OHA - DWS

Membrane Filter Monthly Operating Report

County: **Polk**

System Name: **Buell Red Prairie Water Dist.**

Month/Year: **Nov, 2024**

PWS ID#: 41 - **01174**

Minimum test pressure **applied**: **18.21** psi

Plant ID: WTP - _____ *(e.g., "A")*

Minimum test pressure **req'd**: **17.24** psi

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_{Max} [$^{psi}/_{min}$]	LRC [log removal]	DIT Daily
				0.040	4.00	
Day	CFE Daily Turbidity [NTU]	Highest CFE♣ [NTU]	Highest IFE [NTU]	Highest PDR of day [$^{psi}/_{min}$]	Lowest $LRV_{ambient}$ of day [log removal]	[Y/N] or "off"
1	0.028	0.027	0.028	0.02	4.45	Y
2	0.029	0.031	0.030	0.03	4.28	Y
3	0.027	0.027	0.033	0.02	4.48	Y
4	0.028	0.031	0.030	0.01	4.33	Y
5						Off
6						Off
7						Off
8	0.029	0.061	0.039	0.02	4.37	Y
9	0.032	0.047	0.041	0.02	4.26	Y
10	0.038	0.027	0.039	0.03	4.24	Y
11	0.022	0.029	0.039	0.02	4.34	Y
12	0.021	0.031	0.039	0.03	4.28	Y
13	0.024	0.033	0.033	0.03	4.21	Y
14	0.023	0.031	0.040	0.03	4.39	Y
15	0.024	0.031	0.036	0.02	4.36	Y
16	0.024	0.033	0.037	0.03	4.25	Y
17	0.027	0.033	0.035	0.03	4.28	Y
18	0.021	0.032	0.033	0.03	4.21	Y
19	0.020	0.036	0.038	0.03	4.25	Y
20	0.020	0.041	0.038	0.02	4.43	Y
21	0.020	0.026	0.037	0.03	4.25	Y
22	0.023	0.036	0.035	0.03	4.35	Y
23	0.024	0.031	0.033	0.02	4.52	Y
24	0.027	0.04	0.038	0.02	4.43	Y
25	0.027	0.046	0.028	0.04	4.31	Y
26	0.032	0.043	0.029	0.03	4.28	Y
27	0.034	0.046	0.028	0.02	4.46	Y
28	0.038	0.049	0.030	0.01	4.33	Y
29	0.036	0.062	0.033	0.02	4.38	Y
30	0.034	0.047	0.030	0.02	4.47	Y
31	N/A	N/A	N/A	N/A	N/A	day

Y

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_{Max}, LRV ≥ LRC)	DIT Daily?
Yes	**Yes**		**Yes**	**Yes**

CT's met daily? (p. 2)	All Cl_2 residual at EP ≥ 0.2 $^{mg}/_{L}$?	PDR ≤ PDR_{Max}?	$LRV_{ambient}$ ≥ LRC?
Yes	**Yes**	**Yes**	**Yes**

