

# OHA - DWS

## Membrane Filter Monthly Operating Report

County: **Clatsop**

System Name: **Arch Cape Water District**

Month/Year: **Sep-2024**

PWS ID#: 41 - **00802**

Minimum test pressure applied: **18** psi

Plant ID: WTP - **A**

Minimum test pressure req'd: **18** psi

(e.g., "A")

DIT = Direct Integrity Test on filter(s) [Yes, No, or "off" if all filters are offline] ⇨

PDR = Pressure Decay Rate

LRC = Log Removal Credit

PDR<sub>Max</sub> [<sup>psi</sup>/<sub>min</sub>]

LRC [log removal]

0.057

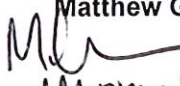
4.00

DIT Daily

Day	CFE Daily Turbidity [NTU]	Highest CFE* [NTU]	Highest IFE [NTU]	Highest PDR of day [ <sup>psi</sup> / <sub>min</sub> ]	Lowest LRV <sub>ambient</sub> of day [log removal]	[Y/N] or "off"
1	0.030	0.04	0.040	0.05		Y
2	0.030	0.04	0.040	0.04		Y
3	0.040	0.04	0.040	0.05		Y
4	0.050	0.04	0.040	0.05		Y
5	0.030	0.04	0.040	0.05		Y
6	0.030	0.04	0.040	0.06		Y
7	0.030	0.04	0.040	0.06		Y
8	OFF	OFF	OFF	OFF		OFF
9	0.030	0.04	0.040	OFF		N
10	0.030	0.04	0.040	0.06		Y
11	0.040	0.04	0.040	0.04		Y
12	0.030	0.04	0.040	0.05		Y
13	0.030	0.04	0.040	0.05		Y
14	0.030	0.04	0.040	0.05		Y
15	0.030	0.04	0.040	0.05		Y
16	0.040	0.04	0.040	0.06		Y
17	OFF	OFF	OFF	0.06		Y
18	0.030	0.04	0.040	0.03		Y
19	0.030	0.04	0.040	0.04		Y
20	OFF	OFF	OFF	0.05		Y
21	OFF	OFF	OFF	0.03		Y
22	OFF	OFF	OFF	0.05		Y
23	0.030	0.04	0.040	0.05		Y
24	OFF	OFF	OFF	0.04		Y
25	0.030	0.03	0.030	0.02		Y
26	0.030	0.03	0.030	0.05		Y
27	OFF	OFF	OFF	0.04		Y
28	0.030	0.03	0.030	0.02		Y
29	0.030	0.03	0.030	0.03		Y
30	OFF	OFF	OFF	0.05		Y
31						

**Compliance summary (operator to complete any blank fields)**

95% of daily turbidity readings ≤ 1 NTU? [Y/N]	All turbidity readings ≤ 5 NTU? [Y/N]	All IFE turbidity readings ≤ 0.15 NTU? [Y/N]	Performance std met? [Y/N] (PDR ≤ PDR <sub>Max</sub> , LRV ≥ LRC)	DIT Daily?
Yes	Yes	Yes	Yes	No
CT's met daily? (p. 2)	All Cl <sub>2</sub> residual at EP ≥ 0.2 mg/L?	PDR ≤ PDR <sub>Max</sub> ?	LRV <sub>ambient</sub> ≥ LRC?	
Yes	Yes	Yes		

PRINTED NAME: **Matthew Gardner** DATE: **10/4/24** ~~40/2/2024~~ ml  
 SIGNATURE:  WT CERT #: **T-09382 D-09383**  
 Notes: **MATTHEW J. GARDNER 10/4/24** PHONE #: **503-436-2790**

♣ Used for optimization purposes only.

**Disinfection Monthly Operating Report**

System Name: Arch Cape Water District

PWS ID#: 41 - 00802

Plant ID : WTP - A

**0.5**

↳ Log  
Inactivation  
Required via  
Disinfection

Day	Minimum Cl <sub>2</sub> Residual at 1 <sup>st</sup> User ( C ) † [mg/L = ppm]	Contact Time (T) [minutes]	Actual CT C x T (Formula)	Temp [° C]	pH	Required CT (Formula)	CT Met? † [Yes / No] (Formula)	Peak Hourly Demand Flow [GPM]	Notes (e.g. "Plant Off")
1	0.820	231	189.4	16.5	7.50	14.5	YES	97	
2	0.800	285	228.0	16.4	7.54	14.8	YES	75	
3	0.800	252	201.6	16.3	7.50	14.7	YES	90	
4	0.770	221	170.2	16.2	7.07	12.6	YES	95	
5	0.780	226	176.3	16.6	7.20	12.9	YES	100	
6	0.760	223	169.5	16.6	7.25	13.1	YES	95	
7	0.740	214	158.4	16.7	7.32	13.3	YES	99	
8	0.740	211	156.1	16.7	7.30	13.2	YES	94	
9	0.700	188	131.6	16.8	7.41	13.6	YES	98	
10	0.730	227	165.7	16.8	7.40	13.6	YES	80	
11	0.780	240	187.2	16.7	7.46	14.1	YES	85	
12	0.680	257	174.8	16.5	7.44	14.0	YES	87	
13	0.620	251	155.6	16.2	7.46	14.3	YES	87	
14	0.700	260	182.0	16.3	7.43	14.2	YES	86	
15	0.650	207	134.6	16.1	7.46	14.4	YES	103	
16	0.710	233	165.4	16.1	7.47	14.6	YES	93	
17	0.780	241	188.0	15.9	7.46	14.8	YES	93	
18	0.740	262	193.9	15.8	7.45	14.8	YES	82	
19	0.800	154	123.2	15.9	7.47	14.9	YES	147	
20	0.760	256	194.6	15.8	7.48	15.0	YES	84	
21	0.820	216	177.1	15.7	7.45	15.0	YES	103	
22	0.800	256	204.8	15.6	7.44	15.1	YES	82	
23	0.880	388	341.4	15.9	7.42	14.8	YES	57	
24	0.830	228	189.2	15.8	7.50	15.2	YES	92	
25	0.800	290	232.0	15.8	7.56	15.5	YES	70	
26	0.690	257	177.3	15.6	7.45	14.9	YES	87	
27	0.620	279	173.0	15.5	7.48	15.1	YES	78	
28	0.570	221	126.0	15.5	7.45	14.8	YES	94	
29	0.730	243	177.4	15.1	7.43	15.4	YES	92	
30	0.680	229	155.7	14.8	7.47	15.8	YES	93	
31									

