River Water Quality in Hong Kong in 2014

Environmental Protection Department
The Government of the Hong Kong Special Administrative Region

Mission

To conduct an effective and scientifically sound water monitoring programme that helps protect the health of Hong Kong's rivers and streams and ensure the water quality objectives can be achieved and maintained.

Acknowledgement

We acknowledge the Government Laboratory for undertaking chemical analyses of the water samples.

Content

Appendices

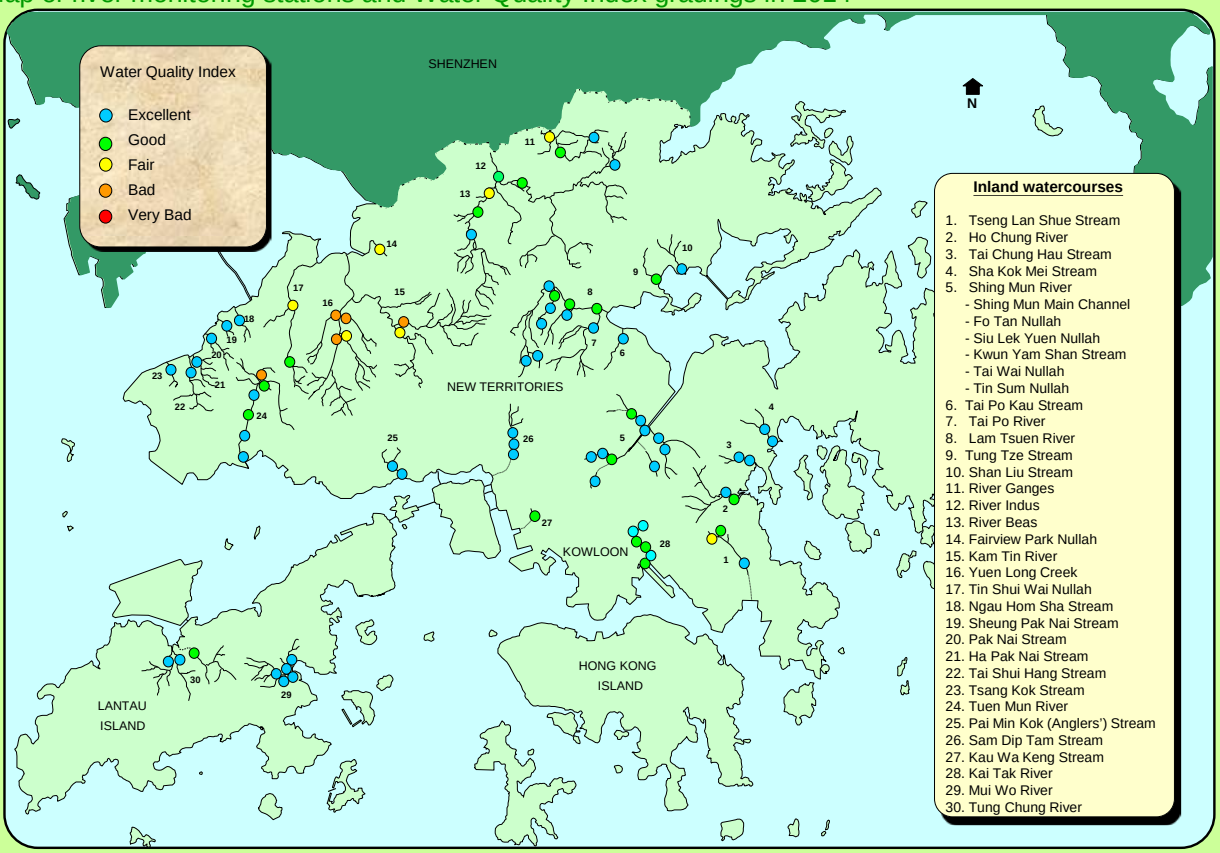
1. An overview of Hong Kong's rivers in 2014

A bird resting on oyster shells near Lau Fau Shan's streams.

This report summarizes the water quality of major rivers covered by the Environmental Protection Department (EPD)'s river monitoring programme in 2014. The background of the programme, the scientific basis on which it is based, the detailed procedures of sampling, testing, analyses and publication of results can be found in the anniversary edition of "20 Years of River Water Quality Monitoring in Hong Kong 1986-2005". This report and other annual reports from 1998 and onwards can be downloaded from the EPD's web-site: http://wqrc.epd.gov.hk/en/water-quality/river-2.aspx.

EPD river monitoring staff conducting sampling at Tai Po River

Map of river monitoring stations and Water Quality Index gradings in 2014

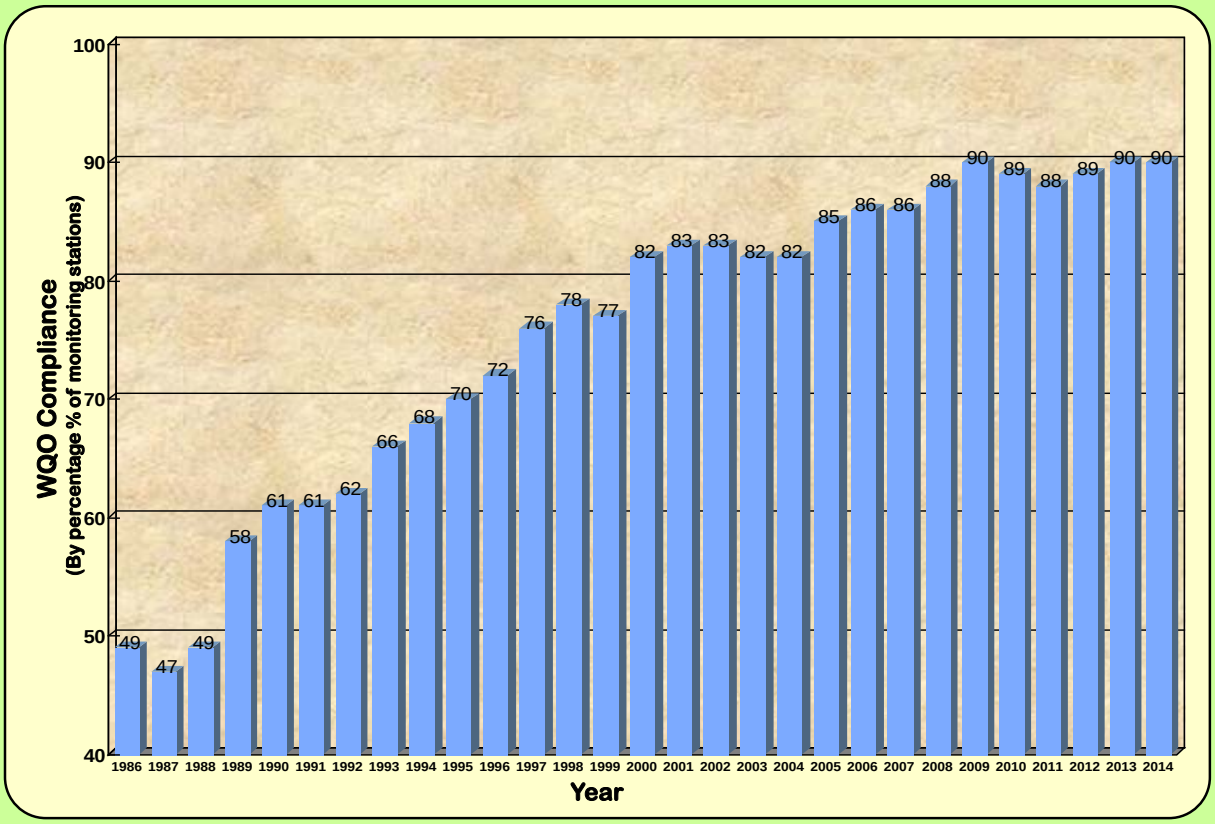


The EPD has a comprehensive river water quality monitoring programme in Hong Kong since 1986. In 2014, monitoring took place at 82 stations, covering 30 rivers and streams. The monitoring involved conducting field measurements and collecting water samples for laboratory analyses of over 40 physico-chemical and biological parameters, including organics, nutrients, metals and *E. coli* bacteria.

To compare the year-to-year performance of compliance with the statutory Water Quality Objectives (WQOs), five representative parameters were used: pH, suspended solids, dissolved oxygen, 5-day biochemical oxygen demand, and chemical oxygen demand. The overall compliance rate in 2014 for all the stations was 90%, same as 2013. In spite of the record high annual temperature and a high rainfall, the overall compliance rate indicated that the overall water quality of Hong Kong rivers in 2014 continued to perform well. The good compliance rates in recent years were the result of implementation of pollution control legislation, including the Water Pollution Control Ordinance and the Livestock Waste Control Scheme introduced under the Waste Disposal Ordinance, and the extension of the sewerage network to local villages under the Sewerage Master Plans and the gradual

connection of the village houses to new sewers.

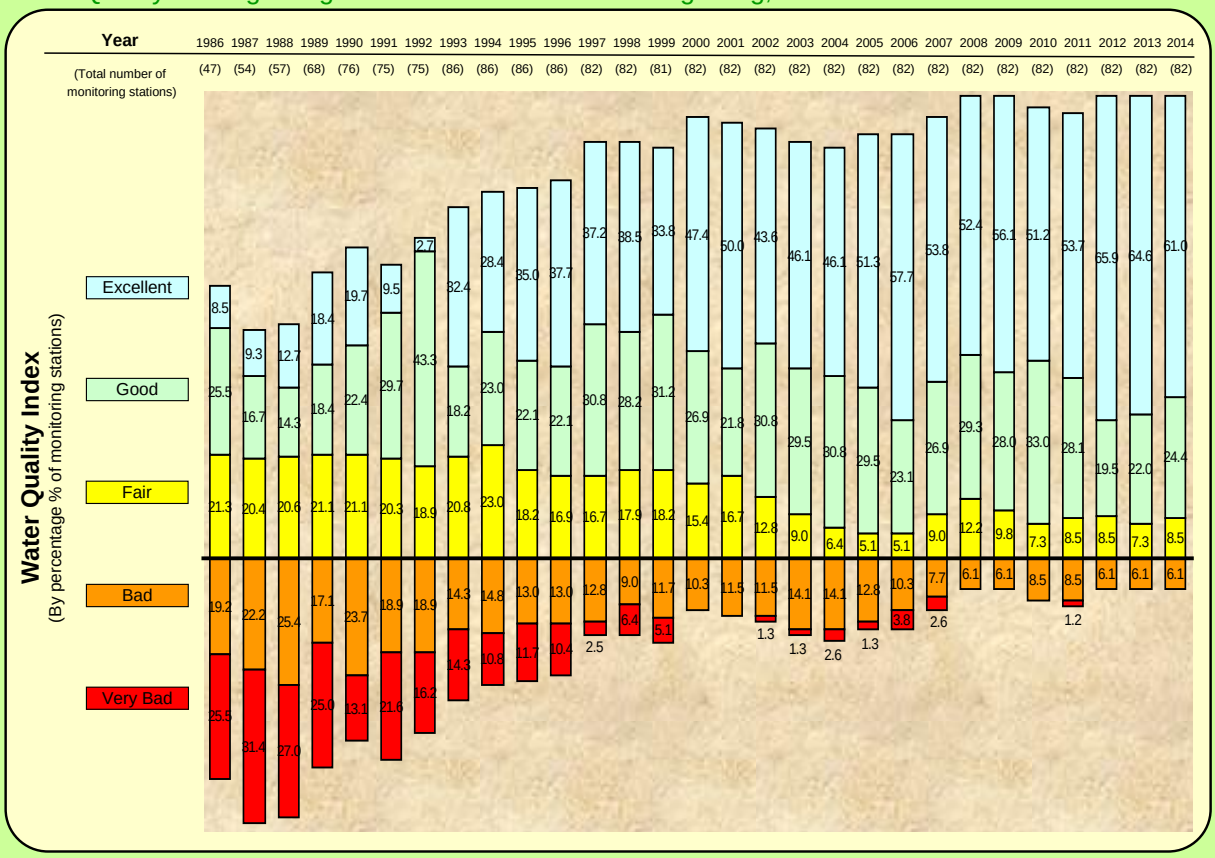
WQO compliance in the inland waters of Hong Kong, 1986 – 2014



