Kirstenhof and Environs Residents' Association

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Westlake River, Kirstenhof Duckpond and the Keysers River

KERA Inland Water Quality Report - May 2026

Prepared by Barry Tranter
(KERA Portfolio: Westlake River Water Quality)
On behalf of the Kirstenhof and Environs Residents' Association (KERA)
6 May 2026

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Executive Summary

- The first significant rainfall of 2026 occurred on 18–19 April, with approximately 44 mm recorded.
- Water samples were taken before and after the rainfall event.
- Chemical testing showed no major concerns in the Westlake River, Keysers River, or Kirstenhof Duckpond.
- Small reductions in pH and hardness were consistent with dilution by rainwater.
- Bacterial testing showed substantially lower *Escherichia coli* levels than those recorded after the first rainfall event in 2025.
- The Keysers River showed no *E. coli* colonies during this round of testing.
- KERA continues to supplement the City's monthly testing programme by sampling during rainfall and pollution-related events.

Introduction

The first significant rainfall of 2026 occurred on the weekend of 18 and 19 April, with approximately 44 mm falling over the two days. This caused a rapid rise in the water levels of the Westlake River and the Kirstenhof Duckpond.

This rainfall event provided an opportunity to compare water quality before and after rainfall, and also to compare the results with similar testing conducted in 2025.

The quality of the Westlake River and Keysers River is regularly monitored by the City of Cape Town's Water and Sanitation Department. Results are available to the public on the City's Inland Water Quality Dashboard.

However, the City's sampling programme follows a fixed monthly schedule and therefore may not reflect short-term events such as: rainfall and flooding, sewage spills, pump station failures and stormwater contamination events

In addition, the City dashboard is often updated several weeks after samples are taken. At the time this report was written (6 May 2026), the most recent City data available on the dashboard was from 3 March 2026.

KERA's testing programme aims to supplement the City's work by collecting samples during specific environmental events that may influence water quality.

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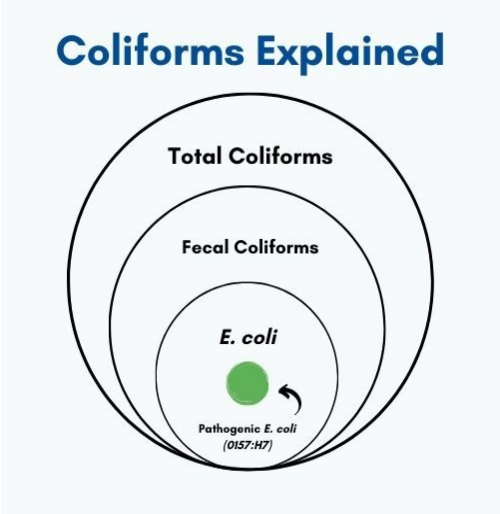
Important Notes on Testing

- The City uses accredited laboratories and trained personnel.
- KERA uses simple chemical test strips to assess the chemical content of water samples.
- KERA uses Neogen Petrifilm (6404) plates to estimate bacterial content.
- KERA results are intended as **indications only** and are not directly comparable with official City laboratory results.
- The testing programme helps identify trends and potential issues that may require further investigation.

There are many pollutants that can potentially contaminate urban waterways. Water is often referred to as the "universal solvent" because it can dissolve and transport many substances.

Testing for *Escherichia coli* (*E. coli*) is relatively simple and provides a useful indication of possible sewage contamination. Elevated *E. coli* levels may also suggest the possible presence of other harmful organisms such as parasites, bacteria, and viruses.

At present, the City does not routinely test these waterways for herbicides or pesticides.



Explanation of Indicator Bacteria

- **Coliform Bacteria**: A group of mostly harmless bacteria found in the environment. Used as a general indicator of water quality.
- **Faecal Coliforms**: Indicate faecal contamination from warm-blooded animals. Commonly used in assessing water safety.
- **Escherichia coli (E. coli)**: A species within faecal coliforms, indicating recent faecal contamination. Some strains can be harmful.

