



Oakridge Water District

Meeting held on July 21, 2021

Meeting Agenda

- Introductions & Stakeholders
- History
- Operations
- Projects
- Upgrades List

Introductions & Stakeholders

- Town of Lewisboro – Owner of Water & Wastewater plant
- Oakridge Water & Wastewater District (OWD)
 - Composed of commercial space and approx. 900 residents in 400+ residential units
- VRI Environmental Services – Plant Operator
- Delaware Engineering – Civil & Environmental Engineering firm
- Westchester County Dept of Health: 914-864-7352

Introductions & Stakeholders

- OWD Committee
 - Residential: Erica Agro, Jeff Holbrook, Robin Gersten
 - Commercial: Phil Pine
 - Property Manager: Mike Lombardo
 - Town of Lewisboro:
 - Tony Gonçalves, Councilman
 - Peter Parsons, Supervisor
 - Joel Smith, Facilities Director

History

- Original plant built in early 80s
- 1990: plant approved by County DOH for use by Conant Valley Associates subdivision
- 1995: Town asked Delaware to inspect the facility and make a recommendation for possible take-over by the Town. Delaware agreed the Town should take over because of the condition of the WTP. Town Board decided not to take over
- 2002: WTP was in complete failure, no operational treatment
 - Greensand supersystem filter not maintained and had been bypassed
 - Anthracite Carbon system had been installed and was the only operational filtration but not maintained leading to bad water quality.

History

- July 2002: Town took control and formed the water and sewer districts
- 2002: Delaware Engineering was retained by the Town to design the upgrade and improve the the water system
 - Tanker trucks brought in to provide water supply until new wells could be drilled and new treatment could be rebuilt
 - Carbon filters repaired for temporary use.
- May 2005: Town of Lewisboro received NYS DEC Pollutant Discharge Elimination System (SPDES) Permit to operate wastewater plant
- January 2010: Town of Lewisboro received from County DOH: “Approval for Completed Works for Public Water Supply Improvement” for 80,000 Gallons per day flowrate