Similarly, the Water Quality Index (WQI), which grades the general health of inland water courses by assessing the three parameters that reflect a river's level of organic pollution: dissolved oxygen, 5-day biochemical oxygen demand and ammonia-nitrogen content, continued to perform well in recent years. In 2014, 61% of the river monitoring stations were graded "Excellent" and 24% "Good". The majority of the monitoring stations in Lantau Island, the Eastern New Territories, Southwestern New Territories and Kowloon were in these categories, indicating that the organic pollution loading from their catchments was steadily decreasing.

Similar to 2013, 6% of the monitoring stations were graded 'Bad' in 2014 and no station was graded 'Very Bad'. Most of the 'Bad' stations are located along watercourses in the Northwestern New Territories.

Water Quality Index gradings for the inland waters of Hong Kong, 1986 – 2014



Compared with 2013, 7 stations moved down a grade and 3 stations moved up a grade in WQI grading in 2014. These minor changes are considered to be within the normal range of natural fluctuations over the past 10 years.

River or Stream	2013 WQI grading	2014 WQI grading
Kai Tak River (KN3, KN4)	Excellent	Good
River Beas (RB3)	Good	Fair
Tung Chung River (TC3)	Excellent	Good
Fo Tan Nullah (TR17)	Excellent	Good
Tin Shui Wai Nullah (TSR2)	Excellent	Good
Yuen Long Creek (YL1)	Fair	Bad
Tuen Mun River (TN4, TN6)	Good	Excellent
Yuen Long Creek (YL2)	Bad	Fair

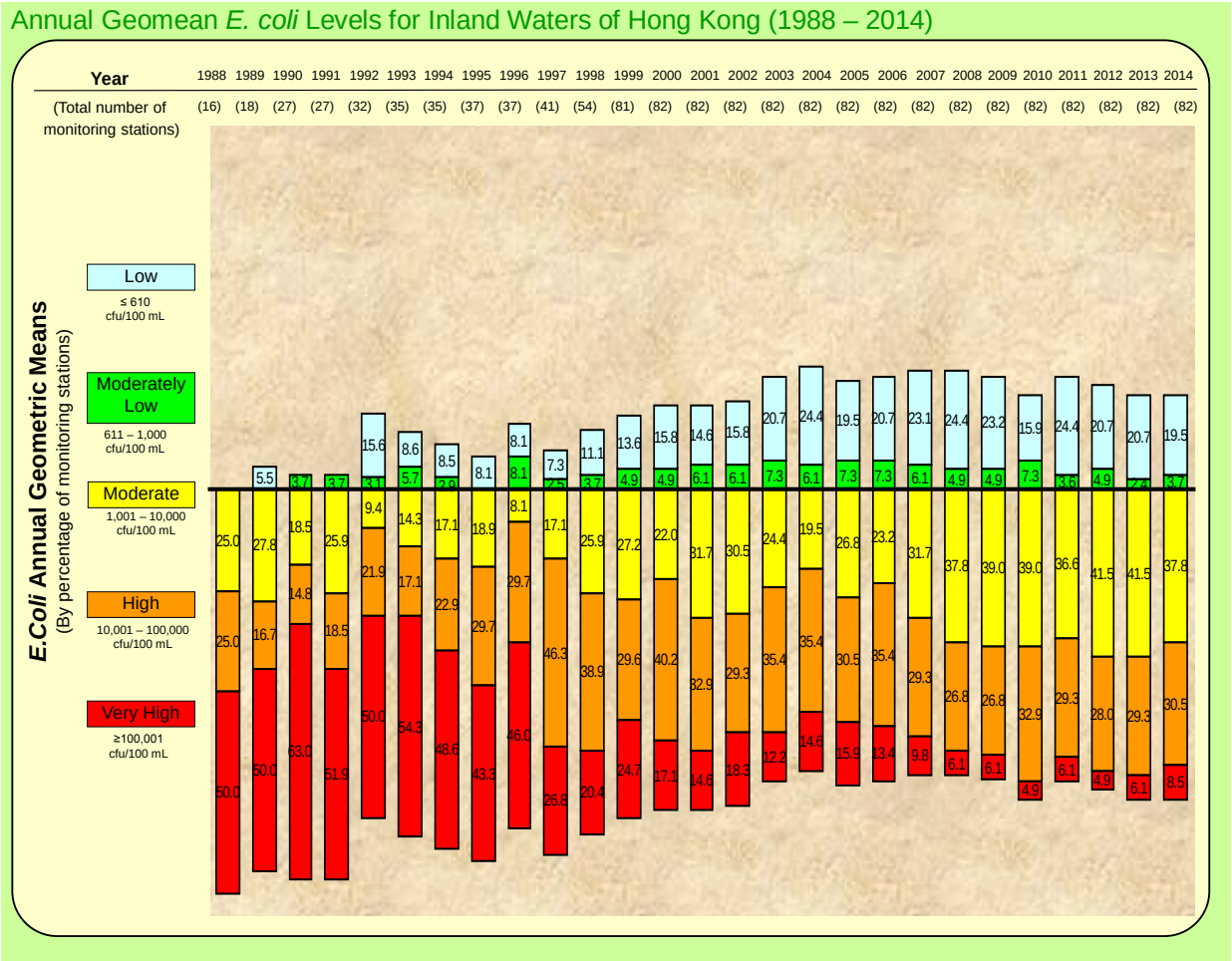
The downstream portion of Lam Tsuen River showed 'Good' river water quality in 2014.

In terms of *E. coli*, the situation was comparable to 2013 with 23% of the stations having 'Low' or 'Moderately Low' levels of *E. coli* (i.e. less than or equal to 1,000 cfu/100 mL) in 2014 while 39% of the stations recorded 'High' or 'Very High' (i.e. over 10,000 cfu/100mL) levels.[1]

Most of the stations with 'High' and 'Very High' levels of *E. coli* are located in the northwestern part of the New Territories (e.g. Yuen Long Creek, Kam Tin River, Fairview Park Nullah and Tuen Mun River); Northern District (e.g. downstream station of River Indus and mid River Ganges), the eastern New Territories (e.g. Fo Tan Nullah, Tai Po River, She Shan Tsuen tributary of Lam Tsuen River and Tseng Lan Shue Stream); western Kowloon (e.g. Pai Min Kok Stream, Sam Dip Tam Stream, Kau Wa Keng Stream), and central and eastern Kowloon (e.g. Kai Tak River).

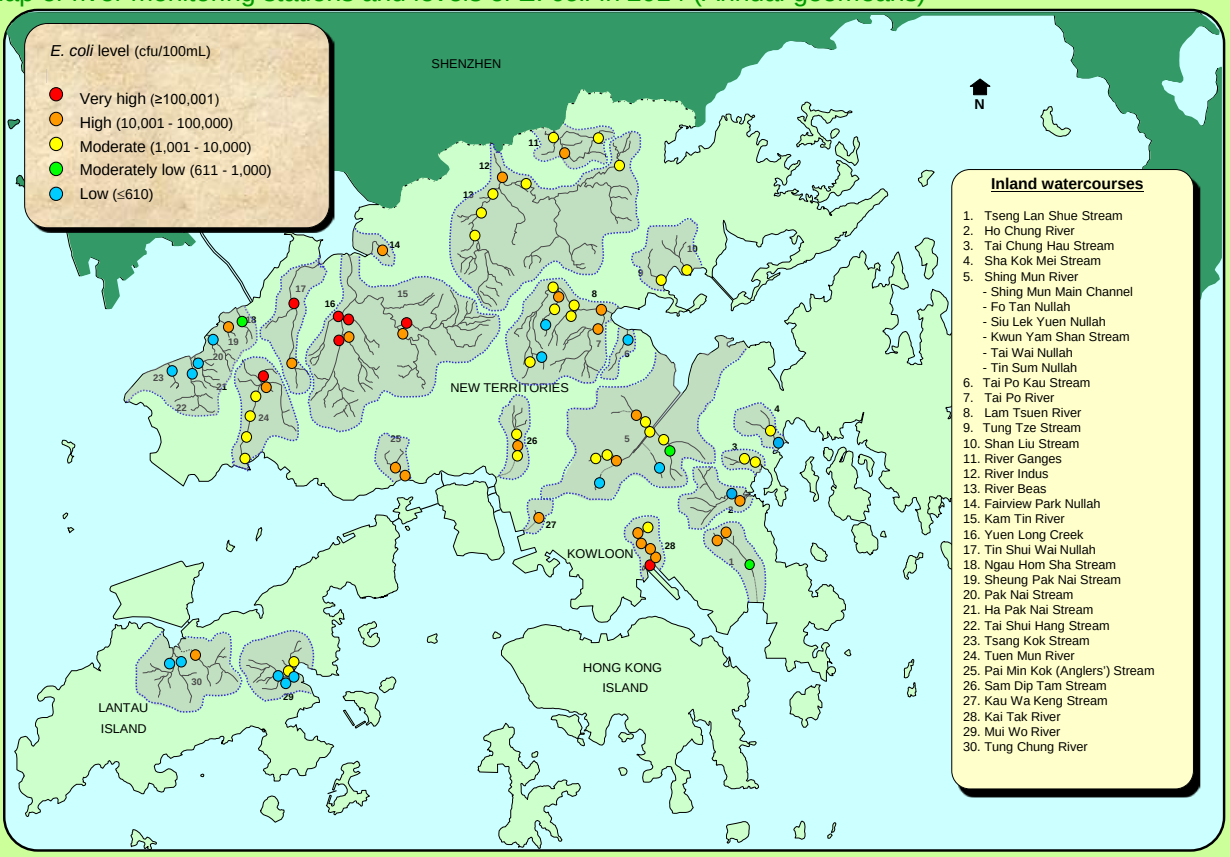
In summary, the 2014 WQO compliance rate and WQI gradings of Hong Kong's inland water courses were largely similar to 2013's monitoring results and showed long term improvement as a result of the gradual reduction of pollution loading in our rivers.