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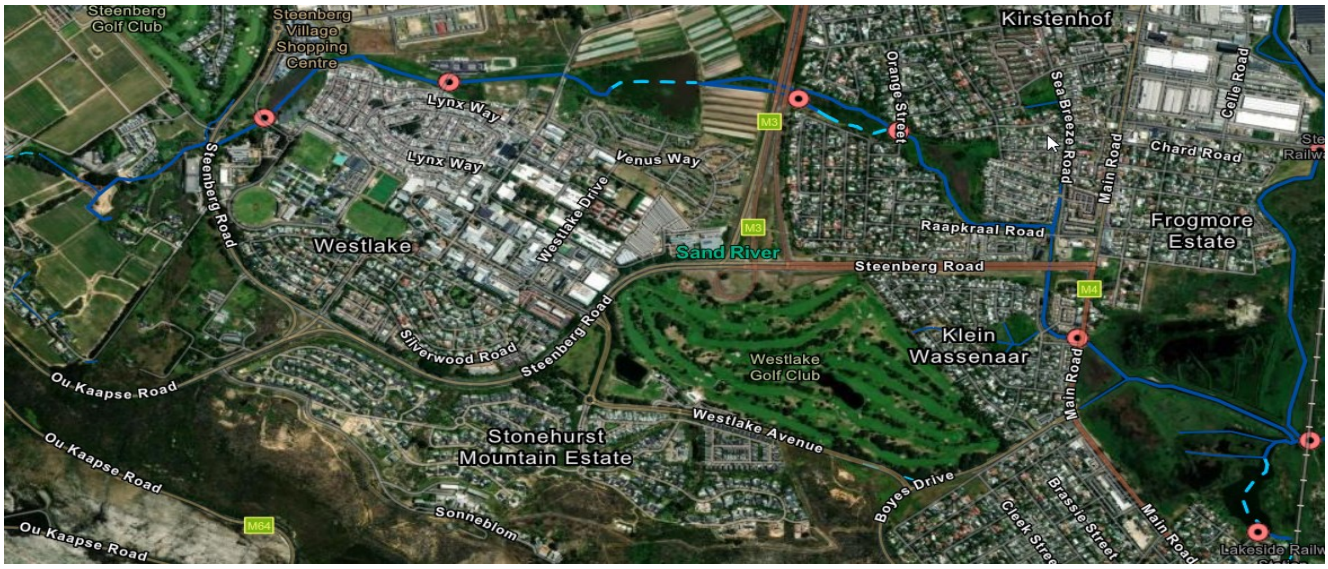

Westlake River

This river rises in the Steenberg mountains and flows next to the Steenberg Village Shopping centre, through the Westlake suburb and past the Pollsmoor Prison property with its large retaining dam. The river flows under the M3 and enters Kirstenhof suburb near the Western end of Altenburg Road. The river then flows under Oranje Road, then alongside Raapkraal Road, past the Raapkraal Sewage Pump Station and under Steenberg road. Lastly the river flows next to the Camargue residential complex in Orchard Village and under the Main Road into the Zandvlei wetland.

The river is subject to sewage polluting events originating in the Westlake area, the Pollsmoor area and failures of the Raapkraal Sewage pump station. Some of these events are visible in the City of Cape Town Inland Water quality data. This screen capture shows a very large increase of Escherichia Coli measured next to the Westlake Junior School during the winter rainfall months. This is likely to be repeated in 2026. (Arrow).

EXCO Committee members: Haylee Dugmore (Chairperson); Andres Petersen (Secretary, Social Media); Barry Tranter (Treasurer, Membership, Water Resources); Emanuela Rowe (Admin Assistance); Gary Rowe (Infrastructure); Bruce Mack (Zoning and Departures); Darryl Lawrence (Traffic); Louise Kinrade (Green Environment, Ward Forum Representative); Angelo Brown (Norfolk Park & Frogmore Estate); Vacant (Orchard Village & Klein Wassenaar)

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Chemical Analysis Westlake River

