Lutterworth Pines Drinking Water System

Waterworks # 260091936
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The Township of Minden Hills

Reporting Period of January 1st – December 31st 2024

Issued: February 24, 2025

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22

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Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the Township of Minden Hills Municipal Office. Notification will be at the Municipal Office and copies provided free of charge if requested. The Township of Minden Hills Municipal Office is located at 7 Milne Street in Minden, Ontario.

Compliance Report Card

Drinking Water System Number: 260091936
Drinking Water System Name: Lutterworth Pines DWS
Drinking Water System Owner: Township of Minden Hills
Drinking Water System Category: Small Municipal Residential
Period Being Reported: January 1, 2024 - December 31, 2024

Health & Safety	# of Events	Date	Details
Number of Incidents	0	N/A	N/A

Drinking Water	# of Events	Date	Details
MECP Inspections	1	June 13, 2024	Unannounced-Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0	N/A	N/A
Number of Non-Compliances	0	N/A	N/A
Number of Boil Water Advisories	0	N/A	N/A

System Process Description

Raw Source

The Lutterworth Pines Water Treatment Plant is supplied with raw groundwater from two non-GUDI wells: Well # 1 and Well # 2.

Treatment

The treatment system consists of the following:

- Two drilled groundwater production wells deemed non-GUDI
- Raw and treated water flow meters
- Kinetico media vessel using ion exchange technology for the removal of uranium with

pre-treatment 20um cartridge filter
- Chemical feed system consisting of two metering pumps for primary and secondary disinfection with sodium hypochlorite solution
- Four 452L chlorine contact tanks
- Continuous online free chlorine residual monitoring of treated water prior to entering the distribution system
- Three 450L pressure tanks
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There was no adverse water quality incidents during the reporting period.						

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There was no non-compliance incidents during the reporting period.				

Flows

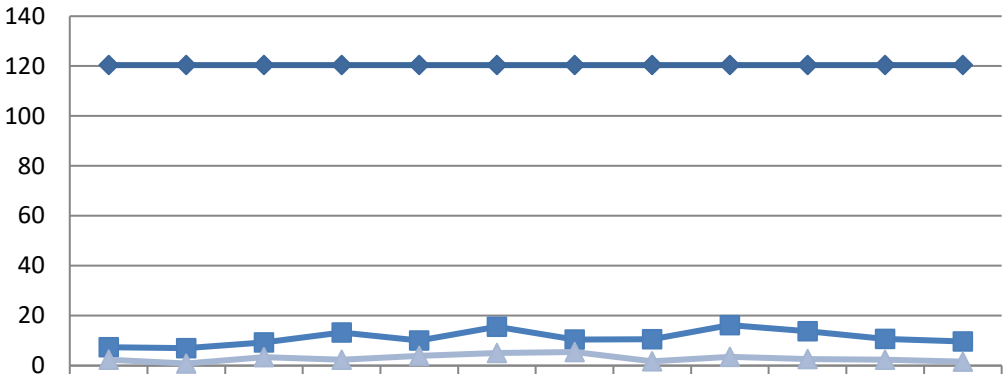
The Lutterworth Pines Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water takings are regulated by the Permit to Take Water (PTTW). 2024 Raw Flow Data was submitted to the Ministry electronically under permit No. 7458-B2JNYL.

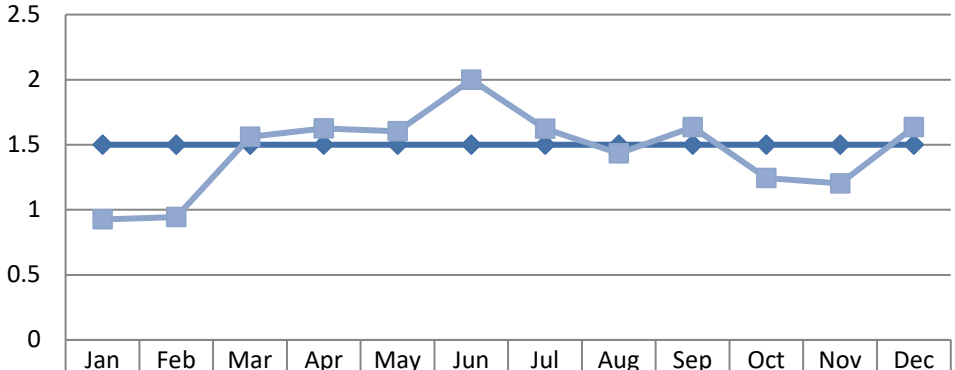
Total Monthly Flows (m3/d)