[1] All levels of *E. coli* in this report are reported as annual geometric means (cfu/100mL).



It should be noted that many of the above sites with high *E. coli* levels in the New Territories are subject to discharges from unsewered village houses, illegal discharges from livestock farms as well as expedient connections in the sewered areas. The Government's continued efforts in enforcement and extension of the public sewer network to more remote villages should be able to reduce the *E. coli* levels at these locations in the future.

Map of river monitoring stations and levels of *E. coli* in 2014 (Annual geomeans)



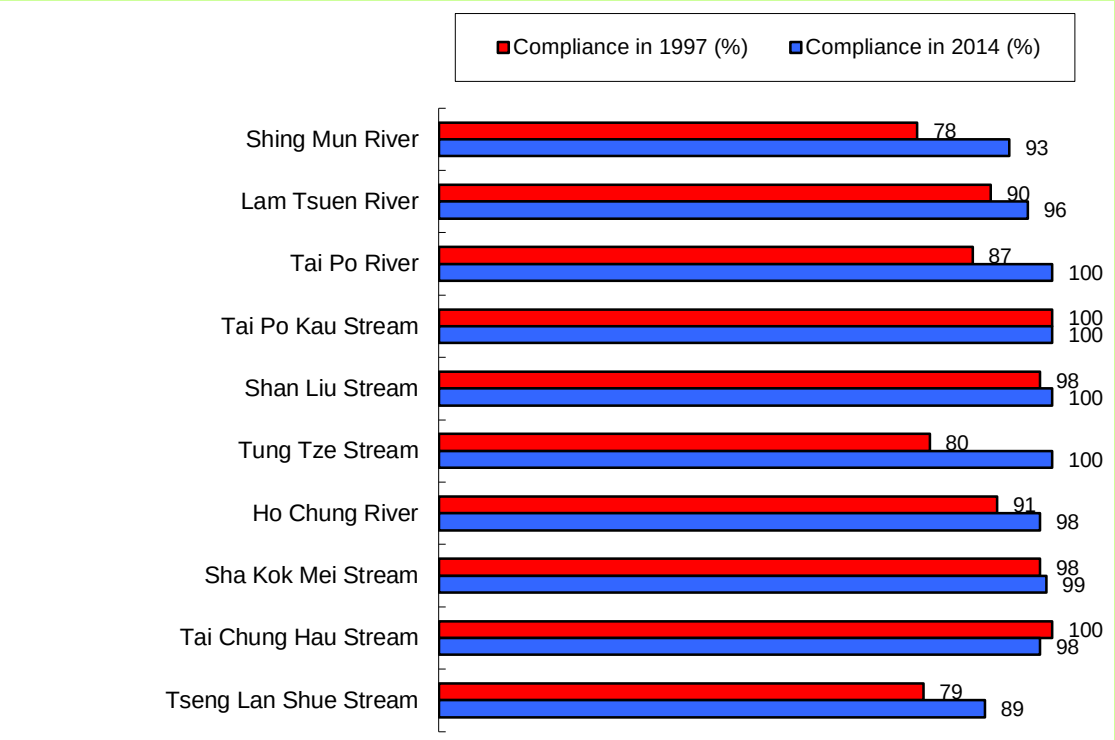
2. Eastern New Territories rivers

The EPD monitored ten rivers and streams in the Eastern New Territories in 2014. Six are located in the Tolo Harbour and Channel Water Control Zone (WCZ): Shing Mun River, Lam Tsuen River, Tai Po River, Tai Po Kau Stream, Shan Liu Stream and Tung Tze Stream. Within the Port Shelter WCZ, there are Ho Chung River, Sha Kok Mei Stream and Tai Chung Hau Stream. Tseng Lan Shue Stream is located within the Junk Bay WCZ.

The Eastern New Territories had the best river and stream water quality in the territory. In 2014, the overall WQO compliance rate was 97%, compared to 96% of 2013[2]. Within the region, four rivers achieved full compliance (100%) with the WQOs in 2014. These are Tai Po River, Tai Po Kau River, Shan Liu Stream, Tung Tze Stream in the Tolo Harbour and Channel Water Control Zone.

[2] In this report, the data from 2013 is chosen for short term comparison to illustrate year-to-year fluctuation and data from 1997 is chosen as the baseline for medium term comparison.

Compliance with the Water Quality Objectives in the rivers of the Eastern New Territories in 1997 and in 2014



Although Shing Mun River in the Tolo Harbour and Channel WCZ has not yet reached 100% WQO compliance in 2014, it showed marked improvement during the last two decades. The WQO compliance rate of Shing Mun River rose from 78% in 1997 to 93% in 2014. Lam Tsuen River's WQO compliance rate was 96% in 2014 while Tai Po River recorded 100% in the same year.

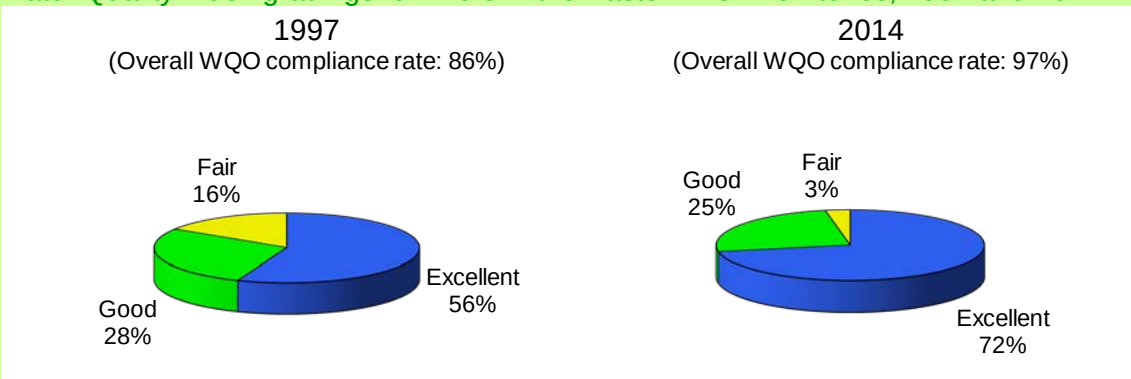
All three rivers in the Port Shelter WCZ achieved a WQO compliance rate of 98% or above in 2014. Ho Chung River showed improvement from a 91% compliance rate in 1997 to 98% in 2014. The relatively unpolluted Tai Chung Hau Stream and Sha Kok Mei Stream have maintained their high compliance rates of 98% or above since 1997.

The compliance rate for Tseng Lan Shue Stream, which flows into Junk Bay, improved from 79% in 1997 to 89% in 2014.

Shing Mun River has evolved from a water channel for anti-flooding purposes to a popular scenic river for local residents.

As for the WQI grading, 31 out of 32 (97%) of the river monitoring stations in the Eastern New Territories were graded 'Good' or 'Excellent' in 2014; same as in 2013. The remaining station of Tseng Lan Shue Stream at Tseng Lan Shue Tsuen (JR3) was in the 'Fair' category. The overall improvement was due to the continued enforcement of the pollution control legislation, the implementation of Sewerage Master Plans and extended village sewerage in the catchments.

Water Quality Index gradings for rivers in the Eastern New Territories, 1997 and 2014



In terms of *E. coli*, 9 out of the 32 stations in 2014 had *E. coli* levels of less than 1,000 cfu/100mL. There were, however, 8 stations still having fairly high levels of *E. coli* of 10,001 – 100,000 cfu/100mL, namely the upstream stations of Tseng Lan Shue Stream (JR3, JR6), one station at Ho Chung River (PR1), one station at Tai Wai Nullah (TR19), the

upstream station of Fo Tan Nullah (TR17), the station of Tai Po River (TR13), and two of Lam Tsuen River's stations (TR12I, TR12C). Most of these stations were still receiving discharges from unsewered villages. When the public sewer network is extended to unsewered areas in this part of the New Territories, the water quality of the rivers and streams is expected to improve further.

The *E. coli* level at Shing Mun River Main Channel (TR19I) was 1,300 cfu/100mL in 2014, compared with 4,000 cfu/100mL in 2013, and the higher bacterial level was due to discharges through overflow pipes and defective foul sewer system. The Drainage Services Department had since traced the faulty pipelines and rectified the defective sewers, and gradual improvement of water quality was observed in 2014.

3. Northwestern New Territories rivers

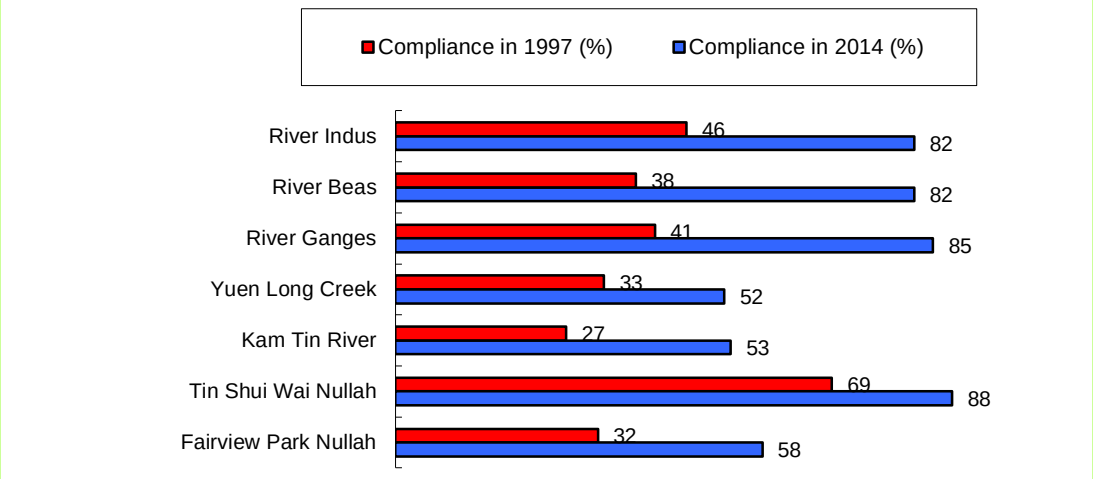
In the Northwestern New Territories, the EPD monitors a total of 13 rivers and streams which flow into Shenzhen River or directly into Deep Bay (Shenzhen Bay). Three of these — Rivers Indus, Beas and Ganges — are major water courses situated in North District. Yuen Long Creek, Kam Tin River, Tin Shui Wai Nullah and Fairview Park Nullah are situated in Yuen Long District, while the six smaller streams are located around the Lau Fau Shan area.

All the monitored rivers in the Northwestern New Territories showed improvement in the WQO compliance rates in the last decade, particularly the Rivers Beas, Indus and Ganges in North District.

