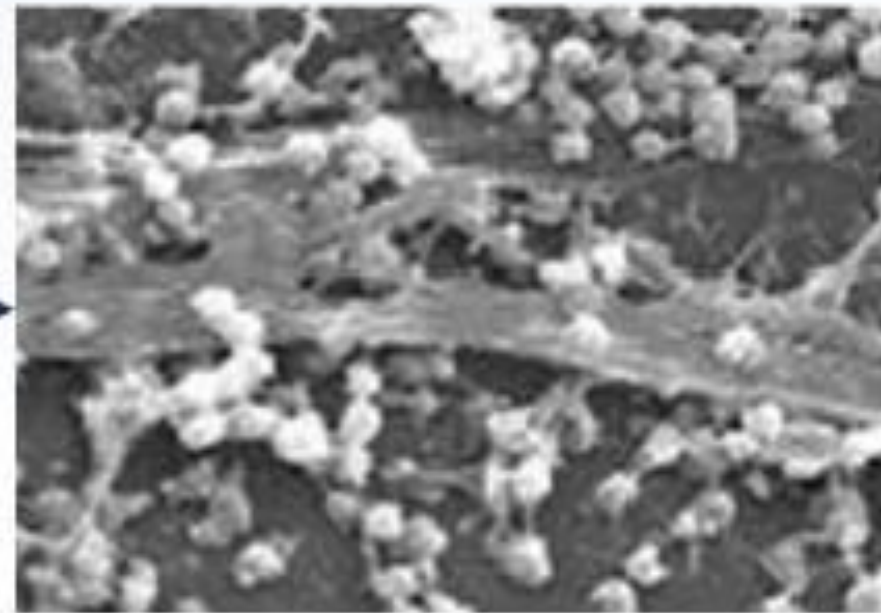
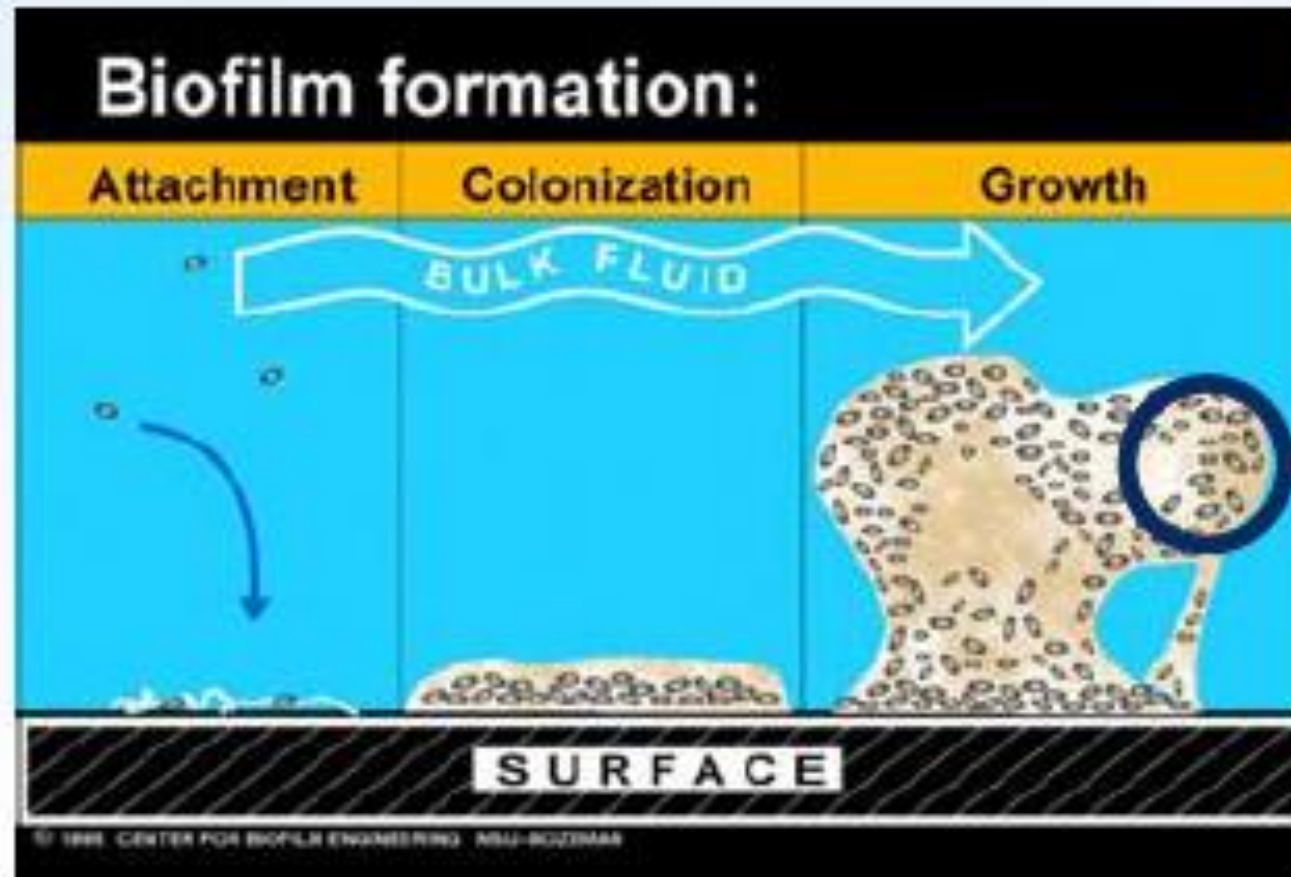