Max Allowable PTTW- Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4
Max Flow (m3/d)	7.4	7.0	9.3	13.2	10.0	15.5	10.4	10.5	16.2	13.7	10.7	9.6
Avg (m3/d)	2.3	0.8	3.4	2.3	3.9	5.1	5.4	1.7	3.5	2.6	2.3	1.6

Monthly Rated Flows (L/s)
Max allowable rate – PTTW- Well #1

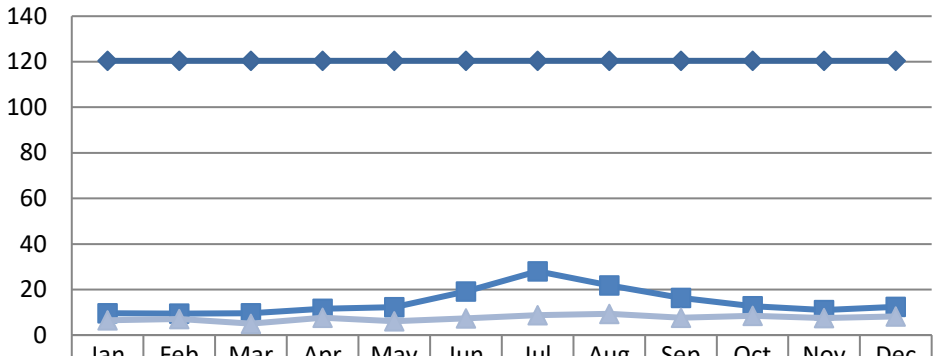


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Max Rate (L/s)	0.93	0.94	1.56	1.63	1.60	2.00	1.62	1.43	1.63	1.24	1.20	1.64

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The actual limit in the PTTW is 91L/min. Spikes were< 1minute and occurred at pump start up. The spike in June occurred during flow meter calibration.

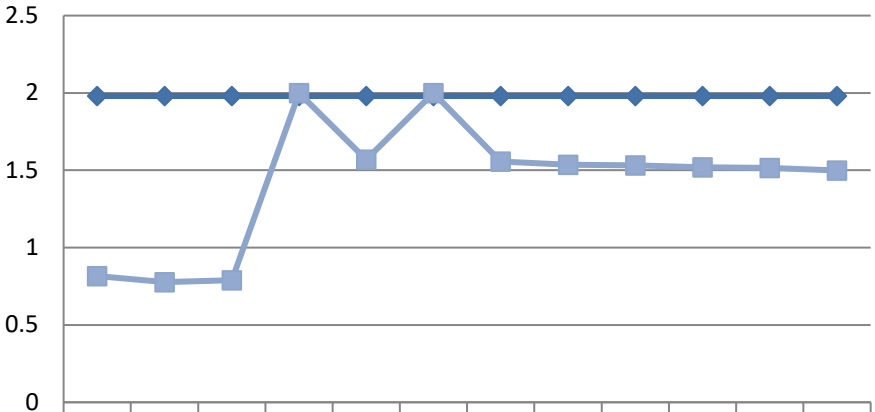
Total Monthly Flows (m3/d)

Max Allowable PTTW- Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4
Max Flow (m3/d)	9.5	9.4	9.6	11.6	12.3	19.2	28.0	21.9	16.3	12.7	11.0	12.4
Avg (m3/d)	6.5	7.1	5.0	7.6	6.1	7.4	8.8	9.3	7.6	8.5	7.5	8.2