Test	Symbol	Units	Desired range	Before rain 16th April	After rain 25th April	April 2025 Result	Comment
Acid/Base	pH	Log	6.5 – 8.5	7.2	6.4	7.6	Acidic rainwater (Ph +/- 5.8) dilution of river water.
Total Alkalinity	TA	mg/L	20 - 200	120	120	180	
Carbonate	CO^{2-}_3	mg/L	50 - 200	120	80		
Hardness	$CaCO_3$	mg/L	60 - 180	100	25	120	Rainwater dilution softening the river water
Sodium Chloride	NaCl	mg/L	<100	0	0		
Iron	Fe	mg/L	<1	0	0		
Copper	Cu	mg/L	<0.4	0	0		
Lead	Pb	mg/L	0	0	0		
Manganese	Mn	mg/L	<0.05	0	0		
Chromium	Cr(VI)	mg/L	0	0	0		
Total Chlorine (TC)	Cl	mg/L	<1	0	0	1	
Free Chlorine (FC)	Cl	mg/L	0	0	0	1	
Mercury	Hg	mg/L	0	0	0		
Nitrate	NO^3	mg/L	<10	0	0	5	
Nitrite	NO^2	mg/L	<1	0	0	0.3	
Sulphate	SO^{2-}_4	mg/L	<50	0	200		Possible upstream fertiliser mobilisation.
Zinc	Zn	mg/L	0	0	0		
Fluoride	F^-	mg/L	<4	0	0		

Key Observations

- No significant chemical concerns were identified.
- A reduction in pH and hardness was observed after rainfall.
- These changes are consistent with dilution by naturally acidic rainwater.
- Elevated sulphate readings after rainfall may indicate mobilisation of fertilisers, nutrients or other pollutants from upstream areas.

NOTE The chemical testing method used by KERA provides **broad indications only**. Test strips change colour when exposed to specific chemicals and are then compared against a reference chart.

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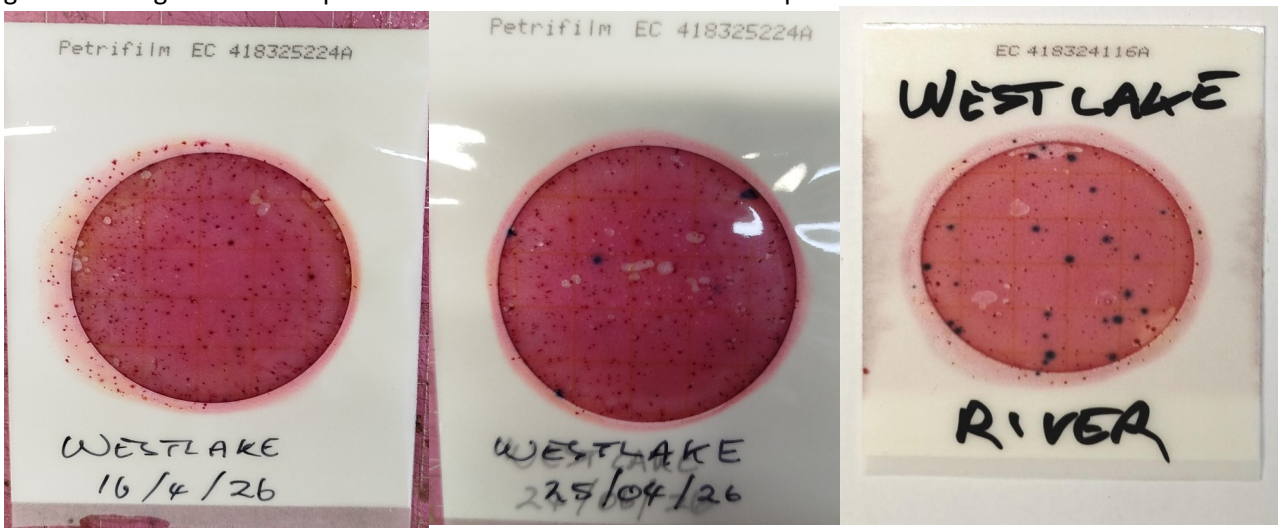
Bacterial analysis Westlake river

Water temperature 18.2°C

Red dots indicate Coliform Bacteria colonies.
Blue dots indicate Escherichia Coli colonies.