In terms of WQO compliance, the upstream station of River Beas (RB1) was 93% in 2014, same as in 2013. The compliance rates of the midstream station (RB2) and downstream station (RB3) were 82% and 70% in 2014 as compared with 83% and 73% in 2013 respectively. For River Ganges, the WQO compliance rate of the 3 stations were 95%, 85%, 75% from upstream to downstream (GR3, GR2, GR1) compared with 98%, 98% and 77% in 2013. These changes are considered to be within the normal year to year fluctuations over the past 10 years. Both rivers are still affected by pollution from livestock farms, unsewered villages and small industrial establishments in the catchment. The upstream station (IN3) and midstream station (IN2) of River Indus recorded 97% and 95% compliance in WQO

respectively, as compared with 2013's 100% and 92%. The downstream station (IN1) which is subject to backflow from Shenzhen River recorded 55% compliance with the WQO, as compared with 60% in 2013.

Compliance with the Water Quality Objectives in the major rivers of North District and Yuen Long in 1997 and 2014



The compliance rates of stations KT1 and KT2 in Kam Tin River were 72% and 35% in 2014, as compared with 70% and 37% respectively in 2013. Overall, Kam Tin River was still impacted by discharges from livestock farms, unsewered premises and small industrial establishments.

Yuen Long Creek's overall compliance rate in 2014 was 52%, compared with 51% in 2013. The compliance rates for the two upstream stations (YL1 and YL2) were 58% and 60% respectively in 2014 as compared with 72% and 60% in 2013. The compliance rates for the stations in the middle of Yuen Long township (YL3 and YL4) were 57% and 33% in 2014 as compared with 42% and 30% in 2013 respectively. This river was still subject to discharges from livestock farms, unsewered village houses and industrial establishments.

The upstream station of Tin Shui Wai Nullah (TSR2) located near Wo Ping San Tsuen and Tan Kwai Tsuen reached a 95% WQO compliance rate in 2014, as compared with 98% in 2013. The downstream station (TSR1) was 82% in compliance in 2014 as compared with 2013's 83%. The Fairview Park Nullah station (FVR1) achieved 58% WQO compliance in 2014 as compared with 77% in 2013.

Site measurement conducted mid-stream of River Beas.

In 2014, water quality improved upstream along River Ganges: 'Fair' for GR1, 'Good' for GR2 and 'Excellent' for GR3, similar to 2013. The downstream station of River Indus (IN1) which is affected by backflow from Shenzhen River reached a 'Good' grading in 2014, similar to 2013. The midstream (IN2) and upstream (IN3) stations were 'Good' and 'Excellent' respectively, similar to 2013. Going downstream along River Beas, the three stations (RB1, RB2, RB3) received 'Excellent', 'Good' and 'Fair' grading respectively in 2014, compared to 'Excellent', 'Good' and 'Good' in 2013.

In 2014, station KT1 in Kam Tin River attained WQI grading of 'Fair', similar to 2013. Station KT2 recorded a 'Bad' grading in 2014, similar to 2013. Yuen Long Creek on the other hand recorded 'Bad' and 'Fair' gradings for the upstream stations YL1 and YL2 in 2014 compared with 2013's 'Fair' and 'Bad' respectively. Both downstream YL3 and YL4 stations were graded 'Bad' in 2014, similar to 2013. The two stations at Tin Shui Wai Nullah (TSR1 and TSR2) received 'Fair' and 'Good' grading respectively, compared with 'Fair' and 'Excellent' in 2013. Fairview Park Nullah (FVR1) was graded as 'Fair' in 2014, similar to 2013.

The water quality of the smaller streams around the Lau Fau Shan area remained good in

2014. All six streams achieved WQO compliance of 98% or above, with Ha Pak Nai Stream achieving 100%. Similarly, all six streams achieved 'Excellent' WQI grading, same as 2013. In comparison, the overall WQO compliance rates of the other larger water courses in the Northwestern New Territories in 2014 ranged from 52% to 88%, as compared with 51% to 91% in 2013.

The water quality of upstream and midstream stations of the rivers in Northwestern New Territories were mostly better as compared with the downstream stations, probably because pollutants discharged into the water courses tended to accumulate downstream.

Taking samples at Kam Tin River station KT2 during the dry season.

The annual geometric mean levels of *E. coli* in 2014 showed that most of the stations in Northwestern New Territories still contained moderate to high levels of *E. coli*. However, most of the Lau Fau Shan streams had levels of *E. coli* below 800 cfu/100mL except Sheung Pak Nai Stream (DB5: 16,000 cfu/100mL).

In 2014, the upstream and downstream stations at River Beas (RB1) and (RB3) had higher levels of *E. coli* (8,400 and 9,100 cfu/100mL) compared with the midstream (RB2) (3,000 cfu/100mL), while the upstream station at River Ganges (GR3) had a lower level of *E. coli* (1,700 cfu/100mL) compared with the midstream and downstream stations (GR2 and GR1) (10,000 cfu/100mL and 9,800 cfu/100mL respectively) in 2014. This suggests that the

water quality of these rivers were affected by local pollution sources, including discharge from unsewered villages, livestock farms and expedient connections and the pollutants discharged into the water courses tended to accumulate downstream. On the other hand, the elevated *E. coli* level of the downstream River Indus station (IN1) (21,000 cfu/100mL), compared with the upstream (IN3) (1,500 cfu/100mL) and midstream (IN2) (2,600 cfu/100mL) stations, was probably due to the back flushing effect of the more polluted Shenzhen River.

All of Lau Fau Shan's minor streams achieved 98% or higher Water Quality Objective compliance in 2014.

The *E. coli* levels at Kam Tin River and Fairview Park Nullah remained high in 2014 with the Fairview Park Nullah station recording an *E. coli* level of 28,000 cfu/100mL and Kam Tin River's two stations, KT1 and KT2, recording 46,000 and 200,000 cfu/100mL respectively. The upstream stations of Yuen Long Creek, YL1 and YL2, had *E. coli* levels of 160,000 and 78,000 cfu/100mL and the two mid-streams stations, YL3 and YL4, had *E. coli* levels of 490,000 and 1,200,000 cfu/100mL respectively. Tin Shui Wai Nullah's mid-stream and upstream stations, TSR1 and TSR2, registered 210,000 and 20,000 cfu/100mL *E. coli* levels.

In summary, the *E. coli* levels in the major rivers in the Northwestern New Territories were still high largely because of discharge from livestock farms, expedient connections and unsewered villages in the area. The implementation of the Schemes for the Voluntary Surrender of Poultry and Pig Farm Licence has already brought about a reduction of livestock

waste loading. The North District Sewerage Master Plan and Yuen Long and Kam Tin Sewerage Master Plan have included plans to provide public sewers to most of the unsewered villages, and the river water quality in the Northwestern New Territories is expected to gradually improve when these schemes are implemented.

4. Lantau Island rivers

Lantau Island is large and less populated. Two major rivers with a total of eight monitoring stations are monitored by the EPD: five along Mui Wo River on the south-eastern side and three at Tung Chung River on the north-western side of the island.

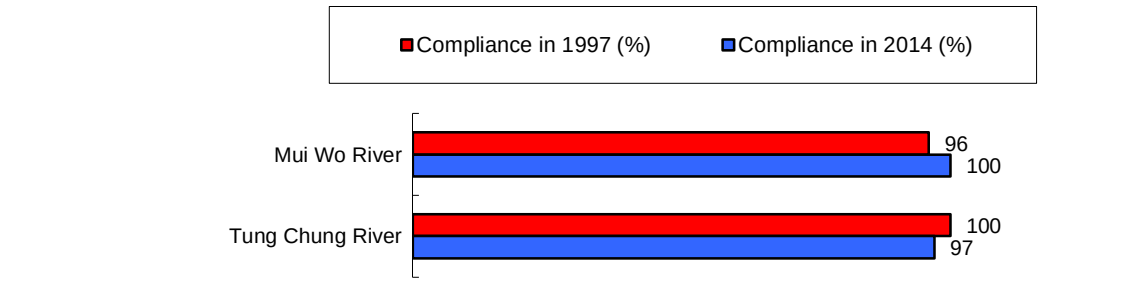
Overall, Mui Wo River and Tung Chung River generally displayed satisfactory water quality. The WQO compliance rates of Mui Wo River and Tung Chung River in 2014 were 100% and 97% respectively, compared to 2013's 99% for both rivers.

Mui Wo River achieved 100% WQO compliance rate in 2014.

As for the WQI gradings, all eight monitoring stations maintained an 'Excellent' grading in 2014 except for TC3 of Tung Chung River which was graded 'Good', similar to 2013. The *E. coli* levels of the five monitoring stations at Mui Wo River in 2014 were: 600 cfu/100mL at MW1; 2,500 cfu/100mL at MW2; 210 cfu/100mL at MW3; 560 cfu/100mL at MW4 and 1,700 cfu/100mL at MW5. For Tung Chung River, the *E. coli* level at TC1 was 48 cfu/100mL; 79 cfu/100mL at TC2 and 15,000 cfu/100mL at TC3, suggesting that this station

might be affected by discharges or seepage from septic tanks and soakaway systems in the nearby unsewered village houses.

Compliance with the Water Quality Objectives in the rivers of Lantau Island in 1997 and 2014

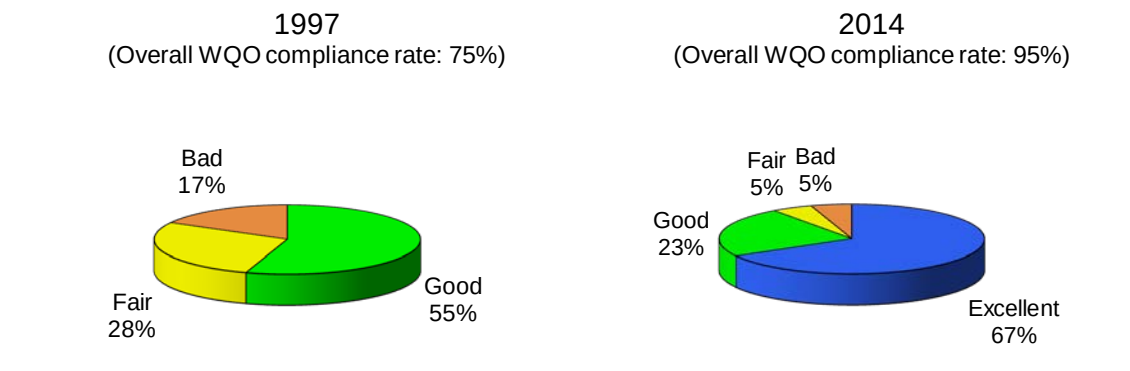


5. Southwestern New Territories and Kowloon rivers

The Southwestern New Territories and Kowloon area runs from Black Point west of Tuen Mun through to the eastern end of Victoria Harbour. The five watercourses being monitored are Tuen Mun River in Tuen Mun, Pai Min Kok Stream and Sam Dip Tam Stream near Tsuen Wan, Kau Wa Keng Stream in Kwai Chung and Kai Tak River located in Kowloon. There was substantial improvement in the water quality of these urban watercourses in the last decade.

