

SHALLOW LAKE DRINKING WATER SYSTEM

PERFORMANCE REPORT

For the period of JANUARY 1, 2023 to OCTOBER 31, 2023

Prepared by: Karla Young, Process & Compliance Technician Reviewed by: Leo-Paul Frigault, Senior Operations Manager



1. Process Performance & Regulatory Compliance

1.1 Summary of Non-Compliances & AWQIs

From January 2023 to October 2023:

- Number of Non-Compliances = **0**
- Number of Adverse Water Quality Incidents (AWQIs) = 0

The table below summarizes Shallow Lake DWS' performance in accordance with the regulatory limits set out in:

- Municipal Drinking Water License (MDWL) 083-102, Issue: 4 (expires August 13, 2026)
- Permit To Take Water (PTTW) 5165-9KBQ6V (expires May 31, 2024)
- Ontario Regulation 170/03 and 169/03

2023	Non-Compliances	AWQIs
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November		
December		

Description of Non-Compliances

The following is a summary of the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the time period covered by this report; as well as the duration of the failure and the measures that were taken to correct the failure:

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
n/a	n/a	n/a

Description of AWQIs

The following contains details on notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to the Spills Action Centre:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

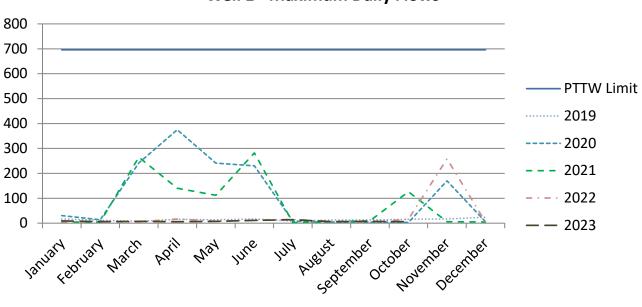
1.1.1 Flow

Raw Water: Well 1 (PW2)

During the reporting period, the Well 1 (PW2) raw water taking was **within the limits** of the current PTTW.

2023	Maximum Flowrate (L/s)	Within Limits (8.05 L/s*)	Maximum Daily Flow (m ³ /day)	Within Limits (696 m ³)
January	6.02	Yes	9	Yes
February	6.18	Yes	6	Yes
March	6.20	Yes	7	Yes
April	6.15	Yes	6	Yes
May	6.73	Yes	7	Yes
June	6.79	Yes	11	Yes
July	6.67	Yes	14	Yes
August	6.70	Yes	6	Yes
September	6.68	Yes	7	Yes
October	6.93	Yes	6	Yes
November				
December				

*The PTTW defines the maximum flowrate as 483 L/min which has been converted it to 8.05 L/s for the table above.



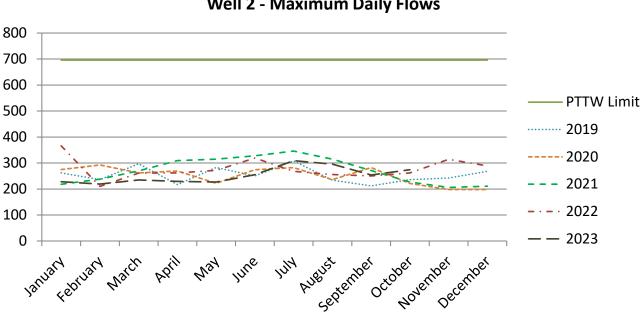
Shallow Lake Drinking Water System Well 1 - Maximum Daily Flows

Raw Water: Well 2 (PW3)

During the reporting period, the Well 2 (PW3) raw water taking was **within the limits** of the current PTTW.

2023	Maximum Flowrate (L/s)	Within Limits (8.05 L/s*)	Maximum Daily Flow (m ³ /day)	Within Limits (696 m ³)
January	6.60	Yes	228	Yes
February	6.27	Yes	219	Yes
March	6.27	Yes	235	Yes
April	7.08	Yes	229	Yes
May	7.05	Yes	227	Yes
June	7.12	Yes	255	Yes
July	6.50	Yes	309	Yes
August	6.18	Yes	296	Yes
September	6.45	Yes	254	Yes
October	6.79	Yes	274	Yes
November				
December				

*The PTTW defines the maximum flowrate as 483 L/min which has been converted it to 8.05 L/s for the table above.