For comparison only, a sample of South African domestic tap water should show <2 Red dots and 0 Blue dots.

Rightmost image from a sample taken after the first rainfall on 8th April 2025.



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Key Observations

The Westlake River continues to show a relatively high coliform bacterial load.

Following the rainfall event, four *E. coli* colonies were observed. This is significantly lower than the levels recorded after the first rainfall event in 2025.

One possible explanation is that small rainfall events during early 2026 may already have disturbed and flushed contaminated sediment from the river system before the first major rainfall event occurred.

In contrast, the first major rainfall of 2025 followed a very dry period, which may have allowed contaminated sediment to accumulate in the riverbed.

E. coli can survive for extended periods in nutrient-rich sediment away from sunlight. Heavy rainfall can disturb this sediment and release bacteria back into the water column.

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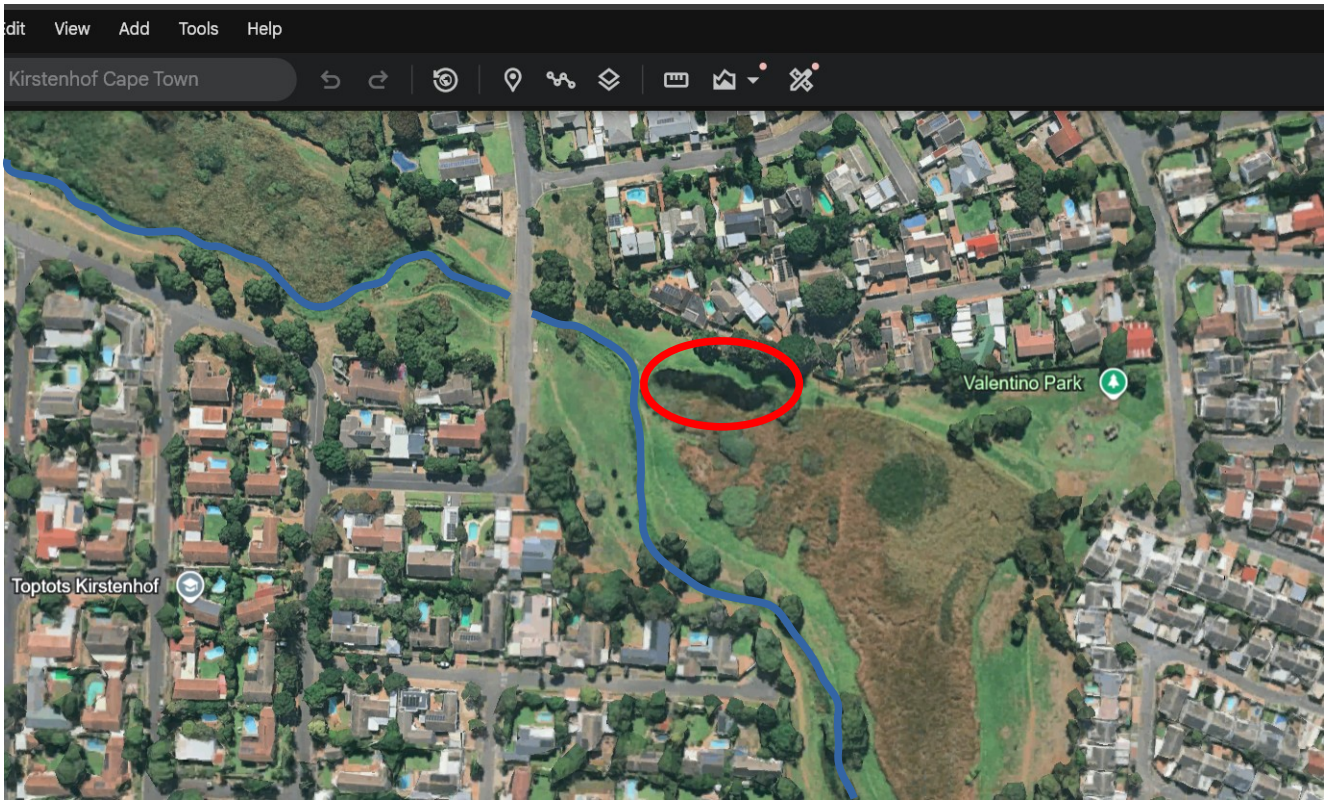
Wetland Interaction

The canalisation (channelling) of the Westlake River through Kirstenhof has caused the river to bypass all of the surrounding wetland system.