In 2014, 16 of the 18 stations (89%) were graded ‘Excellent’ or ‘Good’, as compared with 10 of them graded as ‘Good’ and no ‘Excellent’ station in 1997. The stations with ‘Bad’ water quality grading also decreased from 9 to 1 (only TN1 at Tuen Mun River was graded ‘Bad’ in 2014, as in 2013) during the same period. Similarly, the overall WQO compliance rate of the rivers and streams in the area has risen from 75% in 1997 to 95% in 2014.

WQI gradings for rivers in the Southwestern New Territories and Kowloon, 1997 and 2014



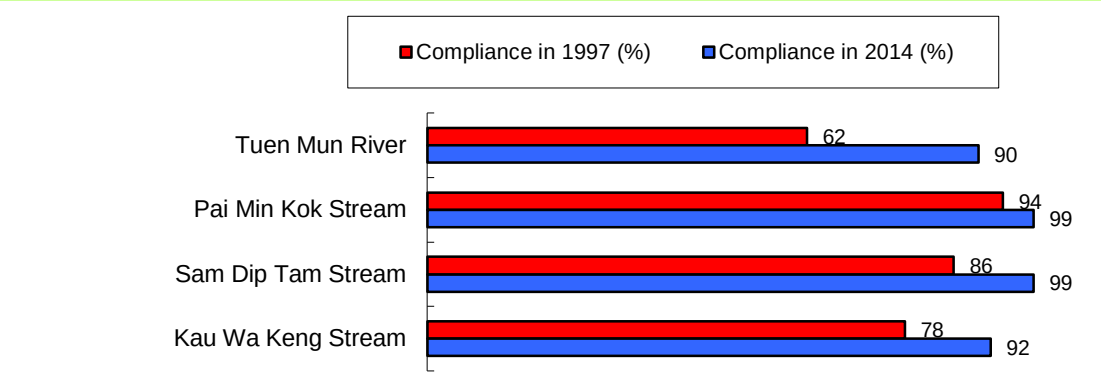
Tuen Mun River showed marked improvement in the last decade. Its WQO compliance rate rose steadily from 62% in 1997 to 90% in 2014. All but the upstream station (TN1) were graded 'Excellent' or 'Good' in 2014, similar to 2013. This improvement was attributed to pollution control efforts as well as implementation of the mitigation measures recommended under the Tuen Mun Sewerage Master Plan. However, the upstream station at TN1 was still 'Bad' and impacted by unsewered villages with an *E. coli* level of 120,000 cfu/100mL in 2014. The *E. coli* levels of the other stations, namely TN2-TN3-TN4-TN5-TN6, remained relatively high at 29,000, 4,500, 7,600, 6,500 and 2,400 cfu/100mL respectively.

Samples were collected from Tuen Mun River on a monthly basis.

Pai Min Kok Stream, still impacted by a few unsewered village houses, achieved an overall WQO compliance rate of 99% in 2014, compared to 98% of 2013. As in 2013, both the upstream station (AN2) and the downstream station (AN1) were graded 'Excellent'. The *E. coli* level of AN1 and AN2 was, nevertheless, relatively high at 15,000 and 24,000

cfu/100mL respectively.

Compliance with the Water Quality Objectives in the rivers of the Southwestern New Territories in 1997 and 2014



All three monitoring stations (from upstream to downstream: TW1, TW2 and TW3) of Tsuen Wan's Sam Dip Tam Stream achieved 98% or higher compliance with the WQO and all achieved an 'Excellent' WQI grading in 2014, similar to 2013. Their *E. coli* levels were 2,000, 16,000, 4,100 cfu/100mL respectively, suggesting local pollution sources in the mid-stream section of the river.

The monitoring station at Kwai Chung's Kau Wa Keng Stream achieved a WQO compliance rate of 92% in 2014, compared with 93% in 2013. Its WQI grading was 'Good', similar to 2013. Its *E. coli* level was relatively high at 46,000 cfu/100mL suggesting local pollution sources affecting the stream.

Half of the six stations of Kai Tak River were graded 'Excellent' in 2014, with the remaining three (KN1, KN3, KN4) graded 'Good', compared to five stations graded "Excellent" and KN1 "Good" in 2013. The *E. coli* levels from upstream to downstream (KN7, KN5, KN4, KN3, KN2, KN1) were 3,200, 22,000, 36,000, 49,000, 42,000, and 190,000 cfu/100mL in 2014 respectively, compared with 2,300, 9,000, 10,000, 14,000, 17,000, and 110,000 cfu/100mL in 2013.

Since mid-2011, the Drainage Services Department started to commission the disinfection facilities at the Sha Tin and Tai Po Sewage Treatment Works; and the treated effluent is now disinfected before discharge to Kai Tak River.

Appendices

Summary of river water quality monitoring stations and sampling frequencies in 2014

Area	Watercourse	Monitoring Station	(Number)	Sampling frequency
Eastern New Territories				
Sha Tin	Shing Mun River			
	Shing Mun Main Channel	TR19I	(1)	monthly
	Siu Lek Yuen Nullah	TR23A, TR23L	(2)	monthly
	Fo Tan Nullah	TR17, TR17L	(2)	monthly
	Kwun Yam Shan Stream	KY1	(1)	monthly
	Tai Wai Nullah	TR19, TR19A, TR19C	(3)	monthly
	Tin Sum Nullah	TR20B	(1)	monthly
Tai Po Town Centre	Lam Tsuen River	TR12, TR12B, TR12C, TR12D, TR12E, TR12F, TR12G, TR12H, TR12I	(9)	monthly
	Tai Po River	TR13	(1)	monthly
Tai Po Rural Area	Tai Po Kau Stream	TR14	(1)	monthly
	Shan Liu Stream	TR4	(1)	monthly
	Tung Tze Stream	TR6	(1)	monthly
Sai Kung	Ho Chung River	PR1, PR2	(2)	monthly
	Sha Kok Mei Stream	PR5, PR6	(2)	monthly
	Tai Chung Hau Stream	PR7, PR8	(2)	monthly
Tseung Kwan O	Tseng Lan Shue Stream	JR3, JR6, JR11	(3)	monthly
Northwestern New Territories				
North District	River Indus (Ng Tung River)	IN1, IN2, IN3	(3)	monthly
	River Beas (Sheung Yue River)	RB1, RB2, RB3	(3)	monthly
	River Ganges (Ping Yuen River)	GR1, GR2, GR3	(3)	monthly
Yuen Long	Yuen Long Creek	YL1, YL2, YL3, YL4	(4)	monthly
	Kam Tin River	KT1, KT2	(2)	monthly
	Tin Shui Wai Nullah	TSR1, TSR2	(2)	monthly
	Fairview Park Nullah	FVR1	(1)	monthly
Lau Fau Shan	Ha Pak Nai Stream	DB1	(1)	monthly
	Tai Shui Hang Stream	DB2	(1)	monthly
	Pak Nai Stream	DB3	(1)	monthly
	Sheung Pak Nai Stream	DB5	(1)	monthly
	Ngau Hom Sha Stream	DB6	(1)	monthly
	Tseng Kok Stream	DB8	(1)	monthly
Lantau Island				
Mui Wo	Mui Wo River	MW1, MW2, MW3, MW4, MW5	(5)	monthly
Tung Chung	Tung Chung River	TC1, TC2, TC3	(3)	monthly
Southwestern New Territories and Kowloon				
Tuen Mun	Tuen Mun River	TN1, TN2, TN3, TN4, TN5, TN6	(6)	monthly
Tsuen Wan and Kwai Chung	Pai Min Kok (Anglers') Stream	AN1, AN2	(2)	monthly
	Sam Dip Tam Stream	TW1, TW2, TW3	(3)	monthly
	Kau Wa Keng Stream	KW3	(1)	monthly
Kowloon	Kai Tak River	KN1, KN2, KN3, KN4, KN5, KN7	(6)	monthly
Total	**30**	**82**		**-**

River water quality parameters and the methods of analysis (part 1 of 2)

Water Quality Parameter	Reporting Limit and Unit	Analytical Method[1] / Analyst
Physical Chemical Properties		
Water temperature	0.1 °C	Multi-parameter water quality data logger, model YSI-6820 / On-site measurement / EPD
Dissolved Oxygen	0.1 mg/L, 1%	
pH	0.1	
Conductivity	1 μS/cm	
Turbidity	0.1 NTU	
Flow	1 L/s	Electromagnetic flow meter, model Flo-mate 2000 / On-site measurement / EPD
Solid Contents		
Suspended Solids	0.5 mg/L	In-house method GL-PH-23, based on APHA[2] 22ed 2540 D / Government Laboratory
Total Solids	0.5 mg/L	In-house method GL-PH-19, based on APHA 22ed 2540 F / Government Laboratory
Total Volatile Solids	0.5 mg/L	In-house method GL-PH-19, based on APHA 20ed 2540 E / Government Laboratory
Aggregate Organics		
5-Day Biochemical Oxygen Demand (BOD_5)	1 mg/L	In-house method based on APHA 18ed 5210 B / EPD
Chemical Oxygen Demand (COD)	2 mg/L	In-house method GL-OR-38 & GL-OR-39, based on ASTM[3] D1252-06, Method B or APHA 22ed 5220 C & D / Government Laboratory
Total Organic Carbon (TOC)	1 mg/L	In-house method GL-OR-32, based on APHA 20ed 5310 B / Government Laboratory
Faecal Bacteria		
E. coli	1 cfu /100 mL	In-house method[4], membrane filtration with CHROMagar Liquid ECC medium / EPD
Faecal Coliforms	1 cfu / 100 mL	
Nutrients		
Ammonia-Nitrogen	0.005 mg/L	In-house method GL-IN-15, based on APHA 22ed 4500-NH_3 / Government Laboratory
Nitrite-Nitrogen	0.002 mg/L	In-house method GL-IN-18, based on APHA 22ed 4500-NO_2^- B (FIA) / Government Laboratory
Nitrate-Nitrogen	0.002 mg/L	In-house method GL-IN-18, based on APHA 22ed 4500-NO_3^- F & I (FIA) / Government Laboratory
Total Kjeldahl Nitrogen	0.05 mg/L	In-house method GL-IN-14 & GL-IN-15, based on ASTM D3590-11 B (FIA) & APHA 20ed 4500-N A&D (FIA) / Government Laboratory
Ortho-phosphate Phosphorus	0.002 mg/L	In-house method GL-IN-16, based on ASTM D515-88 A (FIA) / Government Laboratory
Total Phosphorus	0.02 mg/L	In-house method GL-IN-14 & GL-IN-16, based on ASTM D515-88 B (FIA) & APHA 20ed 4500-P G (FIA) / Government Laboratory
Molybdate-Reactive Silica	0.05 mg/L	In-house method GL-IN-17, based on APHA 20ed 4500-SiO2 C&E (FIA) / Government Laboratory

Reference notes:

1. *Mention of brand names of commercial products does not constitute or imply endorsement or recommendation by the Environmental Protection Department.*
2. *APHA - American Public Health Association: Standard Methods for the Examination of Water and Wastewater.*
3. *ASTM - Annual Book of American Society for the Testing and Materials Standards, Vol. 11.01 & 11.02.*
4. i) Ho, B.S.W. and Tam, T.Y. (1997). Enumeration of *E. coli* in environmental waters and wastewater using a chromogenic medium. *Wat. Sci. Tech.*, **35**, 409-413.
   ii) DoE and DHSS (1983). "The bacteriological examination of drinking water supplies 1982. Report on Public Health and Medical Subjects No. 71. Methods for the Examination of Waters and Associated Materials". Department of Environment, Department of Health and Social Security, Public Health Laboratory Service, H.M.S.O. London.