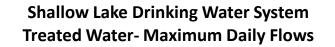
Shallow Lake Drinking Water System Well 2 - Maximum Daily Flows

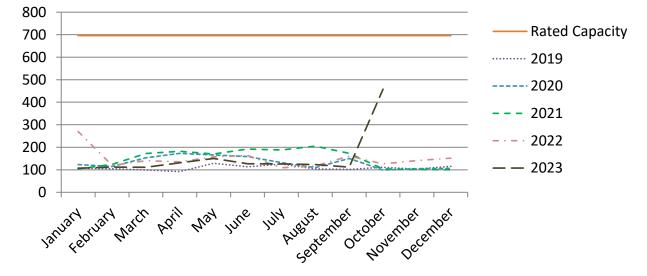
Treated Water

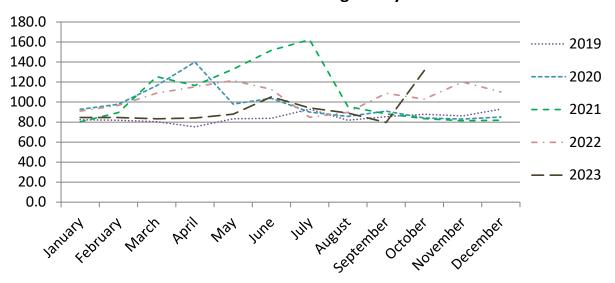
During the reporting period, the Shallow Lake DWS operated **within the rated capacity** set out in current MDWL.

2023	Average Flow (m ³ /d)	% of Rated Capacity	Maximum Flow (m ³ /d)	% of Rated Capacity	Within Limits (696 m ³ /d)
January	84.6	12.2%	107	15.4%	Yes
February	84.5	12.1%	112	16.1%	Yes
March	83.2	12.0%	111	15.9%	Yes
April	84.1	12.1%	131	18.8%	Yes
May	87.9	12.6%	150	21.6%	Yes
June	105.2	15.1%	127	18.2%	Yes
July	94.1	13.5%	126	18.1%	Yes
August	89.0	12.8%	123	17.7%	Yes
September	79.6	11.4%	112	16.1%	Yes
October	131.6	18.9%	458*	65.8%	Yes
November					
December					

*Due to operational issues.







Shallow Lake Drinking Water System Treated Water- Average Daily Flows

1.1.1 Water Quality

Microbiological Testing

		E.C	oli (cfu/100n	nL)	Total Coliforms (cfu/100mL)		
2023	# of Samples	Minimum	Maximum	Within Limits?	Minimum	Maximum	Within Limits?
January	5	0	20	n/a	18	200	n/a
February	4	<20	<20	n/a	<2	<20	n/a
March	4	<20	<20	n/a	60	180	n/a
April	4	<20	NDOGT**	n/a	<20	NDOGT**	n/a
May	5	<1	<20	n/a	32	120	n/a
June	4	<20	NDOGT**	n/a	40	NDOGT**	n/a
July	5	20	NDOGT**	n/a	60	NDOGT**	n/a
August	4	3	NDOGT**	n/a	19	NDOGT**	n/a
September	4	0	40	n/a	15	80	n/a
October	5	<20	NDOGT**	n/a	60	NDOGT**	n/a
November							
December							

Raw Water*: Well 1 (PW2)

*Raw water bacteriological samples do not have regulatory limits. **NDOGT-No Data: Overgrown with Target Bacteria.

Raw Water*: Well 2 (PW3)

		E.C	oli (cfu/100n	nL)	Total Co	liforms (cfu/	100mL)
2023	# of Samples	Minimum	Maximum	Within Limits?	Minimum	Maximum	Within Limits?
January	5	1	20	n/a	32	80	n/a
February	4	<20	<180	n/a	61	100	n/a
March	4	1	8	n/a	50	104	n/a
April	4	0	1	n/a	28	125	n/a
May	5	0	<20	n/a	31	280	n/a
June	4	0	<20	n/a	20	62	n/a
July	5	0	51	n/a	20	72	n/a
August	4	2	11	n/a	10	27	n/a
September	4	1	11	n/a	15	65	n/a
October	5	0	80	n/a	9	540	n/a
November							
December							

*Raw water bacteriological samples do not have regulatory limits.