History – Original Greensand Filter



History – Original Anthracite carbon filters



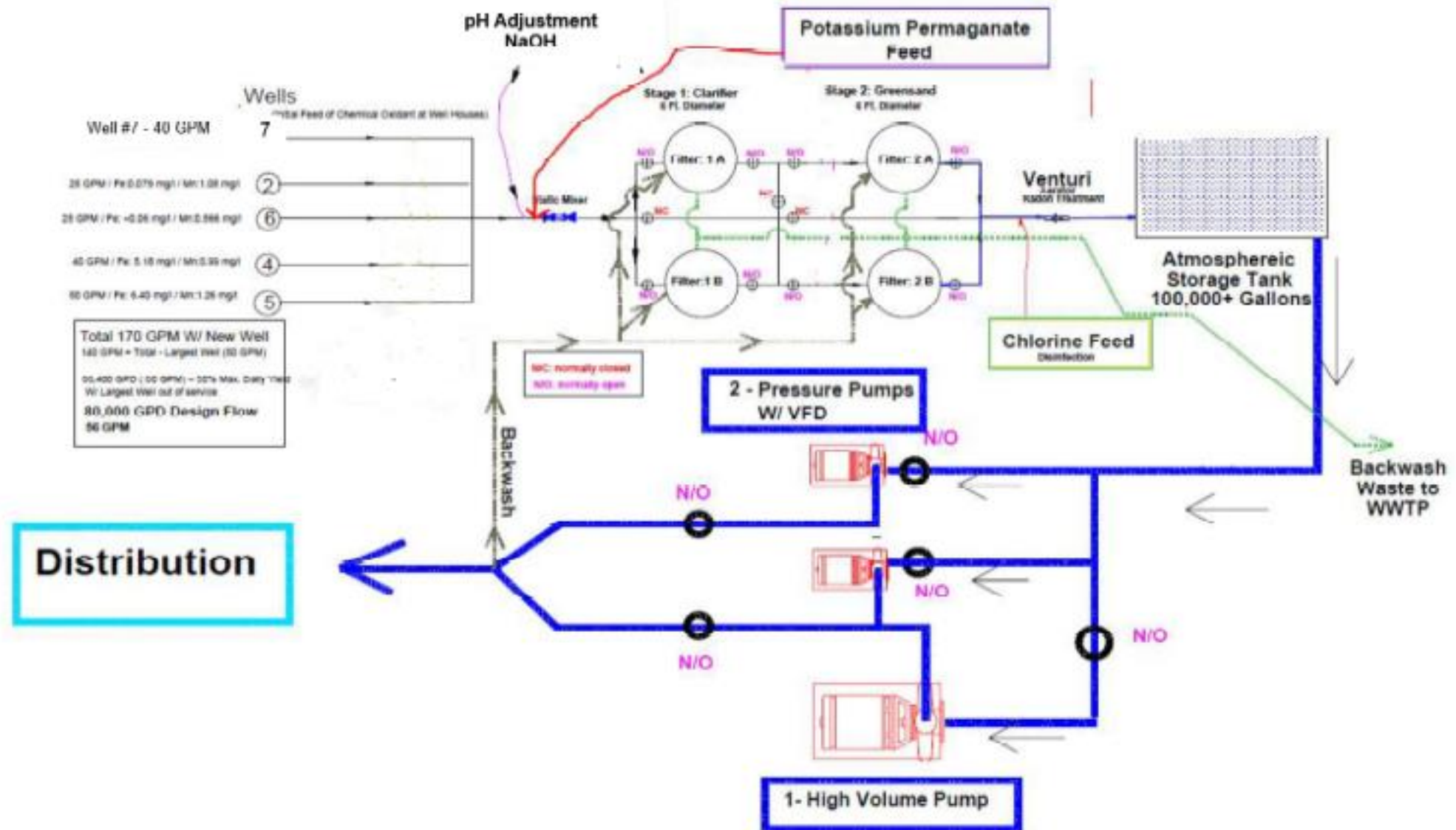
History – Vessels to be repurposed



History – Stage 1 and Stage 2 filtering today



Operations – Water Plant schematic



Operations - Process

- 5 Wells are used to source water (3 run concurrently)
- System flushing typically performed 2x per year
 - 2021 – quarterly flushing post flush valve installations
- Filtering stages
 - Stage 1 mixed media filtration: Iron & Manganese removal
 - Stage 2 Greensand media filtration: Removal of Total Suspended Solids (TSS) including further Iron & Manganese removal
- Chemical Treatment coupled with SCADA control system
 - Sodium Hyrdoxide: pH balance
 - Sodium Hypochlorite (Chlorine): disinfection, and controlled dosage to maintain a Chlorine residual 0.7of -1.0 mg/L at the Entry Point
 - Potassium Permanganate: oxidation of iron and manganese

Operations – Water sampling & results

- Water sampled/tested per VRI test plan developed under DOH guidance
- Required to meet compliance with Part-5 of the NY Sanitary Code
- PFAS
 - NYS lowered the MCL from 70ppt to 10ppt in Aug 2020
 - PFAS testing quarterly – Starting 1Q2021
 - 1Q21 testing for PFAS was required by DOH, one well above MCL
 - During Q1 and Q2 testing, entry point measured to be below MCL of 10ppt

Public Water Systems and NYS Drinking Water Standards for PFOA, PFOS and 1,4-Dioxane

- On August 26, 2020, NYS adopted new drinking water standards for public water systems that set maximum contaminant levels (MCLs) of 10 parts per trillion (10 ppt) each for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), and 1 part per billion (1 ppb) for 1,4-dioxane.
- MCLs require public water systems to regularly monitor for contaminants, notify health departments and the public of confirmed exceedances, and work with health departments on a compliance timetable and plan to bring water systems into compliance.
- The MCLs for PFOA, PFOS and 1,4 dioxane are among the most protective for these contaminants in public water of any state. NYS is the first state to develop an MCL for 1,4-dioxane.
- **Because MCLs are set at levels with a large margin of protection, an exceedance of an MCL does not mean that water is unsafe for use while the public water system takes actions to reduce the levels.**

