Mattawa Drinking Water System

Schedule 22

2021 SUMMARY REPORT

FOR MUNICIPALITIES

Schedule 22 - SUMMARY REPORTS FOR MUNICIPALITIES

1.0 Introduction

Drinking-Water System Name:	**MATTAWA DRINKING WATER SYSTEM**
Municipal Drinking Water Licence (MDWL) No.:	195-101-4 (issued December 3, 2021)
Drinking Water Work Permit (DWWP) No.:	195-201-3 (issued December 3, 2021)
Permit to Take Water (PTTW) No.:	1546-9GHPLM (issued February 27, 2014)
Period being reported:	January 1, 2021 to December 31, 2021

2.0 Requirements the System Failed to Meet

The last MECP inspection report dated January 19, 2022 is pending at the time of this report. Additional (if any) non-compliance findings will be included in next year's annual report.

According to information kept on record by OCWA; there was one non-compliance issue that occurred during 2021.

Loss of historical UV Transmittance (UVT) trending:
The in plant SCADA computer has never had the five minute UVT data trended. In recent years, OCWA took over operations of the Mattawa WTP and installed a remote monitoring system "Wonderware" shortly after. Wonderware has the capability to capture and store five minute readings for UVT; however, due to PLC malfunction at plant, Wonderware was down from November 11, 2021 to December 1, 2021. Therefore, there was not a historical record of five minute readings for UVT for the time period mentioned above. Wonderware data was not recoverable, contacted OCWA Service Desk. Due to COVID and global supply chain issues, ordering parts is becoming increasingly more difficult. As soon as replacement part arrived issue was repaired. The in plant SCADA did record the min/max/avg UVTs for the day from the Optiview unit onsite; however, the data was not stored in five minute trends on SCADA. February 18, 2022 programming updates made to SCADA to now include the five minute (min) trends with the UV intensity. Wonderware continues to function as back-up to SCADA.

3.0 Summary of Quantities and Flow Rates

Flow Monitoring

MDWL No. 195-101 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

- the flow rate and daily volume of treated water that flows from the treatment subsystem the distribution system, and
- the flow rate and daily volume of water that flows into the treatment subsystem.

The flow monitoring equipment identified in the MDWL is present and operating as required. The flow meter is calibrated on an annual basis as specified in the manufacturers' instructions.

Water Usage

The following water usage tables summarize the quantities and flow rates of water taken and produced during the 2021 reporting period, including total monthly volumes, average monthly volumes, maximum monthly volumes, and maximum flow rates.

Raw Water

2021 - Monthly Summary of Water Takings from the Source (Well #1)
Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m^3)	37760	32493	35149	33075	37572	45986	41180	40656	32225	33314	37329	43771	450509
Average Volume (m^3/d)	1218	1160	1134	1103	1212	1533	1328	1311	1074	1075	1244	1412	1234
Maximum Volume (m^3/d)	1590	1397	1426	1378	1534	2012	1614	1696	1500	1337	1709	1749	2012
PTTW - Maximum Allowable Volume (m^3/day)	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582
Maximum Flow Rate (L/min)	4768	4825	5927	4413	4738	4279	5132	5617	4264	4066	4941	4429	5927
PTTW - Maximum Allowable Flow Rate (L/min)	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183

Well #1 experiences false peaks.

2021 - Monthly Summary of Water Takings from the Source (Well #2)
Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m^3)	4917	4737	5684	5459	4767	2505	2898	4942	4693	3810	3641	5965	54019
Average Volume (m^3/d)	159	169	183	182	154	83	93	159	156	123	121	192	148
Maximum Volume (m^3/d)	437	449	461	434	431	427	385	445	420	438	590	429	590
PTTW - Maximum Allowable Volume (m^3/day)	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964
Maximum Flow Rate (L/min)	1349	1241	1328	1315	1336	1332	1742	1742	1335	1296	1351	1316	1742
PTTW - Maximum Allowable Flow Rate (L/min)	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364

Well #2 only had a few potentially false peaks on start up.

