

September 25, 2025

Corinne Clifton – c.a.j.clifton@gmail.com

Weiss Estates Water System
57259 Dodger Road
Bandon, OR 97411

Sent by email only

Re: Water Treatment Plant Improvements (PR #2024-135)
Weiss Estates Water System – PWS # 05581

Dear Corinne Clifton:

Thank you for your submittal to the Drinking Water Services (DWS) of plans for the new equipment at the water treatment at Weiss Estates Water System. Our office has received plans and a review fee of \$825.

The project includes an ultraviolet light reactor Viqua Pro 24-186, Hydrus Series Adsorbent Filter (Model H121c), Limestone Reactor (Model H121ph), a screen/roughing filter (Evoqua VAF V-200P), and the existing membrane (pre-filter) and the Harmsco HC/90LT2 cartridge filter. The maximum flowrate through the UV equipment is 24 gpm.

CONDITIONS

The project is approved subject to the following conditions:

- The UV reactor was validated using the setpoint dose at a UV Transmittance (UVT) of 90% to 99%. Take UVT samples now to assure the UV reactor will be valid for your water system. (More about UVT below.)
- Attached are two graphs, one titled Operating Diagram – Viqua Pro24-186 and one titled Dose Curves that together depict the “Operating Range” for which this UV system was validated and is provided for its proper use. Use these to track volumes of off-specification (off-spec) water. For instance, at 20 gpm, the intensity must be at least 15 mA and the UVT must exceed 90% to achieve

appropriate pathogen inactivation; otherwise the water produced is considered off-spec. No water produced is allowed to be off-spec. This includes during warm-up mode.

- Assure ability to calculate and totalize off-specification water volume produced, particularly during power sags. (Record off-spec water volumes in monthly report enclosed.)
- Sample tap must be provided before the UV reactor for UVT sampling.
- Assure visual verification of the operation of the lamps (e.g., indicator light).
- UV reactors must withstand system pressures, and a simple mercury containment plan in the rare event of mercury amalgam lamp breakage must be developed.

REQUIREMENTS

Once the UV treatment system is operational, the following requirements must be met – See corresponding attached forms to use for UV monitoring:

- Sensor calibration must be checked monthly using a reference sensor. The sensor needs to be re-calibrated or replaced when the calibration is off by more than 20%.
- Monitor amount of off-spec water produced every month. Log that amount on back side of monthly SWTR reporting form.

PATHOGEN INACTIVATION CREDITS

The UV treatment will be granted the following log inactivation credits:

- According to the UV validation report, the Viqua Pro24-186 has been granted the following inactivation credit by OHA-DWS as long as the UV reactor is operated within the operation diagram's boundaries:

<u>Pathogen</u>	<u>log-inactivation credit</u>
<i>Giardia lamblia</i>	5.5
<i>Cryptosporidium parvum</i>	5.5
Virus	4.0

- While your water system achieves *Giardia*, *Cryptosporidium*, and virus inactivation compliance with this UV reactor, we still require a detectable

chlorine residual in the distribution. Additionally, at least 0.2 mg/L chlorine is required at the entry point.

Recommendations

- Confirm the system has the correct equipment for testing for water quality parameters (pH and alkalinity).
- Update the operations and maintenance manual to include procedures for replacing media, recording data, calculating dosages, etc.
- Minimum required pH and alkalinity levels will be assigned after construction is complete. Regular measurements of pH and alkalinity will need to be recorded and the results submitted.

Upon completion of the project, the engineer must verify in writing that all conditions listed above have been met and that construction was completed according to the submitted plans. If substantial changes are made, a set of as-built drawings must be submitted.

If you have any questions, or would like this in an alternate format, please feel free to call me at 541-650-4868.