As a result, the river does not benefit at all from the natural filtration and purification processes normally provided by wetland vegetation.

KERA hopes that the City's proposed Liveable Urban Waterways Project, currently scheduled for implementation from 2033 onward, may eventually address this issue.

The Kirstenhof Duckpond



Note the path of the Westlake River channel (Blue) completely bypassing the potential useful wetland areas. Duckpond demarcated in red.

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Background

The Kirstenhof Duckpond is a small body of water approximately 60 m × 10 m in size, situated at the northern end of the Kirstenhof greenbelt east of Oranje Road.

Although the Westlake River passes within approximately 3 m of the Duckpond, there is usually very little interaction between the two water bodies.

In most conditions, the Duckpond water level remains significantly higher than the river level, suggesting that the Duckpond may have a separate water source.

During early 2026, the Duckpond water level was observed to rise at approximately twice the rate of local rainfall. The reason for this remains uncertain and requires further investigation.

Over recent years, dense alien vegetation growth covered much of the Duckpond surface. During the summer of 2026, local volunteers removed a large portion of this vegetation, reopening significant areas of open water.

The City does not currently sample the Duckpond or include it on the Inland Water Quality Dashboard.

Chemical Analysis Kirstenhof Duckpond

Test	Symbol	Units	Desired range	Before rain 16th April	After rain 25th April	April 2025 Result	Comment
Acid/Base	pH	Log	6.5 – 8.5	6.8	6.2	6.8	Acidic rainwater (Ph +/- 5.8) dilution of river water.
Total Alkalinity	TA	mg/L	20 - 200	40	40	80	
Carbonate	CO^{2-}_3	mg/L	50 - 200	40	40		
Hardness	$CaCO_3$	mg/L	60 - 180	50	25	25	Rainwater dilution softening the river water
Sodium Chloride	NaCl	mg/L	<100	0	0		
Iron	Fe	mg/L	<1	0	0		
Copper	Cu	mg/L	<0.4	0	0		
Lead	Pb	mg/L	0	0	0		
Manganese	Mn	mg/L	<0.05	0	0		
Chromium	Cr(VI)	mg/L	0	0	0		
Total Chlorine (TC)	Cl	mg/L	<1	0	0	1	
Free Chlorine (FC)	Cl	mg/L	0	0	0	1	
Mercury	Hg	mg/L	0	0	0		
Nitrate	NO^3	mg/L	<10	0	0	5	

Nitrite	NO^{2}	mg/L	<1	0	0	0.3	
Sulphate	SO^{2-}_{4}	mg/L	<50	0	200		Possible upstream fertiliser mobilisation.
Zinc	Zn	mg/L	0	0	0		
Fluoride	F^{-}	mg/L	<4	0	0		

Key Observations

- No significant chemical concerns were identified.
- Slight differences in pH, alkalinity, carbonate, and hardness compared with the Westlake River may suggest a different water source.
- Rainfall dilution effects were similar to those observed in the river samples.