Monthly Rated Flows (L/s)
Max allowable rate – PTTW- Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
Max Rate (L/s)	0.82	0.78	0.79	2.00	1.57	2.00	1.56	1.54	1.53	1.52	1.51	1.50

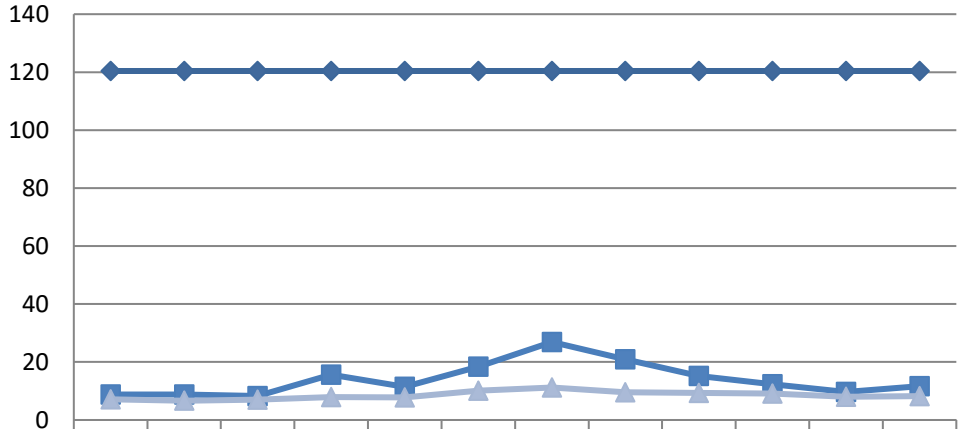
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). Spike in April was a result of flow meter replacement, and June was a result of flow meter calibration. The actual limit in the PTTW is 119 L/min.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence. The Lutterworth Pines DWS does not have a treated flow meter so the total raw water flows are used.

Monthly Rated Flows

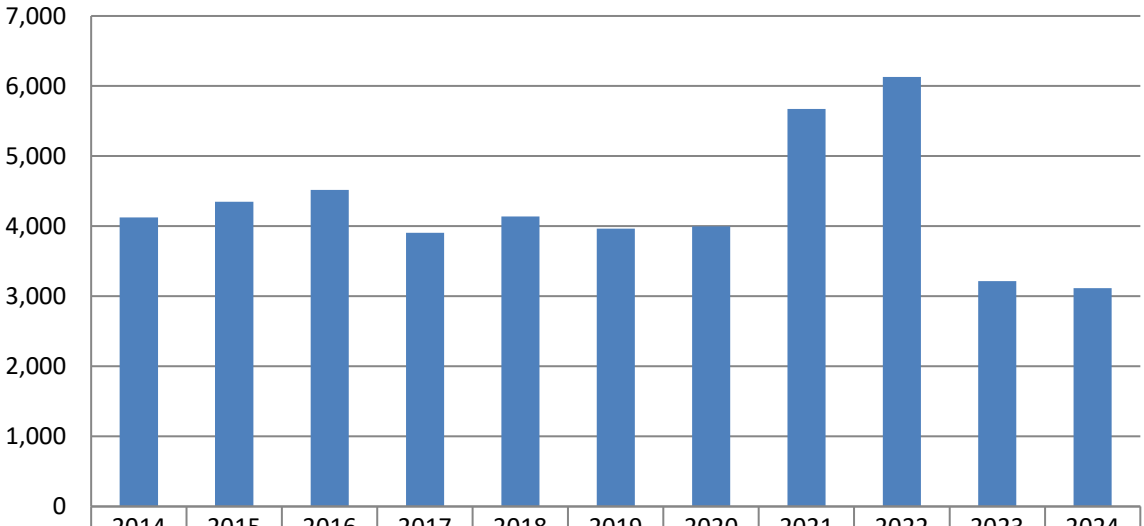
Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m3/d)	120	120	120	120	120	120	120	120	120	120	120	120
Max Daily Flow (m3/d)	8.8	8.8	8.3	15.6	11.5	18.4	26.9	21.0	15.1	12.4	9.6	11.7
Avg (m3/d)	7.2	6.6	7.0	7.9	7.8	10.1	11.2	9.5	9.4	9.1	8.0	8.3

Annual Total Flow Comparison

Total Annual m3



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WTP (m3)	4,125	4,347	4,518	3,907	4,140	3,963	3,997	5,674	6,131	3,218	3,117

Note: 2021 and 2022 higher flows due to distribution leaks.