River water quality parameters and the methods of analysis (part 2 of 2)

Water Quality Parameter	Reporting Limit and Unit	Analytical Method[1] / Analyst
Metals		
Aluminium	50 μg/L	In-house method GL-TE-63, based on APHA 22ed 3111, 3112, 3113, 3114 & 3120 / Government Laboratory
Antimony	1 μg/L	
Arsenic	1 μg/L	
Barium	1 μg/L	
Beryllium	1 μg/L	
Boron	50 μg/L	
Cadmium	0.1 μg/L	
Chromium	1 μg/L	
Copper	1 μg/L	
Iron	50 μg/L	
Lead	1 μg/L	
Manganese	10 μg/L	
Mercury	1 μg/L	
Molybdenum	2 μg/L	
Nickel	1 μg/L	
Silver	1 μg/L	
Thallium	1 μg/L	
Vanadium	2 μg/L	
Zinc	10 μg/L	
Industrial and Commercial Pollutants		
Cyanide	0.01 mg/L	In-house method GL-IN-42, based on ASTM D 2036-09 or APHA 22ed 4500-CN / Government Laboratory
Fluoride	0.2 mg/L	In-house method GL-IN-47, based on APHA 22ed 4500-F^- C & G (Ion Selective Electrode) and ASTM D1179-99 B (FIA) / Government Laboratory
Anionic Surfactants (as Manoxol OT)	0.05 mg/L	In-house method GL-OR-30, based on BS 6068, Section 2.23 (1994) (Colorimetric) & In-house method GL-OR-65, based on Abbott, D.C. "Analyst", Vol.87, p.286(1962) & S. Motomizu et al., "Analyst" Vol.113, p.747(1988) (FIA) / Government Laboratory
Oil and Grease	0.5 mg/L	In-house method GL-OR-26, based on APHA 22ed 5520 B / Government Laboratory
Sulphide Contents		
Free Hydrogen Sulphide	0.01 mg/L	In-house method GL-IN-46, based on APHA 22ed 4500S^{2-} D (Colorimetric) / Government Laboratory
Sulphide	0.02 mg/L	
Plant Pigments		
Chlorophyll-*a*	0.2 μg/L	In house method GL-OR-34, based on APHA 20ed 10200H 2 (spectrophotometric) / Government Laboratory
Pheo-Pigment	0.2 μg/L	

Reference notes:

1. *Mention of brand names of commercial products does not constitute or imply endorsement or recommendation by the Environmental Protection Department.*
2. *APHA - American Public Health Association: Standard Methods for the Examination of Water and Wastewater.*
3. *ASTM - Annual Book of American Society for the Testing and Materials Standards, Vol. 11.01 & 11.02.*

Key Water Quality Objectives (WQOs) for river monitoring stations in the Eastern New Territories

Watercourse	Monitoring station	Key Water Quality Objective				
		pH range	Maximum 5-Day Biochemical Oxygen Demand (mg/L)	Maximum Chemical Oxygen Demand (mg/L)	Maximum Annual Median Suspended Solids (mg/L)	Minimum Dissolved Oxygen (mg/L)
Tolo Harbour and Channel Water Control Zone						
Shing Mun River	KY1	6.5 - 8.5	3	15	20	4
	TR17	6.5 - 8.5	5	30	20	4
	TR17L	6.5 - 8.5	5	30	20	4
	TR19	6.5 - 8.5	5	30	20	4
	TR19A	6.5 - 8.5	5	30	20	4
	TR19C	6.5 - 8.5	5	30	20	4
	TR19I	6.0 - 9.0	5	30	25	4
	TR20B	6.5 - 8.5	5	30	20	4
	TR23A	6.5 - 8.5	3	15	20	4
	TR23L	6.5 - 8.5	3	15	20	4
Lam Tsuen River	TR12	6.5 - 8.5	3	15	20	4
	TR12B	6.5 - 8.5	3	15	20	4
	TR12C	6.5 - 8.5	3	15	20	4
	TR12D	6.5 - 8.5	3	15	20	4
	TR12E	6.5 - 8.5	3	15	20	4
	TR12F	6.5 - 8.5	3	15	20	4
	TR12G	6.5 - 8.5	3	15	20	4
	TR12H	6.5 - 8.5	3	15	20	4
	TR12I	6.0 - 9.0	5	30	25	4
Tai Po River	TR13	6.5 - 8.5	5	30	20	4
Tai Po Kau Stream	TR14	6.0 - 9.0	5	30	25	4
Shan Liu Stream	TR4	6.0 - 9.0	5	30	25	4
Tung Tze Stream	TR6	6.0 - 9.0	5	30	25	4
Port Shelter Water Control Zone						
Ho Chung River	PR1	6.5 - 8.5	5	30	25	4
	PR2	6.5 - 8.5	5	30	25	4
Sha Kok Mei Stream	PR5	6.0 - 9.0	5	30	25	4
	PR6	6.0 - 9.0	5	30	25	4
Tai Chung Hau Stream	PR7	6.0 - 9.0	5	30	25	4
	PR8	6.0 - 9.0	5	30	25	4
Junk Bay Water Control Zone						
Tseng Lan Shue Stream	JR3	6.0 - 9.0	5	30	25	4
	JR6	6.0 - 9.0	5	30	25	4
	JR11	6.0 - 9.0	5	30	25	4

* The WQO compliance for suspended solids is based on annual median value, while WQO compliance for other parameters is based on individual measurements.

Key Water Quality Objectives (WQOs) for river monitoring stations in the Northwestern New Territories

Watercourse	Monitoring station	Key Water Quality Objective				
		pH range	Maximum 5-Day Biochemical Oxgyen Demand (mg/L)	Maximum Chemical Oxygen Demand (mg/L)	Maximum Annual Median Suspended Solids (mg/L)	Minimum Dissolved Oxygen (mg/L)
Deep Bay Water Control Zone						
River Indus	IN1	6.5 - 8.5	3	15	20	4
	IN2	6.5 - 8.5	3	15	20	4
	IN3	6.5 - 8.5	3	15	20	4
River Beas	RB1	6.5 - 8.5	3	15	20	4
	RB2	6.5 - 8.5	3	15	20	4
	RB3	6.5 - 8.5	3	15	20	4
River Ganges	GR1	6.5 - 8.5	3	15	20	4
	GR2	6.5 - 8.5	3	15	20	4
	GR3	6.5 - 8.5	3	15	20	4
Yuen Long Creek	YL1	6.5 - 8.5	3	15	20	4
	YL2	6.5 - 8.5	3	15	20	4
	YL3	6.5 - 8.5	5	30	20	4
	YL4	6.5 - 8.5	5	30	20	4
Kam Tin River	KT1	6.5 - 8.5	3	15	20	4
	KT2	6.5 - 8.5	3	15	20	4
Tin Shui Wai Nullah	TSR1	6.0 - 9.0	5	30	20	4
	TSR2	6.0 - 9.0	5	30	20	4
Fairview Park Nullah	FVR1	6.0 - 9.0	5	30	20	4
Ha Pak Nai Stream	DB1	6.0 - 9.0	5	30	20	4
Tai Shui Hang Stream	DB2	6.0 - 9.0	5	30	20	4
Pak Nai Stream	DB3	6.0 - 9.0	5	30	20	4
Sheung Pak Nai Stream	DB5	6.0 - 9.0	5	30	20	4
Ngau Hom Sha Stream	DB6	6.0 - 9.0	5	30	20	4
Tsang Kok Stream	DB8	6.0 - 9.0	5	30	20	4

* The WQO compliance for suspended solids is based on annual median value, while WQO compliance for other parameters is based on individual measurements.

Key Water Quality Objectives (WQOs) for river monitoring stations on Lantau Island

Watercourse	Monitoring station	Key Water Quality Objective				
		pH range	Maximum 5-Day Biochemical Oxgyen Demand (mg/L)	Maximum Chemical Oxygen Demand (mg/L)	Maximum Annual Median Suspended Solids (mg/L)	Minimum Dissolved Oxygen (mg/L)
Southern Water Control Zone						
Mui Wo River	MW1	6.5 - 8.5	5	30	20	4
	MW2	6.5 - 8.5	5	30	20	4
	MW3	6.5 - 8.5	5	30	20	4
	MW4	6.5 - 8.5	5	30	20	4
	MW5	6.0 - 9.0	5	30	25	4
North Western Water Control Zone						
Tung Chung River	TC1	6.0 - 9.0	5	30	25	4
	TC2	6.0 - 9.0	5	30	25	4
	TC3	6.0 - 9.0	5	30	25	4

* The WQO compliance for suspended solids is based on annual median value, while WQO compliance for other parameters is based on individual measurements.

Key Water Quality Objectives (WQOs) for river monitoring stations in the Southwestern New Territories and Kowloon

Watercourse	Monitoring station	Key Water Quality Objective				
		pH range	Maximum 5-Day Biochemical Oxgyen Demand (mg/L)	Maximum Chemical Oxygen Demand (mg/L)	Maximum Annual Median Suspended Solids (mg/L)	Minimum Dissolved Oxygen (mg/L)
North Western Water Control Zone						
Tuen Mun River	TN1	6.0 - 9.0	5	30	25	4
	TN2	6.5 - 8.5	3	15	20	4
	TN3	6.0 - 9.0	5	30	25	4
	TN4	6.0 - 9.0	5	30	25	4
	TN5	6.0 - 9.0	5	30	25	4
	TN6	6.0 - 9.0	5	30	25	4
Western Buffer Water Control Zone						
Pai Min Kok (Anglers') Stream	AN1	6.0 - 9.0	5	30	25	4
	AN2	6.0 - 9.0	5	30	25	4
Victoria Harbour Water Control Zone						
Sam Dip Tam Stream	TW1	6.0 - 9.0	5	30	25	4
	TW2	6.0 - 9.0	5	30	25	4
	TW3	6.0 - 9.0	5	30	25	4
Kau Wa Keng Stream	KW3	6.0 - 9.0	5	30	25	4
Kai Tak River	KN1	Not applicable				
	KN2					
	KN3					
	KN4					
	KN5					
	KN7					

* The WQO compliance for suspended solids is based on annual median value, while WQO compliance for other parameters is based on individual measurements.