Total Ammonia

0.5 ppm to keep 5:1

Free ammonia should be zero

BIOFILM



- Community of diverse microorganisms adhered to distribution system components
- Biofilm can protect nitrifiers from disinfectants and unfavorable conditions

DISTRIBUTION SYSTEM MONITORING

- Tank sites are the most susceptible to decay in water quality – monitored weekly
- Other sites are monitored twice a month.
- If a WQ parameter is triggered, additional monitoring occurs
- Metropolitan water is monitored at East Portal (Smith Road)

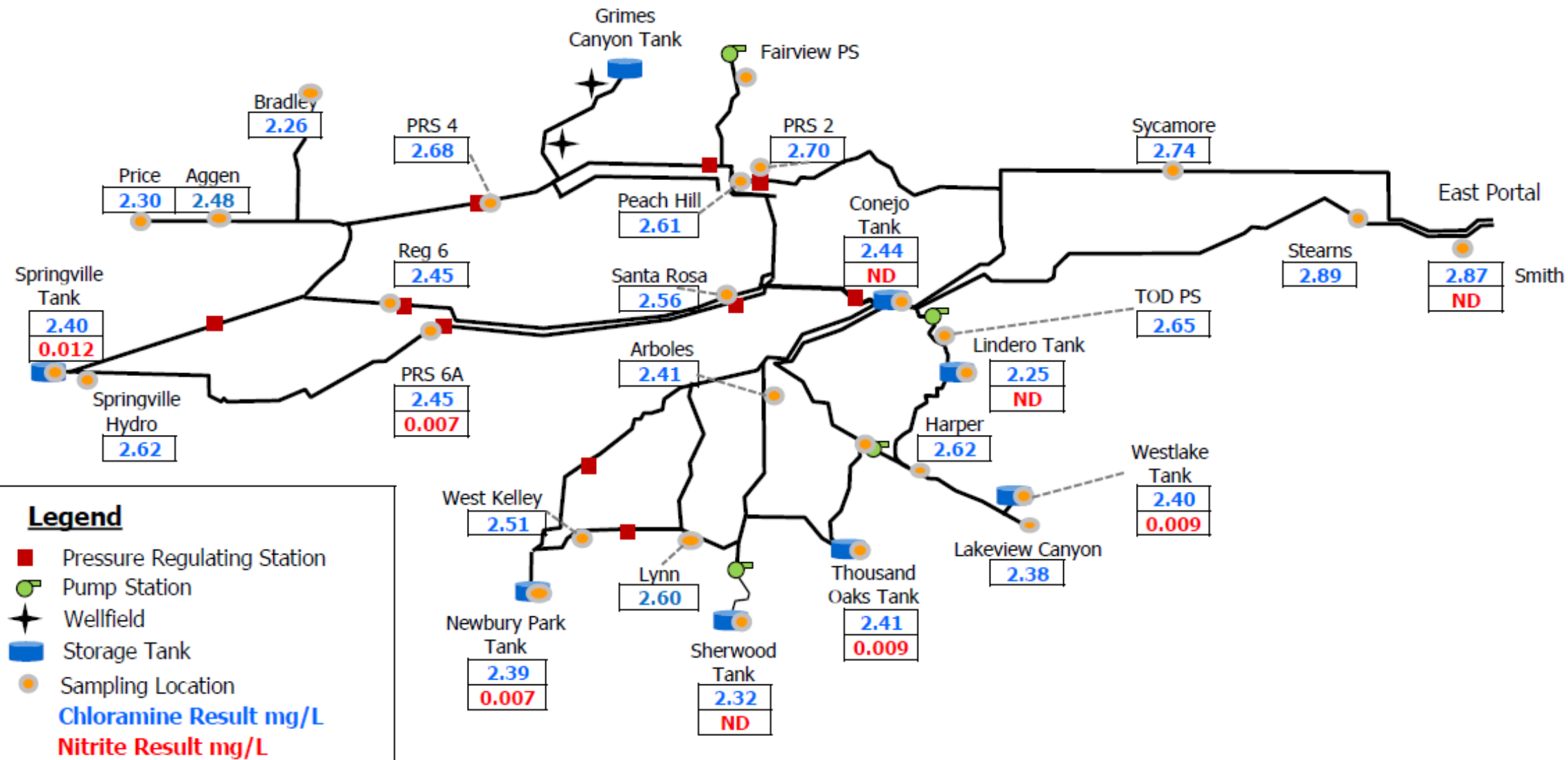


DISTRIBUTION SYSTEM MONITORING



Distribution System

Nitrification Data for 09/12/2024