Treated Water

2023	# of	(0	E. Co cfu/10			tal Colif cfu/100		HP	C** (cfu/	′1mL)
2023	Samples	Min	Max	Within Limits?	Min	Max	Within Limits?	Min	Max	Within Limits?
January	5	0	0	Yes	0	0	Yes	0	0	n/a
February	4	0	0	Yes	0	0	Yes	0	0	n/a
March	4	0	0	Yes	0	0	Yes	0	0	n/a
April	4	0	0	Yes	0	0	Yes	0	0	n/a
May	5	0	0	Yes	0	0	Yes	0	0	n/a
June	4	0	0	Yes	0	0	Yes	0	0	n/a
July	5	0	0	Yes	0	0	Yes	0	0	n/a
August	4	0	0	Yes	0	0	Yes	0	1	n/a
September	4	0	0	Yes	0	0	Yes	0	0	n/a
October	5	0	0	Yes	0	0	Yes	0	0	n/a
November										
December										

**There is no regulatory limit for Heterotrophic Plate Count (HPC); it is used as an indicator test.

Distribution Water

2023 # of Samples			E. Co (0 cfu/10		Total Coliforms (0 cfu/100mL)		
	Samples	Min	Max	Within Limits?	Min	Max	Within Limits?
January	10	0	0	Yes	0	0	Yes
February	8	0	0	Yes	0	0	Yes
March	8	0	0	Yes	0	0	Yes
April	8	0	0	Yes	0	0	Yes
May	10	0	0	Yes	0	0	Yes
June	8	0	0	Yes	0	0	Yes
July	10	0	0	Yes	0	0	Yes
August	8	0	0	Yes	0	0	Yes
September	8	0	0	Yes	0	0	Yes
October	10	0	0	Yes	0	0	Yes
November							
December							

		HPC*	* (cfu/1mL)	
	# of Samples	Min.	Max.	Within Limits?
January	5	0	3	n/a
February	4	0	1	n/a
March	4	0	4	n/a
April	4	0	88	n/a
May	5	0	9	n/a
June	4	0	19	n/a
July	5	0	5	n/a
August	4	0	2	n/a
September	4	0	>2000	n/a
October	5	0	15	n/a
November				
December				

**There is no regulatory limit for Heterotrophic Plate Count (HPC); it is used as an indicator test. At least 25% of distribution samples must be tested for Heterotrophic Plate Count (HPC).

Operational Testing

Filter Effluent: Turbidity

2023	Filter #1 Tu	rbidity (NTU)	Filter #2 Tu	rbidity (NTU)
2025	Minimum	Maximum	Minimum	Maximum
January	0.02	0.64	0.02	0.34
February	0.03	0.72	0.03	0.43
March	0.03	0.83	0.03	0.23
April	0.02	0.63	0.03	0.28
May	0.05	0.60	0.05	0.34
June	0.04	0.58	0.05	0.41
July	0.02	0.51	0.03	0.34
August	0.02	0.28	0.03	0.12
September	0.02	0.24	0.03	0.10
October	0.02	0.63	0.03	0.45
November				
December				

Filter Effluent: Efficiency

	Filte	er #1	Filter #2		
2023	Efficiency	Within Limits?	Efficiency	Within Limits?	
	(% <u><</u> 0.3 NTU)	(<u>></u> 95%)	(% <u><</u> 0.3 NTU)	(<u>></u> 95%)	
January	99.85%	Yes	99.99%	Yes	
February	99.78%	Yes	99.98%	Yes	
March	99.88%	Yes	100%	Yes	
April	99.95%	Yes	100%	Yes	
May	99.90%	Yes	99.96%	Yes	
June	99.70%	Yes	99.85%	Yes	
July	99.97%	Yes	99.93%	Yes	
August	100%	Yes	100%	Yes	
September	100%	Yes	100%	Yes	
October	98.49%	Yes	98.40%	Yes	
November					
December					