Summary of water quality monitoring data for Shing Mun River (Main Channel and Siu Lek Yuen Nullah) in 2014

Parameter	Unit	Shing Mun Main Channel	Siu Lek Yuen Nullah	
		TR19I	TR23L	TR23A
Dissolved oxygen	mg/L	7.8 (4.6 - 8.9)	8.9 (8.0 - 10.5)	6.8 (5.1 - 9.5)
pH		7.8 (7.4 - 8.4)	8.7 (8.1 - 8.8)	7.5 (6.9 - 7.8)
Suspended solids	mg/L	4 (2 - 23)	2 (<1 - 12)	3 (<1 - 12)
5-day Biochemical Oxygen Demand	mg/L	4 (2 - 9)	<1 (<1 - 2)	2 (<1 - 3)
Chemical Oxygen Demand	mg/L	9 (3 - 28)	3 (<2 - 8)	7 (4 - 19)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - 0.7)
Faecal coliforms	cfu/ 100mL	10,000 (110 - 120,000)	20,000 (3,400 - 240,000)	26,000 (300 - 370,000)
E. coli	cfu/ 100mL	1,300 (10 - 54,000)	840 (130 - 4,900)	5,000 (30 - 150,000)
Ammonia-nitrogen	mg/L	0.16 (0.03 - 0.38)	0.01 (<0.01 - 0.03)	0.38 (0.15 - 1.50)
Nitrate-nitrogen	mg/L	0.19 (0.04 - 0.74)	0.23 (0.13 - 0.63)	0.35 (0.18 - 0.56)
Total Kjeldahl Nitrogen	mg/L	0.46 (0.30 - 0.76)	0.15 (0.06 - 0.40)	0.68 (0.34 - 2.10)
Ortho-phosphate	mg/L	<0.01 (<0.01 - 0.05)	0.01 (<0.01 - 0.03)	0.03 (<0.01 - 0.11)
Total phosphorus	mg/L	0.04 (0.03 - 0.08)	<0.02 (<0.02 - 0.04)	0.06 (0.02 - 0.26)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	59 (<50 - 166)	83 (<50 - 395)	84 (<50 - 238)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	3 (1 - 6)	<1 (<1 - <1)	3 (<1 - 4)
Copper	µg/L	7 (3 - 12)	<1 (<1 - 2)	4 (2 - 5)
Lead	µg/L	<1 (<1 - <1)	<1 (<1 - 3)	<1 (<1 - 3)
Zinc	µg/L	19 (13 - 27)	13 (<10 - 60)	21 (15 - 52)
Flow	L/s	NM	56 (11 - 207)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Shing Mun River (Fo Tan Nullah and Kwun Yam Shan Stream) in 2014

Parameter	Unit	Fo Tan Nullah		Kwun Yam Shan Stream
		TR17	TR17L	KY1
Dissolved oxygen	mg/L	8.6 (7.0 - 10.9)	6.9 (5.3 - 9.1)	8.5 (7.8 - 10.4)
pH		8.2 (7.5 - 9.7)	7.5 (7.1 - 8.0)	8.2 (7.6 - 8.9)
Suspended solids	mg/L	8 (2 - 36)	2 (<1 - 13)	3 (<1 - 21)
5-day Biochemical Oxygen Demand	mg/L	18 (2 - 57)	2 (2 - 4)	<1 (<1 - <1)
Chemical Oxygen Demand	mg/L	22 (3 - 47)	9 (5 - 18)	2 (<2 - 4)
Oil & grease	mg/L	<0.5 (<0.5 - 1.0)	<0.5 (<0.5 - 0.7)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	52,000 (<100 - 1,000,000)	33,000 (230 - 480,000)	2,000 (98 - 14,000)
E. coli	cfu/ 100mL	12,000 (<100 - 250,000)	4,100 (80 - 44,000)	290 (24 - 3,300)
Ammonia-nitrogen	mg/L	0.13 (<0.01 - 1.90)	0.29 (0.07 - 0.69)	0.01 (<0.01 - 0.03)
Nitrate-nitrogen	mg/L	0.46 (<0.01 - 0.79)	0.34 (0.21 - 0.59)	0.62 (0.24 - 1.10)
Total Kjeldahl nitrogen	mg/L	1.75 (0.15 - 4.50)	0.61 (0.41 - 1.60)	0.16 (0.06 - 0.33)
Ortho-phosphate	mg/L	0.03 (<0.01 - 0.09)	0.02 (<0.01 - 0.04)	0.08 (0.06 - 0.14)
Total phosphorus	mg/L	0.08 (0.03 - 0.53)	0.05 (0.03 - 0.12)	0.09 (0.07 - 0.19)
Total sulphide	mg/L	<0.02 (<0.02 - 0.03)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	82 (<50 - 158)	99 (<50 - 245)	54 (<50 - 174)
Cadmium	µg/L	<0.1 (<0.1 - 2.7)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	1 (<1 - 4)	3 (<1 - 6)	<1 (<1 - 1)
Copper	µg/L	6 (2 - 16)	5 (1 - 10)	<1 (<1 - 2)
Lead	µg/L	1 (<1 - 3)	1 (<1 - 2)	<1 (<1 - 3)
Zinc	µg/L	43 (12 - 83)	21 (13 - 37)	16 (<10 - 67)
Flow	L/s	114 (55 - 218)	NM	6 (<1 - 29)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Shing Mun River (Tai Wai Nullah and Tin Sum Nullah) in 2014

Parameter	Unit	Tai Wai Nullah			Tin Sum Nullah
		TR19A	TR19C	TR19	TR20B
Dissolved oxygen	mg/L	8.7 (7.9 - 10.7)	9.1 (8.5 - 11.0)	9.9 (8.7 - 13.8)	8.3 (7.7 - 9.9)
pH		7.9 (7.5 - 8.7)	7.8 (7.4 - 8.0)	7.8 (7.5 - 8.9)	8.1 (7.3 - 11.4)
Suspended solids	mg/L	3 (2 - 7)	3 (2 - 16)	4 (2 - 10)	7 (<1 - 110)
5-day Biochemical Oxygen Demand	mg/L	1 (<1 - 5)	1 (<1 - 5)	3 (<1 - 5)	<1 (<1 - 9)
Chemical Oxygen Demand	mg/L	4 (<2 - 11)	4 (<2 - 14)	6 (2 - 18)	3 (<2 - 10)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.5)
Faecal coliforms	cfu/ 100mL	12,000 (<1 - 640,000)	35,000 (4,800 - 210,000)	73,000 (2,400 - 2,900,000)	9 (<1 - 14,000)
E. coli	cfu/ 100mL	2,700 (<1 - 640,000)	7,400 (800 - 200,000)	11,000 (150 - 120,000)	5 (<1 - 4,900)
Ammonia-nitrogen	mg/L	0.04 (0.02 - 0.24)	0.06 (0.02 - 0.24)	0.08 (0.01 - 0.63)	0.07 (0.02 - 8.70)
Nitrate-nitrogen	mg/L	1.10 (0.35 - 1.70)	0.90 (0.51 - 1.20)	0.85 (0.02 - 1.20)	1.30 (0.44 - 23.00)
Total Kjeldahl nitrogen	mg/L	0.30 (0.09 - 0.79)	0.40 (0.21 - 0.70)	0.40 (0.30 - 1.30)	0.33 (0.09 - 9.70)
Ortho-phosphate	mg/L	0.02 (<0.01 - 0.04)	0.03 (<0.01 - 0.04)	0.02 (<0.01 - 0.05)	0.02 (<0.01 - 0.02)
Total phosphorus	mg/L	0.02 (<0.02 - 0.05)	0.04 (0.02 - 0.07)	0.04 (0.03 - 0.10)	0.02 (<0.02 - 0.04)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.16)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	142 (69 - 329)	118 (64 - 372)	161 (<50 - 285)	268 (65 - 615)
Cadmium	µg/L	0.3 (<0.1 - 0.8)	0.1 (<0.1 - 0.3)	0.1 (<0.1 - 0.4)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	<1 (<1 - 4)	<1 (<1 - 3)	1 (<1 - 6)	3 (<1 - 16)
Copper	µg/L	2 (<1 - 12)	4 (<1 - 15)	5 (<1 - 11)	2 (<1 - 18)
Lead	µg/L	<1 (<1 - 2)	1 (<1 - 3)	1 (<1 - 6)	<1 (<1 - 2)
Zinc	µg/L	37 (<10 - 78)	31 (24 - 53)	35 (11 - 57)	15 (<10 - 35)
Flow	L/s	28 (14 - 50)	61 (20 - 92)	84 (60 - 162)	52 (25 - 104)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Lam Tsuen River in 2014 (Part 1 of 3)

Parameter	Unit	Lam Tsuen River		
		TR12H	TR12D	TR12C
Dissolved oxygen	mg/L	8.5 (7.7 - 10.6)	8.8 (8.0 - 10.4)	7.7 (7.0 - 9.5)
pH		7.5 (7.1 - 7.7)	7.4 (7.0 - 7.6)	7.4 (7.2 - 7.8)
Suspended solids	mg/L	1 (<1 - 4)	1 (<1 - 8)	8 (<1 - 250)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 1)	<1 (<1 - <1)	6 (<1 - 13)
Chemical Oxygen Demand	mg/L	3 (<2 - 4)	<2 (<2 - 3)	9 (5 - 12)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.5)	<0.5 (<0.5 - 0.5)
Faecal coliforms	cfu/ 100mL	5,100 (210 - 16,000)	1,900 (110 - 6,800)	220,000 (81,000 - 870,000)
E. coli	cfu/ 100mL	1,000 (120 - 6,700)	380 (90 - 3,300)	32,000 (11,000 - 190,000)
Ammonia-nitrogen	mg/L	0.04 (0.01 - 0.15)	0.01 (<0.01 - 0.06)	1.18 (0.57 - 2.50)
Nitrate-nitrogen	mg/L	0.69 (0.54 - 1.20)	0.31 (0.20 - 0.87)	0.91 (0.76 - 1.30)
Total Kjeldahl Nitrogen	mg/L	0.18 (0.10 - 1.10)	0.14 (0.08 - 0.22)	1.95 (0.92 - 3.30)
Ortho-phosphate	mg/L	0.03 (0.01 - 0.06)	0.02 (<0.01 - 0.02)	0.13 (0.05 - 0.30)
Total phosphorus	mg/L	0.05 (0.03 - 0.08)	<0.02 (<0.02 - 0.03)	0.22 (0.11 - 0.46)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	<50 (<50 - 71)	<50 (<50 - 61)	103 (53 - 1,419)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.1)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - 2)
Copper	µg/L	1 (<1 - 7)	<1 (<1 - 1)	2 (<1 - 18)
Lead	µg/L	<1 (<1 - 2)	<1 (<1 - 2)	2 (<1 - 19)
Zinc	µg/L	17 (<10 - 33)	21 (14 - 32)	20 (11 - 44)
Flow	L/s	91 (2 - 194)	38 (5 - 168)	86 (9 - 1,089)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Lam Tsuen River in 2014 (Part 2 of 3)