Sincerely,



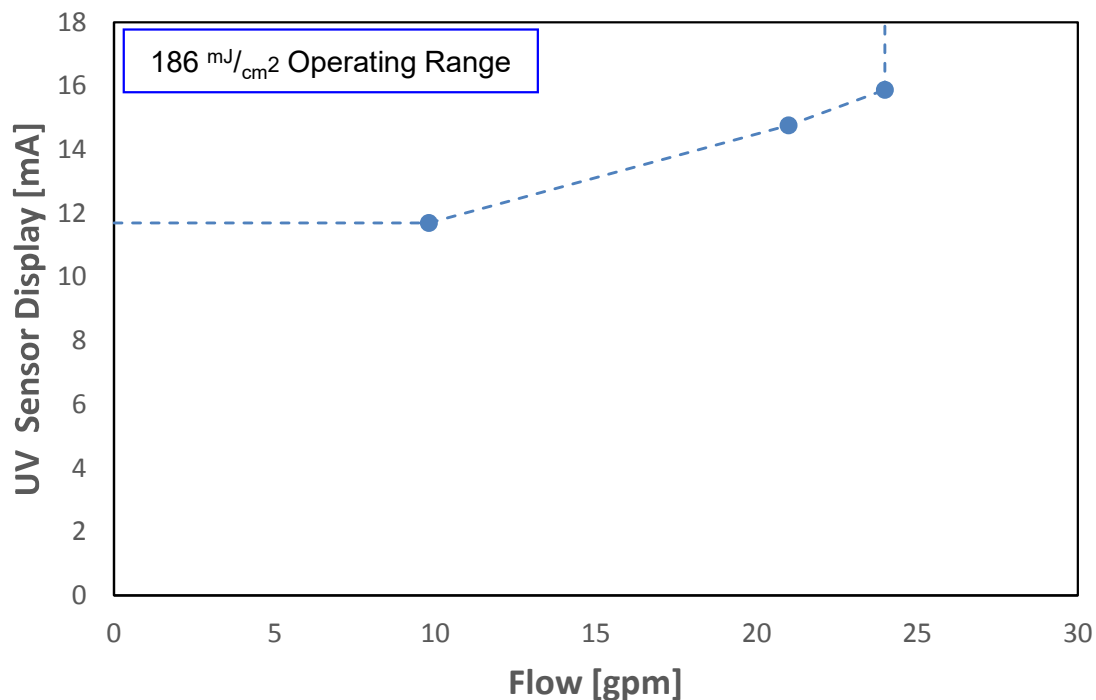
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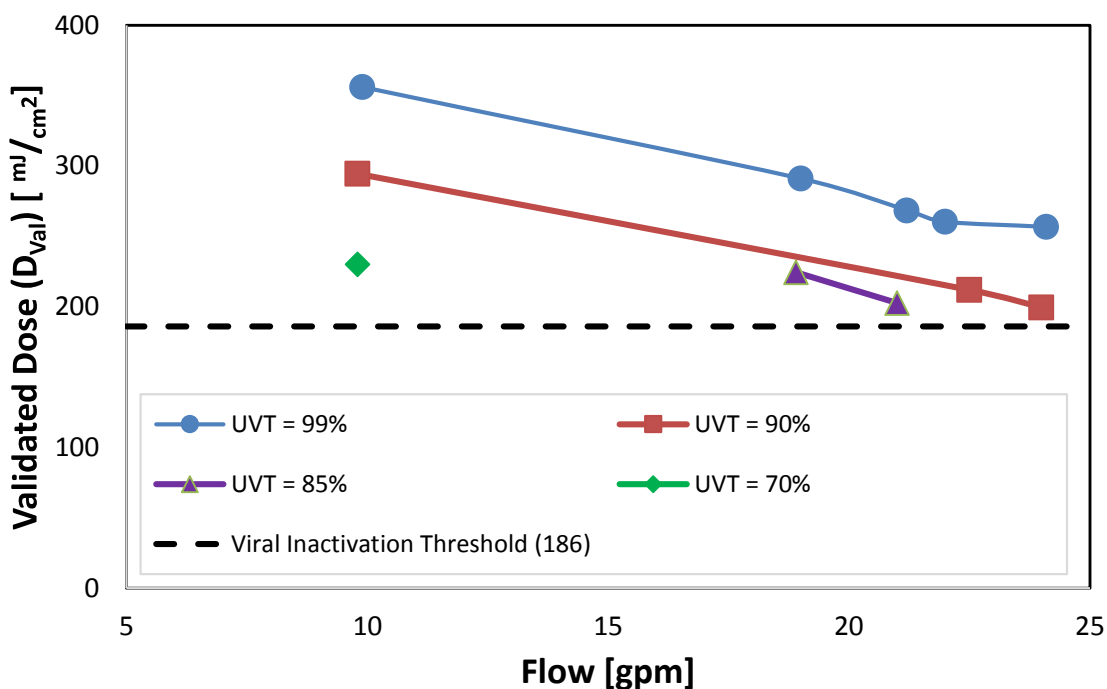
Enclosures:

- Turbidity Report Form – UV (due monthly)
- Sensor Calibration Form (not required to submit to DWS)

Operating Diagram - Viqua Pro24-186



Dose Curves



OHA - Drinking Water Services – Turbidity Monitoring Report Form
Cartridge or Bag Filtration

County **Coos**
 Month/Year

System Name Weiss Estates Water System			PWS ID# 41 05581		WTP ID WTP-A	
DAY	PSI Before Filter	PSI After Filter	PSID	PSID When to Change Filter	Daily Turbidity Reading [NTU]	Highest Reading of the Day ¹ [NTU]
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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16						
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28						
29						
30						
31						

Cartridge Filtration Monthly Summary		Monthly Summary (Answer Yes or No)	
95% of daily turbidity readings ≤ 1 NTU? Yes ☐ No ☐	All daily turbidity readings ≤ 5 NTU? Yes ☐ No ☐	CT's met every day? (see viral UV form) Yes ☐ No ☐	All Cl ₂ residual at entry point ≥ 0.2 mg/L? ² Yes ☐ No ☐
Notes: PSI = pounds per square inch PSID = pounds per square inch difference (before filter – after filter) PSID When to Change Filter = Manufacturer's recommendation; may need to look in manual for manufacturer's specifications when to change the filter, at what PSID.		PRINTED NAME:	
		SIGNATURE:	DATE:
		PHONE #: - -	CERT #:

¹ Including continuous turbidity data, if applicable, for optimization recording purposes. Compliance values in "Daily Turbidity Reading" Column may not correspond to continuous readings' maximum.

² If Cl₂ at entry point < 0.2 mg/L, or CT not met, notify DWS within 24 hours.

Return by 10th of following month by email, fax or mail to:

dlw.dmce@oha.oregon.gov; Fax 971-673-0694; or Drinking Water Services, PO Box 14350, Portland, OR 97293-0350

OHA – Drinking Water Services – Monthly UV Disinfection Report for Surface Water Systems Requiring 4-log Viral Inactivation

County **Coos**
Month/Year

System Name Weiss Estates Water System			PWS ID# 41 05581	
Entry Point EP-A			Required Minimum Dose 186 mJ/cm ²	

Date	Time	Source(s) in use	Uninterrupted UV Operation? (i.e., No Alarms = Yes)	Notes
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
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15				
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27				
28				
29				
30				
31				

If answered no above, what was the longest time period until UV operation was restored? _____ hours

If UV stopped working during water production, was DWS contacted? ☐ Yes ☐ No ☐ N/A

Was a boil notice (Tier 1 Public Notice) issued, or is a Tier 2 public notice planned? ☐ Yes ☐ No ☐ N/A

If not, please explain: _____

☐ N/A

Date & time UV reactor failed: _____ : _____ am/pm

Date & time it was returned to service: _____ : _____ am/pm

April 8, 2025

UV Sensor Calibration Form

Recommended for internal use. Not for compliance. Save for your records.

System Name: Weiss Estates Water System

County: Coos

PWS ID No.: 05581

Source #: SRC-AA

Report for Month/Year : _____/_____

UV Reactor 1

Lamp/ Row	Date	Sensor Serial Number		Sensor Readings			Sensor Check Acceptable (Y/N)	Total Lamp Hours
		Duty	Reference	Duty [mW/cm^2]	Reference [mW/cm^2]	Calibration Ratio		
1								
2								
3								
4								
5								
6								

UV Reactor 2

Lamp/ Row	Date	Sensor Serial Number		Sensor Readings			Sensor Check Acceptable (Y/N)	Total Lamp Hours
		Duty	Reference	Duty [mW/cm^2]	Reference [mW/cm^2]	Calibration Ratio		
1								
2								
3								
4								
5								
6								

Sensor Calibration Ratio:

$$\left(\frac{I_{Duty}}{I_{Ref}} \right)$$

Where: I_{Duty} = Intensity Reading of Duty Sensor
 I_{Ref} = Intensity Reading of Reference Sensor

Sensor Calibration Acceptable if Sensor Calibration Ratio ≤ 1.2

Signature _____

Date _____

(Sensors calibrations should be checked monthly. Keep records available on site for review during surveys. Do not submit.)