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

Submit this monthly report by the 10<sup>th</sup> of following month by

mail: Drinking Water Services  
PO Box 14350  
Portland, OR 97293-0350  
email: [dwp.dmce@odhsoha.oregon.gov](mailto:dwp.dmce@odhsoha.oregon.gov)  
fax: 971-673-0458

## Definitions & Additional Information

### Glossary of Terms:

CFE = Combined Filter Effluent    IFE = Individual Filter Effluent

PDR = Pressure Decay Rate     $\cong$     DIT = Direct Integrity Test    LRC = Log Removal Credit

LRV = Log Removal Value       TMP = Transmembrane Pressure

Cl<sub>2</sub> = Chlorine    CT = chlorine Concentration x contact Time

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### **LRV<sub>ambient</sub>: The preferred performance metric Oregon is moving towards**

LRV<sub>ambient</sub> is a performance metric of the filter's *Cryptosporidium* removal efficiency; [log] units.

LRV<sub>ambient</sub> is calculated using the last DIT results & operating conditions (e.g., flow, temp. & TMP)

A filter whose LRV<sub>ambient</sub> is less than the LRC must be taken off-line, repaired and then re-tested.

LRV<sub>ambient</sub> is an LRV calculated using most recent DIT results (e.g., PDR in <sup>psi</sup>/<sub>min</sub>), current filter flowrate, water temperature, and TMP.

An LRV<sub>ambient</sub> of 4-log is equivalent to 99.99% removal of *Cryptosporidium*.

The nature of membrane filtration requires higher pathogen removal rates. Therefore, 4-log is typically the minimum pathogen removal target.

### **Highest PDR (Pressure Decay Rate):**

Enter the highest pressure decay rate in <sup>psi</sup>/<sub>min</sub> measured for DITs of all operating filters in a day.

A filter whose PDR exceeds the PDR<sub>Max</sub> must be taken off-line, repaired and re-tested.

(PDR<sub>Max</sub> is an Upper Control Limit (UCL) based on the DIT Pressure Decay Rate)

### **DIT Daily:**

Enter "Y" if ALL filters operating in a given day were subjected to a DIT.

Enter "N" if ANY operating filter did not have a DIT.

Enter "Off" if ALL filters were off-line for the day.

Each filter producing water for human consumption in a given day must undergo a DIT

### **Highest IFE [NTU]: Must be continuously monitored.**

If ever exceeds 0.15 NTU for > 15 minutes: Run a DIT, & complete Turbidity Triggered DIT form

### **Highest CFE [NTU]:**

Data is collected for optimization purposes. Not for compliance.

The optimization goal for membranes is 0.05 NTU

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**Turbidity-Triggered Direct Integrity Test (DIT) Reporting Form**

OHA - Drinking Water Services

To be used when IFE exceeds 0.15 NTU, and submitted to OHA-DWS <sup>★</sup>

Water System Name: Arch Cape Water District

Water System ID: 00802 [00802 Water System Profile on DataOnline](#)

Treatment Plant ID: WTP- A PDR<sub>max</sub> = maximum allowed pressure decay rate for a passing DIT

County: Clatsop LRC = Log Removal Credit granted for filtration, LRV<sub>ambient</sub> must be ≥ LRC.

Month - Year: Sep-24

Date/Time and membrane unit(s) affected		Pressure Decay Rate (PDR) [ <sup>psi</sup> / <sub>min</sub> ]: <b>0.06</b>			LRC: <b>4.00</b>	
Date/Time	Membrane unit/skid/cell ID#	Turbidity level > 0.15 NTU resulting in DIT [NTU]	Corrective action	DIT Re-test Results [ <sup>psi</sup> / <sub>min</sub> ]	Return-to-service turbidity [NTU]	Return-to-service LRV <sub>ambient</sub> [log]

**Monthly Summary**

All return to service turbidity readings ≤ 0.15 NTU? (Enter Yes or No) ⇔

All membrane units removed from service until a DIT passes? (Enter Yes or No) ⇔

All return to service LRV<sub>ambient</sub> ≥ LRC? (Enter Yes or No) ⇔

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Phone #: \_\_\_\_\_

Date: \_\_\_\_\_

WT Cert #: \_\_\_\_\_

★ OAR 333-061-0036(5)(d)(C)(iv) states that if indirect integrity monitoring includes turbidity and the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (i.e., two consecutive 15-minute readings above 0.15 NTU), direct integrity testing in accordance with subparagraphs (5)(d)(B)(i) through (v) of this rule must immediately be performed on the associated membrane unit.