2021 - Monthly Summary of Combined Water Takings from the Source (Well #1 and Well #2)
Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m^3)	42678	37229	40833	38534	42339	48490	44078	45598	36918	37124	40970	49736	504528
Average Volume (m^3/d)	1377	1330	1317	1284	1366	1616	1422	1471	1231	1198	1366	1604	1382
Maximum Volume (m^3/d)	1693	1548	1655	1601	1664	2057	1681	1827	1912	1441	1829	2006	2057
PTTW - Maximum Allowable Volume (m^3/day)	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546

The system's Permit to Take Water #1546-9GHPLM, allows the Municipality to withdraw water at the following rates:

Well No. 1:	4582.08 m^3/day / 3183 L/minute
Well No. 2:	1964.16 m^3/day / 1364 L/minute
Total Combined Daily Volume:	6546.24 m^3/day

The system's Permit to Take Water #1546-9GHPLM allows the municipality to withdraw a maximum volume of 4582.08 m^3 from Well No. 1 and 1964.16 m^3 from Well No. 2 each day with a maximum of 6456.24 m^3/d combined. A review of the raw water flow data indicates that the system never exceeded this allowable limit having a maximum volume of 2057 m^3 in June 2021. The Permit also allows a maximum flow rate of 3183 L/minute for Well No. 1 and 1364 L/minute for Well No. 2. Since VFD installed, Well 2 only has the odd potentially false peak on start up. Well 1 experiences false peaks on start-up and switch over, having a maximum recorded flow of 5927 L/minute in March 2021 for Well 1 and 1742 L/minute in July/August 2021 for Well 2.

Treated Water

2021 - Monthly Summary of Treated Water Supplied to the Distribution System

Regulated by Municipal Drinking Water Licence (MDWL) #195-101 - Issue 4, issued December 3, 2021

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m^3)	42678	37229	40833	38534	42339	48490	44078	45598	36918	37124	40970	49736	504528
Average Volume (m^3/d)	1377	1330	1317	1284	1366	1616	1422	1471	1231	1198	1366	1604	1382
Maximum Volume (m^3/d)	1693	1548	1655	1601	1664	2057	1681	1827	1912	1441	1829	2006	2057
MDWL - Rated Capacity (m^3/day)	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540

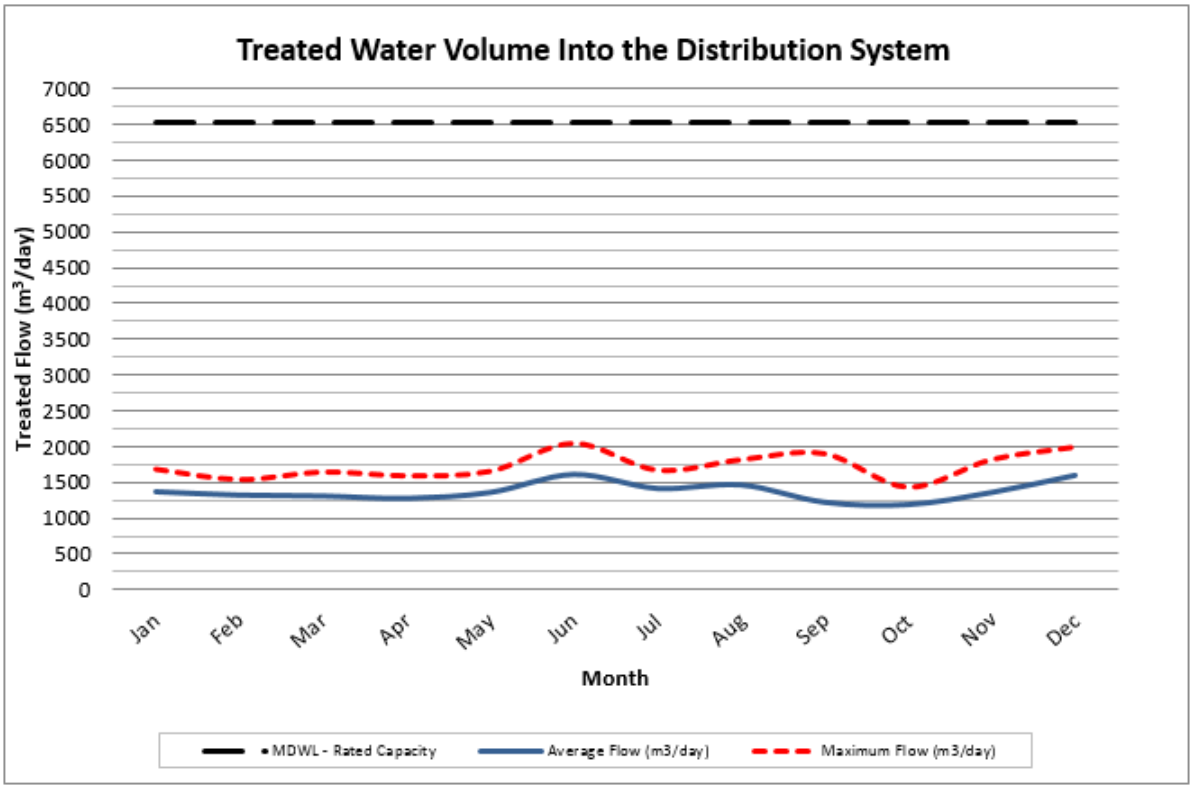
Schedule C, Section 1.1 of MDWL No. 195-101 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a maximum flow rate of 6540 m^3/day. The Mattawa DWS complied with this limit having a recorded maximum volume of 2057 m^3 in June 2021, which is 31.5% of the rated capacity.