Operations – Water sampling & results

- Lead & Copper testing
 - Annual until 2020, every 3yrs starting with 2021
 - Sources of lead include plumbing solder and fixtures found after the service lines
 - Lead limit is 15 ug/L
 - Copper limit is 1300 ug/L

Sample location	Copper	Lead	Sample date
185 Laurel Ridge	298	1.53	6/23/2021
167 Laurel Ridge	82.7	1.99	6/24/2021
175 Laurel Ridge	321	< 1.0	6/24/2021
163 Laurel Ridge	23.8	<1.0	6/25/2021
180 Laurel Ridge	446	<1.0	6/25/2021
184 Laurel Ridge	82.5	<1.0	6/25/2021

Operations – Water sampling & results

- Sodium
 - Guidance from NYS Dept. of Health;
 - Greater than 20 mg/L of Greater should not be used for drinking by people on severely restricted sodium diets.
 - Greater than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.”
 - Current Sodium Levels: typical 100 mg/L at entry point
- Hardness
 - Latest entry point measurement = 126 mg/L (considered moderately hard)

Projects: Trihalomethanes (THMs)

- THMs were found in small amounts in the water in 2016
- THMs had been removed but upgrades were needed by DOH to ensure THMs would not recur
- Town Board authorized BAN for \$482.5K in 2018
 - Pre-requisite for Water Infrastructure Improvement Act (WIIA) Grant
 - Initial grant application rejected in December 2018, re-applied in 2019 and received grant approval in December 2019
 - Reimbursement equating to 60% of costs expected this year

Projects: NYSEG – PR 455 Circuit

- Equipment (reclosers) installed to lessen duration of outages in 2020
- Recording equipment installed (at Water Plant and VFD)
 - To monitor the occurrence of frequent/short outages
 - Recloser adjustments made on 8/25/20 to reduce sensitivity
- Tree trimming along the PR 455 Circuit was completed in August 2020
- NYSEG introduced Resiliency Project plan to OWD on October 29, 2020.
 - Project commenced in May 2021 and is ongoing