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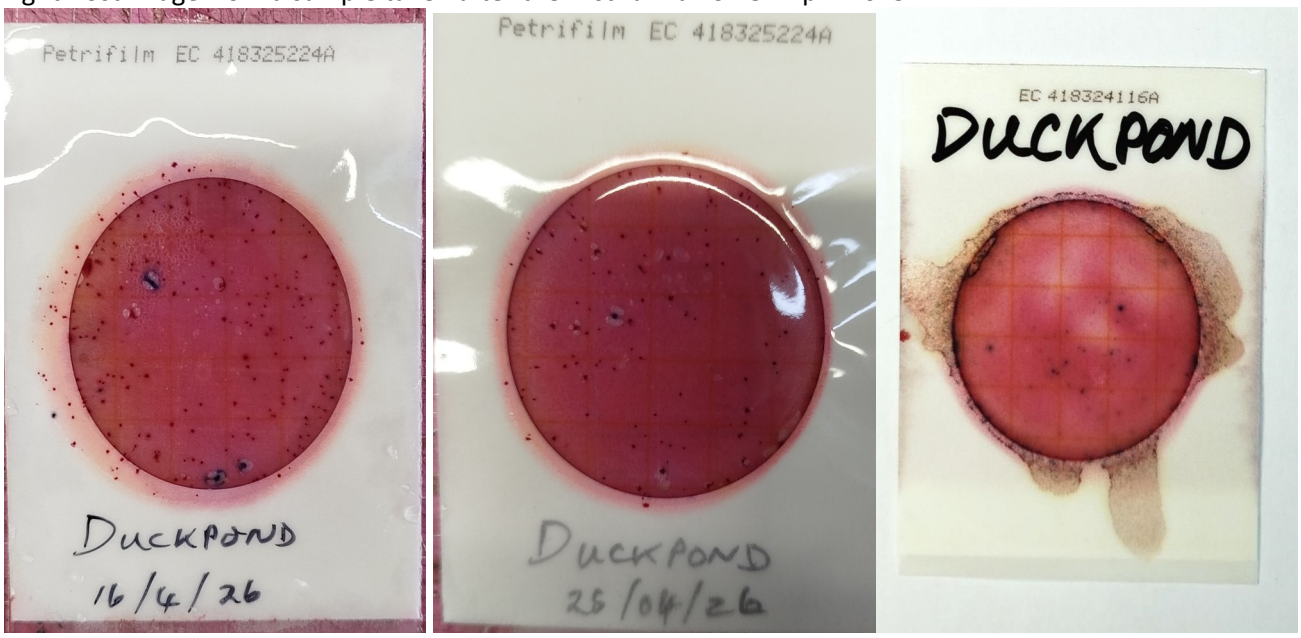
Bacterial analysis Kirstenhof Duckpond

Water temperature 18.7°C
Red dots indicate Coliform Bacteria colonies.
Blue dots indicate Escherichia Coli colonies.
For comparison only, a sample of South African domestic tap water should show <2 Red dots and 0 Blue dots.

Rightmost image from a sample taken after the first rainfall on 8th April 2025.



Key Observations

The Duckpond continues to show a relatively high coliform bacterial load.

Prior to the rainfall event, three *E. coli* colonies were observed. After rainfall, two colonies were observed, indicating no significant change.

Overall *E. coli* levels were similar to those recorded during the equivalent period in 2025.

It is possible that sediment disturbance during the recent alien vegetation clearing operation contributed to some bacterial mobilisation.

The dense vegetation covering the pond surface may also previously have reduced the sterilising effect of sunlight (UV radiation) on the water.