Figure 1 compares the average and maximum flow rates into the distribution system to the rated capacity of the system identified in the MDWL. This information enables the Owner to assess the system's existing and future planned water usage needs.

Comparison of the Flow Summary to the Systems Licence & Permit

Rated Capacity of the Plant (MDWL)	6540 m^3/day	
Average Daily Flow for 2021	1382 m^3/day	21.1% of the rated capacity
Maximum Daily Flow for 2021	2057 m^3/day	31.5% of the rated capacity
Total Treated Water Produced in 2021	504,528 m^3	

The Mattawa Water Treatment Plant is rated to produce 6540 cubic meters of water per day as specified in the system's Municipal Drinking Water Licence. The average daily flow was 1382 m^3 per day, which is 21.1% of the rated capacity. This information clearly shows that the plant is well within its rated capacity and is able to meet current demands of consumers.



CONCLUSION

In 2021, according to information kept on record by OCWA, the Mattawa DWS provided safe and reliable drinking water to the community of Mattawa. The system complied with the regulatory requirements of the Safe Drinking Water Act and its Regulations and met the terms and conditions outlined in its site specific drinking water works permit and municipal drinking water licence. With the exception of one non-compliance issue noted above in Section 2.0. However, the annual MECP inspection took place on January 19, 2022 and the inspection report is pending at the time of this report. Furthermore, the Mattawa DWS did not have any adverse water quality incidents reported to the MOE's Spills Action Centre.

APPENDIX A

Monthly Summary of Microbiological Test Results

Mattawa Drinking Water System
Monthly Summary of Microbiological Test Results

From: 01/01/2021 to 31/12/2021

Report extracted 01/19/2022 12:18

Facility Org Number: 1517
Facility Works Number: 210001905
Facility Name: MATTAWA DRINKING WATER SYSTEM
Service Population: 2150.0
Total Design Capacity: 6540.0 m3/day

		01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	Total	Avg	Max	Min
DW / E. Coli - cfu/100mL																	
Count Lab		12	13	15	12	12	15	12	12	15	12	12	15	157			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
DW / HPC - cfu/mL																	
Count Lab		3	3	6	3	3	3	3	3	3	3	3	3	39			
Max Lab		1	1	0	4	1	5	0	0	0	0	7	0			7	
Mean Lab		0.333	0.333	0	1.333	0.333	3	0	0	0	0	2.667	0		0.615		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
DW / Total Coliform: TC - cfu/100mL																	
Count Lab		12	13	15	12	12	15	12	12	15	12	12	15	157			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
TW / E. Coli: EC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
TW / HPC - cfu/mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		4	2	6	1	0	2	1	1	2	13	5	1			13	
Mean Lab		1	0.5	1.8	0.25	0	0.8	0.25	0.25	0.4	3.6	1.5	0.4		0.943		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
TW / Total Coliform: TC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
Well #1 / E. Coli: EC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
Well #1 / Total Coliform: TC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
Well #2 / E. Coli: EC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0
Well #2 / Total Coliform: TC - cfu/100mL																	
Count Lab		4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab		0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab		0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab		0	0	0	0	0	0	0	0	0	0	0	0				0