Distribution Water: Free Chlorine Residual

2023	Minimum	Maximum	Within Limits?
2023	(mg/L)	(mg/L)	(>0.05 mg/L)
January	0.44	1.60	Yes
February	0.37	1.62	Yes
March	0.80	1.69	Yes
April	0.69	1.45	Yes
May	0.66	1.24	Yes
June	0.64	1.20	Yes
July	0.67	1.33	Yes
August	0.64	1.50	Yes
September	0.74	1.41	Yes
October	0.28	1.66	Yes
November			
December			

Chemical Testing

Treated Water: Nitrites (Quarterly)

2023	Concentration (mg/L)	Within Limits? (1 mg/L)
January	<0.003	Yes
February	-	-
March	-	-
April	<0.003	Yes
May	-	-
June	-	-
July	<0.003	Yes
August	-	-
September	-	-
October	<0.003	Yes
November	-	-
December	_	-

Treated Water: Nitrates (Quarterly)

2023	Concentration (mg/L)	Within Limits? (10 mg/L)
January	0.647	Yes
February	-	-
March	-	-
April	0.926	Yes
May	-	-
June	-	-
July	0.290	Yes
August	-	-
September	-	-
October	0.320	Yes
November	-	_
December	-	_

Distribution Water: Trihalomethanes (THMs) (Quarterly)

2023	Concentration (ug/L)	Running Annual Average (ug/L)	Within Limits? (100 ug/L)
January	48.0	45.0	Yes
February	-	-	-
March	-	-	-
April	26.0	46.5	Yes
May	-	-	-
June	-	-	-
July	60.0	47.3	Yes
August	-	-	-
September	-	-	-
October	59.0	48.3	Yes
November	-	-	_
December	-	-	_

2023	Concentration (ug/L)	Running Annual Average (ug/L)	Within Limits? (80 ug/L)
January	37.9	26.9	Yes
February	-	-	-
March	-	-	-
April	20.7	28.8	Yes
May	-	-	-
June	-	-	-
July	25.5	29.3	Yes
August	-	-	-
September	-	-	-
October	34.1	29.6	Yes
November	-	-	-
December	-	-	-

Distribution Water: Haloacetic Acids (HAAs) (Quarterly)

Distribution Water: Lead, pH and Alkalinity (Semi-Annual)

Semi-Annual sampling is required to happen twice a year; once in the period from December 15th to April 15th and once in the period June 15th to October 15th for lead, pH and Alkalinity.

	# of		рН		Alkalinity (mg/L)					
	# OI Samples	Min	Max	Within Limits? (10 ug/L)	Min	Max	Within Limits?	Min	Max	Within Limits? (30-500 mg/L)
January	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-
March	2	-	-	-	7.61	7.73	Yes	198	223	Yes
April	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-
September	2	-	-	-	7.40	7.41	Yes	264	272	Yes
October	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	_	-	-	_
December	-	-		_	_	-	_		-	-

Treated Water: Schedule 23 & Schedule 24 (Annual)

Treated water Inorganic and Organic chemicals were last tested on **January 30, 2023**, the sample results were **within the regulatory limits** set out in O.Reg 169/03. The next set of Schedule 23 and Schedule 24 samples are scheduled to be taken in **January 2024**.

Treated Water: Sodium (60 Months)

No samples were for Sodium and Fluoride were required to be taken during the reporting period.

Treated water Sodium was last sampled on **April 12, 2021** and was within regulatory limits. The next set of Sodium samples are scheduled for **April 2026**.

Treated Water: Fluoride (60 Months)

Treated water Fluoride was last sampled on **April 12, 2021** and was within regulatory limits. The next set of Sodium samples are scheduled for **April 2026**.

1.2 Reporting

A summary of the reports submitted by OCWA to/on behalf of the Township are summarized in the table below:

Report	Submission Frequency	Submit To	Submission Date	
Annual Report (Section 11)	Annually	Owner	February 28, 2023	
Summary Report (Schedule 22)	Annually	Owner	February 28, 2023	

1.2.1 Annual Report (Section 11)

As required by Section 11 of O. Reg 170/03, OCWA prepares a report for the Township that covers the period from January 1 to December 31 by no later than February 28 of the following year. The annual report must:

- a) contain a brief description of the drinking water system, including a list of water treatment chemicals used by the system during the period covered by the report;
- b) summarize any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16 during the period covered by the report;
- c) summarize the results of tests required under this Regulation, or under an approval, municipal drinking water licence or order, including an OWRA order, during the period covered by the report and, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;
- d) describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report;
- e) describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment;
- f) in the case of a large municipal residential system or a small municipal residential system, include a statement of where a report prepared under Schedule 22 will be available for inspection under subsection 12 (4); and
- g) in the case of a large municipal residential system, small municipal residential system or nonmunicipal year-round residential system, specify the number of points sampled during the periods described in subsection 15.1-4 (2) or subsection 15.1-5 (5) of Schedule 15.1 to the

Regulation, the number of samples taken, and the number of points where a sample exceeded the prescribed standard for lead during those periods. O. Reg. 170/03, s. 11 (6); O. Reg. 418/09, s. 8; O. Reg. 458/16, s. 6 (1).

"The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. If a drinking water system is connected to and receives all of its drinking water from another drinking water system, the owner of the system that obtains the water shall ensure that a copy of an annual report for the system from which the water is obtained is given, without charge, to every person who requests a copy. Every time that an annual report is prepared for a drinking water system, the owner of the system shall ensure that effective steps are taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained. If the DWS serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet."

1.2.2 Summary Report (Schedule 22)

As required by Schedule 22 of O. Reg 170/03 OCWA prepares a report on behalf of the Township by no later than March 31 each year for the preceding year. This report is to be given to members of council. "The report must,

- a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; and
- b) for each requirement referred to that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

- 1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- 2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement."

1.3 Third Party Inspections & Results

The most recent MECP inspection was performed on **August 24, 2023**. The inspection report was received on September 21, 2023 with an inspection rating of **100%**.

1.4 Drinking Water Quality Management Standard (DWQMS)

The Shallow Lake DWS, East Linton DWS, Pottawatomi DWS and Oxenden DS are part of a Multi-Facility Operational Plan under DWQMS. The following sections (Risk Assessment, Review & Provision of Infrastructure, Internal Audits, External Audits and Management Review) will apply to all of the above mentioned facilities.

1.4.1 Risk Assessment

As required by the DWQMS, potential hazardous events and associated risks are ranked and control measures/critical control points are identified during the risk assessment process. A risk assessment is conducted at least once every 36 months and the currency of the risk assessment is verified at least once a calendar year. The risk assessment verification is included as part of the 36 month risk assessment process.

The last risk assessment was performed on **March 10, 2022**; the next risk assessment is scheduled for March 2025. The last risk assessment verification was performed on **August 27, 2021**; the next risk assessment verification is scheduled for November 2023.

1.4.2 Review & Provision of Infrastructure

On an annual basis, Operators submit a list of capital works requirements to the Senior Operations Manager. The Senior Operations Manager conducts a review of the drinking water system's infrastructure to assess its adequacy for the operation and maintenance of the system.

The output of the review is a Summary of Capital Works Recommendations that is submitted to the owner for review and comment (typically in the fall). Together with the owner, timelines and responsibilities for implementation of priority items are determined and documented. The Senior Operations Manager ensures that results of the review are included as input to the Management Review process.

1.4.3 Internal Audits

As required by DWQMS, internal audits are to be conducted once every calendar year. The last internal audit was completed on **July 14, 2023.** The next internal audit is scheduled for **July 2024**. The purpose of the internal audit is to ensure that the requirements of DWQMS continue to be met, and that concrete/measurable steps are taken to continually improve.

1.4.4 External Audits

Annually, an external audit is performed by a third-party (SAI Global) so that the Operating Authority may maintain their accreditation of the facility. The external audits run on a 3 year cycle as follows:

- Full scope (re)accreditation
- S1: Surveillance Audit
- S2: Surveillance Audit

The Shallow Lake DWS, East Linton DWS, Pottawatomi DWS and Oxenden DS underwent a **Reaccreditation Audit on August 8, 2023**.