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Keysers River

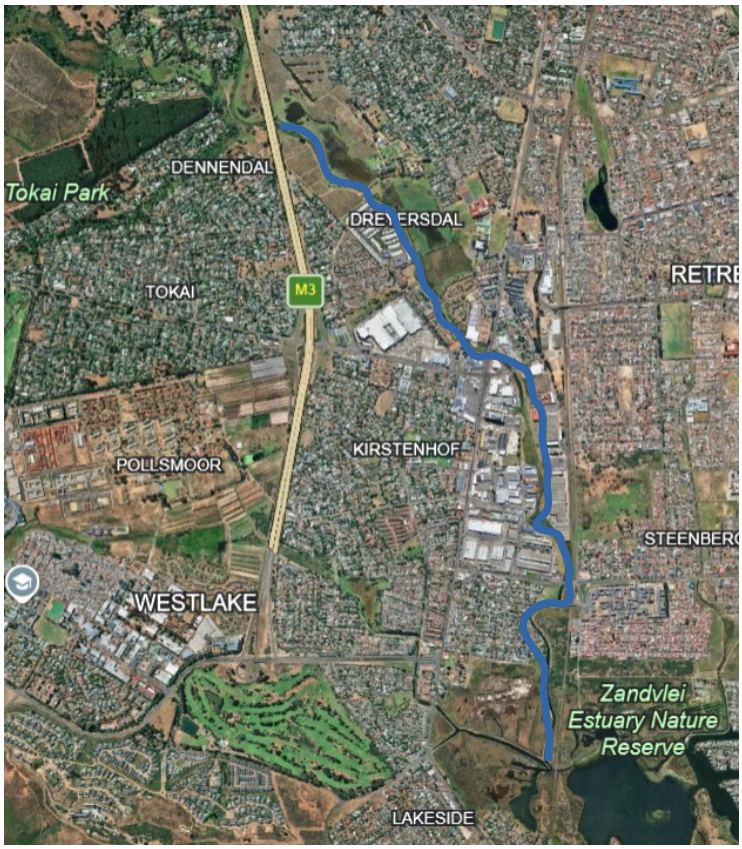
The Keysers River begins at the M3 near Dreyersdal Farm. It is formed by the joining of the Prinskasteel River, the Prinskasteel Stream and the Spanschemat River.

It flows past the farm where a small number of cattle are present.

The river then passes to the NorthEast of the Blue Route shopping Centre, crosses the Main Road then passes to the East of a light industrial area before joining the Westlake River at Zandvlei.

The City Water Quality Dashboard shows that the Spanschemat River has extremely high levels of Escherichia Coli pollution at the time of writing this report. This must flow into the Keysers River and Zandvlei during rainfall.

As with the Westlake River, the Keysers River may be affected by urban stormwater runoff and pollution entering the river system during rainfall events.



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Chemical Analysis Keysers River

Test	Symbol	Units	Desired range	Before rain 16th April	After rain 25th April	April 2025 Result	Comment
Acid/Base	pH	Log	6.5 – 8.5	7.2	6.8	7.2	Acidic rainwater (Ph +/- 5.8) dilution of river water.
Total Alkalinity	TA	mg/L	20 - 200	120	40	80	
Carbonate	CO^{2-}_3	mg/L	50 - 200	120	80		
Hardness	$CaCO_3$	mg/L	60 - 180	100	50	50	Rainwater dilution softening the river water
Sodium Chloride	NaCl	mg/L	<100	100	0		
Iron	Fe	mg/L	<1	1	1		
Copper	Cu	mg/L	<0.4	0	0		
Lead	Pb	mg/L	0	0	0		
Manganese	Mn	mg/L	<0.05	0	0		
Chromium	Cr(VI)	mg/L	0	0	0		
Total Chlorine (TC)	Cl	mg/L	<1	0	0	1	
Free Chlorine (FC)	Cl	mg/L	0	0	0	1	
Mercury	Hg	mg/L	0	0	0		
Nitrate	NO^3	mg/L	<10	0	10	5	
Nitrite	NO^2	mg/L	<1	0	0	1	
Sulphate	SO^{2-}_4	mg/L	<50	0	200		Possible upstream fertiliser mobilisation.
Zinc	Zn	mg/L	0	0	0		
Fluoride	F^-	mg/L	<4	0	0		

Key Observations

- No significant chemical concerns were identified.
- Rainfall dilution caused small reductions in pH and hardness.
- Elevated sulphate readings after rainfall may indicate mobilisation of upstream pollutants or fertilisers.