PRINTED NAME: **Darrel Lockard** **DATE:** 12/10/2024

SIGNATURE: Darrel Lockard **WT CERT #:** **2853**

Notes: **PHONE #:** **(541) 222-9997**

Revised 7/31/2023

♣ *Used for optimization purposes only.*

OHA-DWS

Disinfection Monthly Operating Report

System Name: **Buell Red Prairie Water Dist.**

PWS ID#: 41 - **01174**

Plant ID : WTP -

0.5 ⇦ Log Inactivation Required via Disinfection

Day	Minimum Cl_2 Residual at 1st 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	1.380	60	82.8	14.0	7.00	15.2	YES	110	
2	1.320	60	79.2	14.0	7.00	15.1	YES	110	
3	1.260	60	75.6	13.0	7.00	16.0	YES	110	
4	1.290	60	77.4	13.0	7.00	16.1	YES	110	
5	Off	60	#######			#######	#######	110	Off
6	Off	60	#######			#######	#######	110	Off
7	Off	60	#######			#######	#######	110	Off
8	1.480	60	88.8	10.0	7.00	20.4	YES	110	
9	1.520	60	91.2	9.0	7.00	21.8	YES	110	
10	1.390	60	83.4	10.0	7.00	20.2	YES	110	
11	1.500	60	90.0	13.0	7.00	16.5	YES	110	
12	1.240	60	74.4	13.0	7.00	16.0	YES	110	
13	1.350	60	81.0	11.0	7.00	18.8	YES	110	
14	1.330	60	79.8	11.0	7.00	18.8	YES	110	
15	1.290	60	77.4	9.0	7.00	21.3	YES	110	
16	1.340	60	80.4	11.0	7.00	18.8	YES	110	
17	1.350	60	81.0	11.0	7.00	18.8	YES	110	
18	1.460	60	87.6	12.0	7.00	17.8	YES	110	
19	1.420	60	85.2	10.0	7.00	20.2	YES	110	
20	1.370	60	82.2	11.0	7.00	18.8	YES	110	
21	1.350	60	81.0	11.0	7.00	18.8	YES	110	
22	1.740	60	104.4	13.0	7.00	16.9	YES	110	
23	1.900	60	114.0	11.0	7.00	20.0	YES	110	
24	2.200	60	132.0	12.0	7.00	19.4	YES	110	
25	2.200	60	132.0	9.0	7.00	23.6	YES	110	
26	1.340	60	80.4	10.0	7.00	20.0	YES	110	
27	1.480	60	88.8	9.0	7.00	21.7	YES	110	
28	1.410	60	84.6	10.0	7.00	20.2	YES	110	
29	1.320	60	79.2	10.0	7.00	20.0	YES	110	
30	1.580	60	94.8	10.0	7.00	20.6	YES	110	
31	N/A	60	#######			#######	#######	110	N/A 30 day month

♦ 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 10th of following month by

mail: Drinking Water Services
PO Box 14350
Portland, OR 97293-0350

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 ♠

Water System Name: **Buell Red Prairie Water Dist.**

Water System ID: **01174** 01174 Water System Profile on DataOnline

Treatment Plant ID: WTP-

County: **Polk**

Month - Year: **Nov, 2024**

PDR_{Max} = maximum allowed pressure decay rate for a passing DIT

LRC = Log Removal Credit granted for filtration, $LRV_{ambient}$ must be ≥ LRC.

Date/Time and membrane unit(s) affected		Pressure Decay Rate (PDR) [$^{psi}/_{min}$]: **0.04**			LRC: **4.00**	
Date/Time	Membrane unit/skid/cell ID#	Turbidity level > 0.15 NTU resulting in DIT [NTU]	Corrective action	DIT Re-test Results [$^{psi}/_{min}$]	Return-to-service turbidity [NTU]	Return-to-service $LRV_{ambient}$ [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 $LRV_{ambient}$ ≥ LRC? (Enter Yes or No) ⇨	

Name: _____

Signature: _____ **Date:** _____

Phone #: _____ **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.

Return by 10th of following month by email, fax, or mail to:
dwp.dmce@odhsoha.oregon.gov; 971-673-0458; or Drinking Water Services, PO Box 14350, Portland, OR 97293-0350

Definitions & Additional Information

Glossary of Terms:

CFE = Combined Filter Effluent **IFE** = Individual Filter Effluent
PDR = Pressure Decay Rate ≅ **DIT** = Direct Integrity Test **LRC** = Log Removal Credit
LRV = Log Removal Value **TMP** = Transmembrane Pressure
Cl_2 = Chlorine **CT** = chlorine **C**oncentration x contact **T**ime

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$LRV_{ambient}$: The preferred performance metric Oregon is moving towards

$LRV_{ambient}$ is a performance metric of the filter's *Cryptosporidium* removal efficiency; [log] units.
$LRV_{ambient}$ is calculated using the last DIT results & operating condtions (e.g., flow, temp. & TMP)
A filter whose $LRV_{ambient}$ is less than the LRC must be taken off-line, repaired and then re-tested.
$LRV_{ambient}$ is an LRV calculated using most recent DIT results (e.g., PDR in $^{psi}/_{min}$), current filter flowrate, water temperature, and TMP.
An $LRV_{ambient}$ 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 $^{psi}/_{min}$ measured for DITs of all operating filters in a day.
A filter whose PDR exceeds the PDR_{Max} must be taken off-line, repaired and re-tested.
(PDR_{Max} 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

Revised 7/31/2023