APPENDIX B

Monthly Summary of Operational Data

Mattawa Drinking Water System
Monthly Operational Data

From: 01/01/2021 to 31/12/2021

Report extracted 02/15/2022 15:41

Facility Org Number: **1517**

Facility Works Number: **210001905**

Facility Name: **MATTAWA DRINKING WATER SYSTEM**

Total Design Capacity: **6540.0 m3/day**

		01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	Total	Avg	Max	Min
DW / Cl Residual: Free DW1 - mg/L																	
Count IH		8	8	9	9	8	9	9	8	9	9	8	10	104			
Total IH		4.98	4.27	5.97	6.16	4.91	5.2	4.18	3.59	4.78	5.32	7.42	9.69	66.47			
Max IH		0.78	0.6	1.22	0.79	1.14	1.04	0.71	0.67	1.08	0.79	1.76	1.91			1.91	
Mean IH		0.622	0.534	0.663	0.684	0.614	0.578	0.464	0.449	0.531	0.591	0.928	0.969		0.639		
Min IH		0.42	0.4	0.23	0.58	0.31	0.44	0.29	0.25	0.26	0.35	0.5	0.46				0.23
DW / Cl Residual: Free DW2 - mg/L																	
Count IH		8	8	9	9	8	9	9	8	9	9	8	10	104			
Total IH		5.44	4.56	6.23	7.09	5.32	5.58	4.49	3.88	5.97	6.22	7.38	9.75	71.91			
Max IH		1.11	0.73	1.19	1.06	1.03	1.02	0.61	0.64	1.2	1.11	1.61	1.78			1.78	
Mean IH		0.68	0.57	0.692	0.788	0.665	0.62	0.499	0.485	0.663	0.691	0.923	0.975		0.691		
Min IH		0.39	0.38	0.41	0.65	0.3	0.34	0.35	0.35	0.21	0.39	0.4	0.54				0.21
DW / Cl Residual: Free DW3 - mg/L																	
Count IH		8	8	9	9	8	9	9	8	9	9	8	10	104			
Total IH		5.18	4.25	5.59	6.48	4.65	5.26	5.07	3.89	5.43	6.05	7.29	9.53	68.67			
Max IH		0.81	0.82	0.91	1.19	0.72	0.99	0.79	0.65	1.03	0.95	1.46	1.63			1.63	
Mean IH		0.648	0.531	0.621	0.72	0.581	0.584	0.563	0.486	0.603	0.672	0.911	0.953		0.66		
Min IH		0.41	0.38	0.3	0.42	0.4	0.38	0.39	0.31	0.31	0.4	0.61	0.57				0.3
DW / Cl Residual: Free DW4 - mg/L																	
Count IH		4	4	5	4	4	5	4	4	5	4	4	5	52			
Total IH		2.58	2.57	3.06	2.72	2.32	2.79	2.05	1.93	2.58	2.49	3.81	4.98	33.88			
Max IH		0.85	0.77	0.91	0.91	0.69	0.95	0.71	0.6	0.59	0.93	1.58	1.67			1.67	
Mean IH		0.645	0.643	0.612	0.68	0.58	0.558	0.513	0.482	0.516	0.623	0.953	0.996		0.652		
Min IH		0.51	0.54	0.35	0.5	0.45	0.39	0.4	0.41	0.44	0.48	0.48	0.6				0.35
Well #1 / Turbidity - NTU																	
Count IH		1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH		0.28	0.3	0.3	0.33	0.32	0.29	0.3	0.28	0.28	0.27	0.28	0.25			0.33	
Mean IH		0.28	0.3	0.3	0.33	0.32	0.29	0.3	0.28	0.28	0.27	0.28	0.25		0.29		
Min IH		0.28	0.3	0.3	0.33	0.32	0.29	0.3	0.28	0.28	0.27	0.28	0.25				0.25
Well #2 / Turbidity - NTU																	
Count IH		1	1	1	1	1	1	1	1	1	1	1	1	12			
Max IH		0.25	0.28	0.31	0.29	0.3	0.31	0.31	0.31	0.3	0.27	0.26	0.31			0.31	
Mean IH		0.25	0.28	0.31	0.29	0.3	0.31	0.31	0.31	0.3	0.27	0.26	0.31		0.29		
Min IH		0.25	0.28	0.31	0.29	0.3	0.31	0.31	0.31	0.3	0.27	0.26	0.31				0.25