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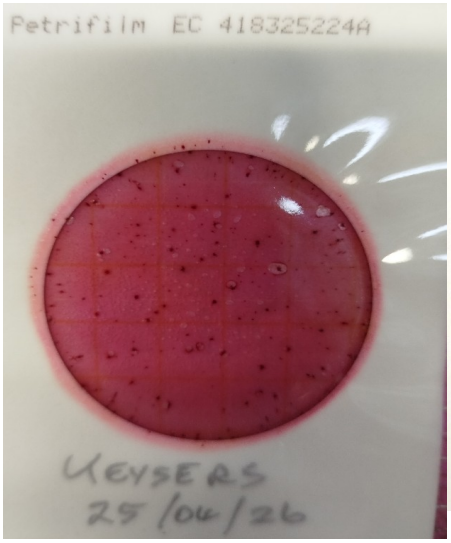
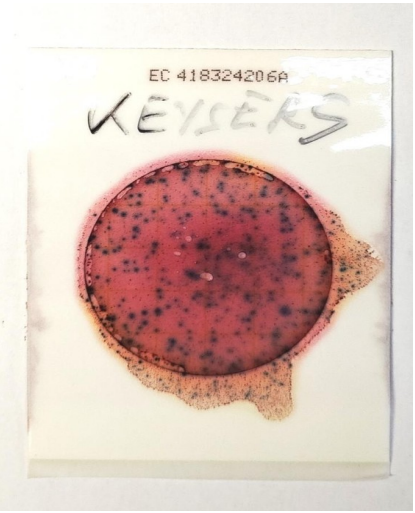
Bacterial analysis Keysers river

Water temperature 18.0°C
Red dots indicate Coliform Bacteria colonies.
Blue dots indicate Escherichia Coli colonies.
For comparison only, a sample of South African domestic tap water should show <2 Red dots and 0 Blue dots.

Rightmost image from a sample taken after the first rainfall on 8th April 2025.





Key Observations

The Keysers River showed no detectable *E. coli* colonies during this testing cycle. This represents a substantial improvement compared with samples collected during the equivalent period in 2025.

In 2025 extremely high levels of Escherichia Coli were observed. It is difficult to explain this because four days after the KERA Sample, the City sample in the same area showed very low levels. It is possible that the sample was taken from an area with very localised pollution or it was a very transient pollution event.

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Findings and Observations

Chemical Testing

- Chemical analysis across all three water bodies showed no significant concerns.
- Small reductions in pH and water hardness after rainfall were expected and are consistent with dilution by naturally acidic rainwater.

Bacterial Testing

- The Westlake River and Kirstenhof Duckpond continue to show elevated coliform bacterial levels.
- Only low levels of *E. coli* were detected after the rainfall event.
- The Keysers River showed no detectable *E. coli* colonies.
- Overall bacterial levels were substantially lower than those recorded during the equivalent period in 2025.

Rainfall Influence

2026 Rainfall		
Month	**Day**	**Rainfall (mm)**
Jan	15	3
Feb	10	11
Feb	14	2
Mar	1	1
Mar	2	2
Mar	7	7
Mar	12	3
Mar	28	1
Apr	3	9
Apr	5	2
Apr	11	1
Apr	15	3

One possible explanation for the lower bacterial levels recorded in 2026 is the occurrence of multiple small rainfall events prior to the first major rainfall event.

During early 2026, approximately 45 mm of rainfall had already occurred before the 18–19 April rainfall event.

In contrast, the first significant rainfall of 2025 followed a prolonged dry period.

The earlier rainfall in 2026 may therefore have gradually flushed contaminated sediment from the waterways, reducing the impact of the first major rainfall event.

NOTE the City Inland Water Quality test data, as published on the City Inland Water Quality Dashboard, is the **only** information that is official and valid. Over time, KERA expects to find a correlation between the City results and the KERA results, however the above statement will always remain true.

Conclusion

The May 2026 testing programme indicates that water quality in the Westlake River, Kirstenhof Duckpond, and Keysers River remains generally stable from a chemical perspective.

Bacterial testing continues to demonstrate the vulnerability of urban waterways to contamination events and sediment disturbance.

However, bacterial levels recorded during this rainfall event were substantially lower than those observed during the equivalent period in 2025.

KERA will continue to monitor local waterways during rainfall events, sewage spills, flooding events, and periods of low flow in order to supplement the City's regular monitoring programme and contribute to a better understanding of the behaviour of these urban water systems.

References and further information

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