Projects: Flush Valves & Hydrants

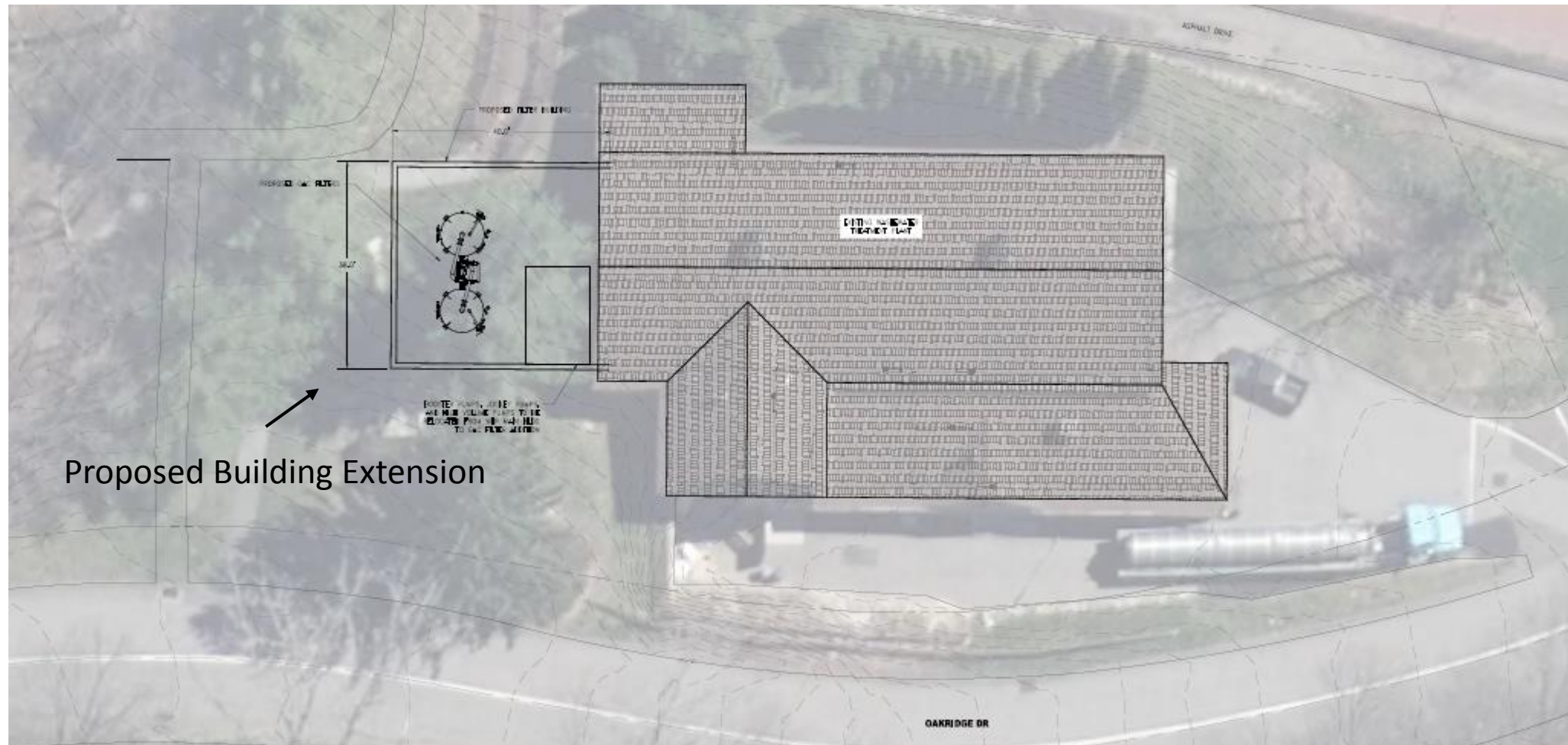
- Remove discoloration with optimized flushing and sediment removal
- Years of w/o an optimized flushing process resulted in sediment buildup inside the mains
- Now flushing at >750 GPM by using both; booster pumps & the jockey pump, to achieve the scouring velocity
- Service lines which “dead-end” at the water closets can now be flushed via newly installed valves.
- Will also help to prevent formation of THMs

Projects: PFAS Filtration

- Corrective action plan delivered to DOH end of May 2021
- Corrective action requires installation of GAC Filtration



Projects: PFAS Filtration – Plant Expansion



Upgrades List – Completed or in-process

- GAC Filtration for removal of PFAS to non-detect - In process
 - Take advantage of new building for upgrades, chemical storage, etc.
- Addition of a second high volume pump (In process with GAC)
 - Strong push from WCDOH and would meet redundancy requirements & if pump goes bad, eliminate down time from daily backwashing, flushing, etc.
- Piping - Replace & Relocate to a workable level (In Process with GAC)
- New Booster pumps (Being installed with new GAC building upgrade)
- Sand Filter Service: Full inspection & service of greensand filters
 - Critical to removal of Total Suspended Solids (TSS) particles
 - Completed

Upgrades List – Most Important

- Water plant
 - New CL2 / pH Analyzer – Current one has been rebuilt several times
 - VFD Upgrade - Variable frequency drives used to operate pumps
- Wastewater plant
 - New Boiler - For heating
 - VFD Upgrade - Variable frequency drives used to operate pumps
 - New Headworks Screen
 - Current screen is deteriorated and cannot handle full flow when pump stations are running more than one at a time

Upgrades List – Long Term (not as urgent)

- Water Treatment Plant
 - Automation of backwash valves
- Wastewater Plant
 - New Rotating Biological Contactor or other option such as CAS/MBR
 - Microfiltration
 - UV Disinfection to replace CL2
 - Clarifier Refabricating
 - Relocate Ecodyne Pump Station controls - In process as a result of recent pump station failure

Questions?