Regulatory Sample Results Summary

Microbiological Testing

Location	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Well 1	12	0	0	0	0		
Raw Well 2	12	0	0	0	1		
Distribution	26	0	0	0	0	0	4

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Chlorine	8760	0.01	5.00
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples**.** Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03

Inorganic Parameters

These parameters are tested as a requirement under 170/03. Sodium, Fluoride and metals are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/06	0.3	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/06	16.6	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/06	128.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/06	0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/06	0.1	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/06	<MDL 0.04	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/06	1.66 *	20.0	No	No
Additional Inorganics					

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Fluoride (mg/L) - TW	2020/01/06	0.66	1.5	No	No
Nitrite (mg/L) - TW	2024/01/15	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/04/08	0.004	1.0	No	No
Nitrite (mg/L) - TW	2024/07/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/10/07	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2024/01/15	0.021	10.0	No	No
Nitrate (mg/L) - TW	2024/04/08	0.047	10.0	No	No
Nitrate (mg/L) - TW	2024/07/02	0.036	10.0	No	No
Nitrate (mg/L) - TW	2024/10/07	0.014	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/06	22.5	20**	Yes	Yes
Sodium: Na (mg/L) - TW	2020/01/13	19.2	20**	No	Yes

MAC = Maximum Allowable Concentration as per O.Reg 169/03
MDL = Method Detection Limit

*Uranium result shown in this table was taken as part of the 5 year testing schedule. Additional uranium sampling is required by the MDWL and results are included under Additional Legislated Samples.

**There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O.Reg 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	1	2	162	167	N/A	N/A
pH	1	2	7.37	7.40	N/A	N/A
Lead (ug/l)	0	0				

Organic Parameters

These parameters are tested every 5 years as a requirement under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2020/01/06	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/06	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2020/01/06	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2020/01/06	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/06	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2020/01/06	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2020/01/06	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/06	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2020/01/06	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2020/01/06	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2020/01/06	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/06	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/01/06	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/01/06	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2020/01/06	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2020/01/06	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2020/01/06	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2020/01/06	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2020/01/06	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2020/01/06	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2020/01/06	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW	2020/01/06	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/01/06	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2020/01/06	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2020/01/06	<MDL 0.04	3.0	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Pentachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2020/01/06	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2020/01/06	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2020/01/06	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2020/01/06	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/06	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2020/01/06	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2020/01/06	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2020/01/06	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2020/01/06	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2024	6.95	100	No	No
HAA Total (ug/L) Annual Average - DW	2024	5.3	80	No	No

MAC = Maximum Allowable Concentration as per O.Reg 169/03
MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water Licence	Date Collected	Uranium (ug/L)	Number of Exceedances	
			MAC 20ug/L	1/2 MAC 10ug/L
Point of Entrance to Distribution System (Treated Water)	January	1.35	No	No
	February	1.58	No	No
	March	2.08	No	No
	April	3.17	No	No
	May	7.06	No	No
	June	0.036	No	No
	July	0.019	No	No
	August	0.016	No	No
	September	0.028	No	No
	October	0.012	No	No
	November	0.013	No	No
	December	0.012	No	No

Note: MDWL requires quarterly sampling for uranium however for operational purposes, samples are collected monthly.

Major Maintenance Summary incurred to install, repair or replace required equipment

Work Order	Description
3765179	5999, Lutterworth Pines WT, Community Complaint Royal Homes 11576 Hwy 35 Colored Water (WO 570)
3899390	5999, Lutterworth Pines WT, Well Flow Control Valves, Repair
3901422	5999, Lutterworth Pines WT, Flow Meter Pump Well 02, Replacement