1.4.5 Management Review

The Management Review is to be conducted at least once every calendar year. The most current Management Review was completed on **November 23, 2022**; the next Management Review is scheduled for **November 2023**. During the management review, participants are required to review:

a. incidents of regulatory non-compliance,

- b. incidents of adverse drinking-water tests,
- c. deviations from critical control point limits and response actions,
- d. the efficacy of the risk assessment process,
- e. internal and third-party audit results,
- f. results of emergency response testing,
- g. operational performance,
- h. raw water supply and drinking water quality trends,
- i. follow-up on action items from previous management reviews,
- j. the status of management action items identified between reviews,
- k. changes that could affect the Quality Management System,
- I. consumer feedback,
- m. the resources needed to maintain the Quality Management System,
- n. the results of the infrastructure review,
- o. Operational Plan currency, content and updates, and
- p. staff suggestions.

The minutes from the Management Review will be sent to the Township following the completion of the review.

2. **Operations & Maintenance**

2.1 Major & Unscheduled Maintenance

January

4: Waste truck on site to pump out brine tank

February

15: Replaced potassium permanganate injection tubing

March

- **13:** Replaced 3 way solenoid valve on Ion unit #1
- **14:** Flow meter verification
- **31:** Water shut off and turn on at 48 McInnis St

April

No major or unscheduled maintenance during this time period. All scheduled maintenance completed.

May

- **24:** Third party calibrations
- 25: Fire alarm system inspection
- 30: Third party calibrations

June

26: Replaced compression fitting in potassium permanganate dosing line

July

- **15:** Replace chlorine analyzer sample pump head
- 25: Replaced light bulb and cleaned and flushed colorimeter
- **28:** Changed compression fitting on hypochlorite dosing pump #2

August

- 02: Clearwell inspection and cleaning
- 08: External audit
- 15: Repaired flow meter
- 24: MECP Inspection
- **30:** Replaced leaking chlorine injection fitting

September

- **19:** Huronia Environmental on site to collect brine waste
- 26: Cook's Plumbing on site to rebuild ion exchange unit #2

October

- **19:** Flowmetrix on site to replace flow meter transmitter
- 24: Rescaled discharge flow meter

2.2 Call-Ins

January

21: Pump Failure

February

No call-ins during this period.

March

- 04: General Alarm
- 14: General Alarm

April

13: Fire pump running

May

No call-ins during this period.

June

- 18: Filter 1 High Turbidity Alarm
- 24: General Alarm

July

- 12: General Alarm
- 15: Low Clearwell Chlorine Alarm
- 17: General Alarm
- 23: General Alarm

August

17: High lift pump failure

September

- **15:** High lift pump failure
- 26: General alarm

October

- **16:** Filter #1 high turbidity alarm
- **18:** Low chlorine alarm
- 22: Potassium Permanganate sensor alarm
- 24: Filter #1 high turbidity alarm

2.3 Community Complaints

January

There were no complaints or public inquiries reported to OCWA staff during this month.

February

15: High water pressure complaint at 48 McInnis St. Water pressure at household was the same as the distribution system. It was concluded that the problem was within the household.

March

There were no complaints or public inquiries reported to OCWA staff during this month.

April

There were no complaints or public inquiries reported to OCWA staff during this month.

May

There were no complaints or public inquiries reported to OCWA staff during this month.

June

There were no complaints or public inquiries reported to OCWA staff during this month.

July

There were no complaints or public inquiries reported to OCWA staff during this month.

August

There were no complaints or public inquiries reported to OCWA staff during this month.

September

There were no complaints or public inquiries reported to OCWA staff during this month.

October

There were no complaints or public inquiries reported to OCWA staff during this month.

3.0 Health & Safety

3.1 Incidents

• Number of Health & Safety Incidents Reported = 0

2022	Health & Safety Incidents				
2023	# Reported	Details			
January	0	n/a			
February	0	n/a			
March	0	n/a			
April	0	n/a			
May	0	n/a			
June	0	n/a			
July	0	n/a			
August	0	n/a			
September	0	n/a			
October	0	n/a			
November					
December					

3.2 Training

The following safety topics/training were provided to staff:

2023	Topics
January	Hand Protection
February	Hearing Conservation
March	Discovery of Asbestos Topic
IVIAICII	Eyewash Requirements
April	Identifying Noise Levels in the Workplace
May	Slips, Trips and Falls
June	Water Safety
Julie	OHS Reporting
July	Discovery of Asbestos
August	 Work Planning and Tailgate Meetings
September	Lone Worker Protection
October	Carbon Monoxide
October	Hearing Protection
November	
December	