Ten to twelve hours max residence time from East Portal to Springville Tank

SPRINGVILLE RESERVOIRS

The end of the road



01

Sample Results from Field

02

Operations Notified

03

**Pushing Water Through OSR
Feeders from the clearwells**

04

Drop Tank level

05

Resample Site

SPRINGVILLE RESERVOIRS

01

Sample results from field

(SV Tank = 0.015, Feeders 0.01 and 0.011) - July 29

02

Operations Notified

03

Pushing Water Through OSR
Feeders

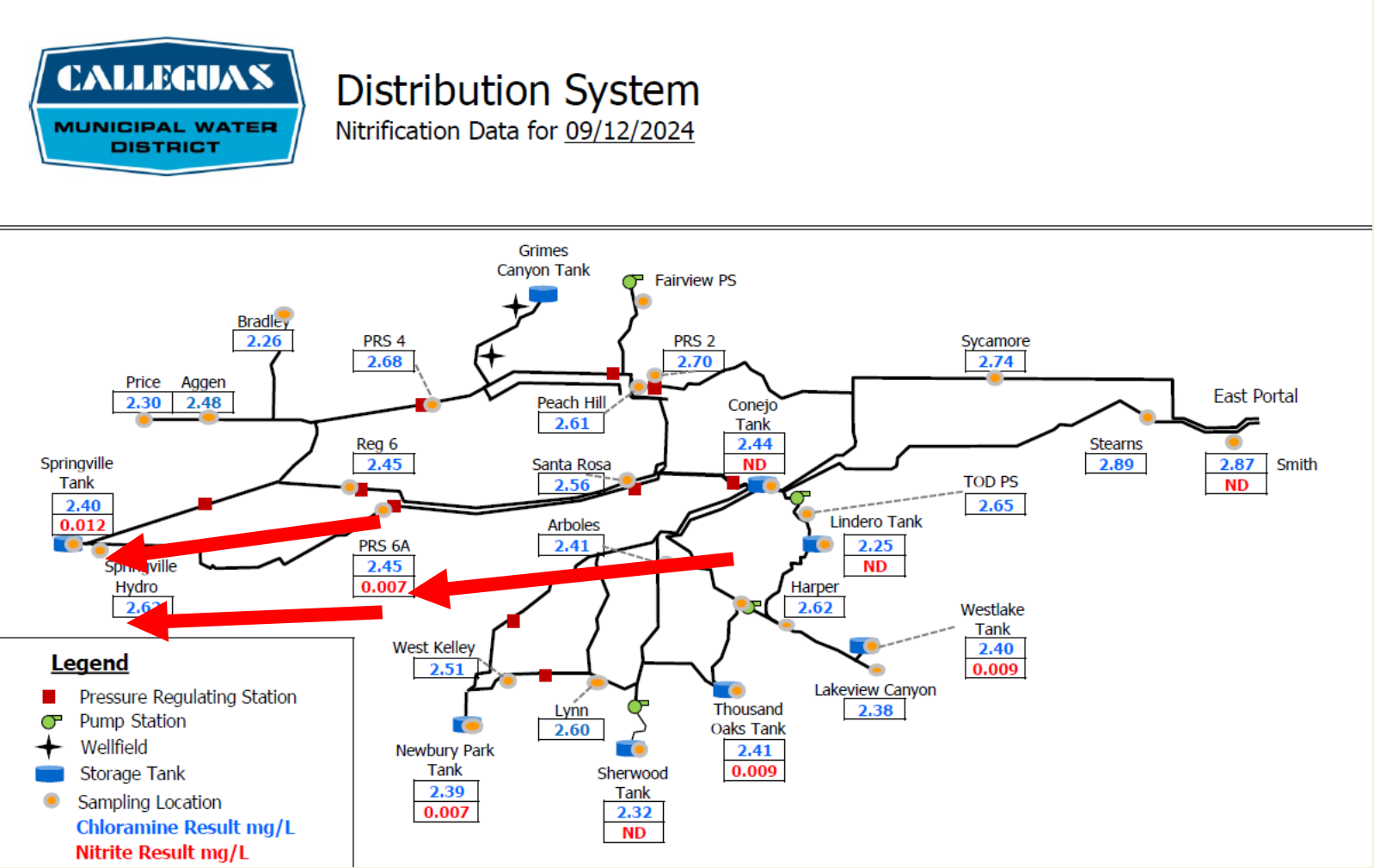
04

Drop Tank level

05

Resample site

(SV Tank = 0.006, Feeders 0.006 and ND) - August 5





THANK YOU

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