Parameter	Unit	Lam Tsuen River		
		TR12G	TR12F	TR12B
Dissolved oxygen	mg/L	8.3 (7.5 - 10.1)	8.8 (7.4 - 10.5)	9.2 (8.4 - 11.1)
pH		7.3 (7.1 - 7.7)	7.5 (7.0 - 7.9)	7.7 (7.2 - 8.4)
Suspended solids	mg/L	2 (<1 - 110)	5 (<1 - 20)	2 (<1 - 4)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - <1)	<1 (<1 - 2)	<1 (<1 - 2)
Chemical Oxygen Demand	mg/L	3 (<2 - 11)	4 (2 - 6)	3 (2 - 8)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	2,800 (250 - 18,000)	12,000 (3,700 - 34,000)	4,800 (600 - 27,000)
E. coli	cfu/ 100mL	390 (18 - 2,200)	3,200 (620 - 33,000)	1,000 (140 - 23,000)
Ammonia-nitrogen	mg/L	0.02 (0.01 - 0.10)	0.09 (0.05 - 0.17)	0.04 (0.02 - 0.14)
Nitrate-nitrogen	mg/L	0.03 (<0.01 - 0.12)	0.43 (0.28 - 0.59)	0.84 (0.38 - 1.50)
Total Kjeldahl nitrogen	mg/L	0.15 (0.07 - 0.33)	0.27 (0.18 - 0.43)	0.20 (0.15 - 0.39)
Ortho-phosphate	mg/L	0.01 (<0.01 - 0.02)	0.03 (0.01 - 0.06)	0.04 (0.02 - 0.09)
Total phosphorus	mg/L	0.04 (0.02 - 0.14)	0.06 (0.05 - 0.11)	0.06 (0.04 - 0.09)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	<50 (<50 - 631)	<50 (<50 - 129)	54 (<50 - 91)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - 1)	<1 (<1 - <1)	<1 (<1 - <1)
Copper	µg/L	<1 (<1 - 3)	<1 (<1 - <1)	<1 (<1 - 2)
Lead	µg/L	<1 (<1 - 18)	1 (<1 - 9)	<1 (<1 - 2)
Zinc	µg/L	<10 (<10 - 35)	12 (<10 - 32)	14 (<10 - 29)
Flow	L/s	23 (12 - 46)	20 (<1 - 350)	131 (30 - 464)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Lam Tsuen River (Part 3 of 3) and Tai Po River in 2014

Parameter	Unit	Lam Tsuen River			Tai Po River
		TR12E	TR12	TR12I	TR13
Dissolved oxygen	mg/L	8.7 (8.0 - 10.1)	8.6 (7.0 - 11.2)	6.5 (4.4 - 8.7)	7.2 (5.5 - 8.5)
pH		7.9 (7.6 - 8.0)	7.8 (7.4 - 8.5)	7.3 (7.2 - 7.6)	7.3 (7.0 - 7.7)
Suspended solids	mg/L	7 (3 - 320)	5 (<1 - 37)	4 (2 - 9)	2 (<1 - 9)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 1)	4 (<1 - 8)	3 (<1 - 7)	<1 (<1 - 1)
Chemical Oxygen Demand	mg/L	3 (<2 - 6)	8 (4 - 18)	7 (3 - 15)	6 (3 - 15)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - 0.7)	<0.5 (<0.5 - 0.7)
Faecal coliforms	cfu/ 100mL	8,200 (850 - 30,000)	17,000 (1,500 - 120,000)	120,000 (43,000 - 350,000)	33,000 (8,400 - 120,000)
E. coli	cfu/ 100mL	2,600 (450 - 16,000)	3,800 (430 - 49,000)	33,000 (8,000 - 80,000)	12,000 (5,700 - 91,000)
Ammonia-nitrogen	mg/L	0.06 (0.02 - 0.36)	1.50 (0.19 - 3.60)	0.55 (0.01 - 0.84)	0.19 (0.09 - 0.35)
Nitrate-nitrogen	mg/L	0.67 (0.42 - 0.82)	1.50 (0.72 - 3.40)	0.71 (0.26 - 1.30)	0.42 (0.28 - 0.79)
Total Kjeldahl nitrogen	mg/L	0.21 (0.12 - 0.70)	2.15 (0.41 - 4.90)	1.05 (0.30 - 1.50)	0.42 (0.32 - 0.77)
Ortho-phosphate	mg/L	0.02 (<0.01 - 0.03)	0.29 (0.08 - 0.85)	0.07 (<0.01 - 0.14)	0.04 (0.02 - 0.06)
Total phosphorus	mg/L	0.04 (<0.02 - 0.06)	0.41 (0.10 - 0.95)	0.12 (0.04 - 0.18)	0.06 (0.04 - 0.10)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	238 (101 - 1,303)	120 (<50 - 391)	52 (<50 - 187)	66 (<50 - 310)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	<1 (<1 - 2)	<1 (<1 - <1)	2 (1 - 6)	2 (<1 - 6)
Copper	µg/L	<1 (<1 - 8)	2 (<1 - 6)	4 (2 - 8)	3 (2 - 15)
Lead	µg/L	1 (<1 - 25)	1 (<1 - 14)	<1 (<1 - 3)	<1 (<1 - 2)
Zinc	µg/L	18 (<10 - 41)	20 (<10 - 146)	17 (<10 - 43)	17 (<10 - 176)
Flow	L/s	173 (100 - 264)	61 (10 - 261)	NM	134 (58 - 244)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tai Po Kau Stream, Shan Liu Stream and Tung Tze Stream in 2014

Parameter	Unit	Tai Po Kau Stream TR14	Shan Liu Stream TR4	Tung Tze Stream TR6
Dissolved oxygen	mg/L	8.5 (6.4 - 9.8)	7.7 (5.0 - 8.8)	6.9 (4.6 - 9.3)
pH		7.2 (7.1 - 7.7)	7.4 (7.0 - 7.9)	7.5 (7.3 - 8.1)
Suspended solids	mg/L	1 (<1 - 6)	4 (2 - 6)	5 (2 - 17)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - <1)	2 (1 - 4)	2 (<1 - 2)
Chemical Oxygen Demand	mg/L	3 (<2 - 10)	5 (3 - 9)	11 (6 - 17)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	1,200 (89 - 9,200)	11,000 (2,800 - 49,000)	6,600 (610 - 32,000)
E. coli	cfu/ 100mL	250 (35 - 3,800)	4,200 (1,300 - 41,000)	2,900 (90 - 12,000)
Ammonia-nitrogen	mg/L	0.04 (0.02 - 0.10)	0.39 (0.25 - 0.69)	0.80 (0.11 - 1.50)
Nitrate-nitrogen	mg/L	0.23 (0.10 - 0.65)	1.50 (0.86 - 1.90)	0.43 (0.03 - 1.00)
Total Kjeldahl nitrogen	mg/L	0.19 (0.12 - 0.39)	0.62 (0.47 - 1.10)	1.15 (0.23 - 3.50)
Ortho-phosphate	mg/L	0.02 (<0.01 - 0.02)	0.14 (0.11 - 0.18)	0.07 (0.01 - 0.12)
Total phosphorus	mg/L	0.02 (<0.02 - 0.04)	0.16 (0.13 - 0.30)	0.12 (0.03 - 0.18)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.09)
Aluminium	µg/L	63 (<50 - 266)	65 (<50 - 158)	60 (<50 - 129)
Cadmium	µg/L	<0.1 (<0.1 - 0.3)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.1)
Chromium	µg/L	1 (<1 - 5)	<1 (<1 - 2)	3 (<1 - 17)
Copper	µg/L	1 (<1 - 6)	1 (<1 - 4)	4 (<1 - 11)
Lead	µg/L	<1 (<1 - 2)	<1 (<1 - 2)	<1 (<1 - 2)
Zinc	µg/L	16 (<10 - 38)	13 (<10 - 34)	20 (<10 - 118)
Flow	L/s	74 (21 - 288)	47 (2 - 87)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Ho Chung River in 2014

Parameter	Unit	Ho Chung River	
		PR1	PR2
Dissolved oxygen	mg/L	8.0 (4.8 - 8.7)	8.4 (7.9 - 9.9)
pH		7.1 (6.5 - 7.5)	7.5 (7.2 - 7.8)
Suspended solids	mg/L	3 (<1 - 8)	2 (1 - 5)
5-day Biochemical Oxygen Demand	mg/L	2 (<1 - 6)	<1 (<1 - 1)
Chemical Oxygen Demand	mg/L	10 (<2 - 29)	3 (<2 - 4)
Oil & grease	mg/L	<0.5 (<0.5 - 0.7)	<0.5 (<0.5 - 0.7)
Faecal coliforms	cfu/ 100mL	31,000 (2,700 - 340,000)	4,000 (650 - 21,000)
E. coli	cfu/ 100mL	13,000 (900 - 83,000)	570 (94 - 3,100)
Ammonia-nitrogen	mg/L	1.35 (0.04 - 5.80)	0.04 (<0.01 - 0.05)
Nitrate-nitrogen	mg/L	0.32 (0.17 - 0.42)	0.28 (0.16 - 0.35)
Total Kjeldahl nitrogen	mg/L	1.65 (0.18 - 6.60)	0.12 (0.07 - 0.28)
Ortho-phosphate	mg/L	0.10 (<0.01 - 0.48)	0.01 (<0.01 - 0.02)
Total phosphorus	mg/L	0.16 (0.03 - 0.71)	<0.02 (<0.02 - 0.03)
Total sulphide	mg/L	<0.02 (<0.02 - 0.08)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	73 (<50 - 219)	61 (<50 - 91)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	2 (<1 - 5)	<1 (<1 - 1)
Copper	µg/L	2 (<1 - 6)	<1 (<1 - 34)
Lead	µg/L	<1 (<1 - 1)	<1 (<1 - 2)
Zinc	µg/L	18 (<10 - 28)	15 (<10 - 28)
Flow	L/s	NM	390 (270 - 870)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Sha Kok Mei Stream in 2014

Parameter	Unit	Sha Kok Mei Stream	
		PR5	PR6
Dissolved oxygen	mg/L	8.1 (7.0 - 10.0)	8.7 (7.5 - 9.7)
pH		7.8 (7.2 - 8.2)	7.3 (7.0 - 7.6)
Suspended solids	mg/L	1 (<1 - 6)	1 (<1 - 4)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 9)	<1 (<1 - 5)
Chemical Oxygen Demand	mg/L	4 (<2 - 13)	5 (3 - 7)
Oil & grease	mg/L	<0.5 (<0.5 - 1.2)	<0.5 (<0.5 - 0.9)
Faecal coliforms	cfu/ 100mL	430 (<10 - 41,000)	17,000 (4,800 - 57,000)
E. coli	cfu/ 100mL	180 (<10 - 23,000)	7,700 (1,800 - 32,000)
Ammonia-nitrogen	mg/L	0.12 (0.02 - 0.36)	0.12 (0.05 - 1.90)
Nitrate-nitrogen	mg/L	0.70 (0.59 - 1.40)	1.75 (1.40 - 2.80)
Total Kjeldahl nitrogen	mg/L	0.38 (0.23 - 0.72)	0.38 (0.18 - 2.30)
Ortho-phosphate	mg/L	0.05 (0.01 - 0.11)	0.08 (0.05 - 0.33)
Total phosphorus	mg/L	0.07 (<0.02 - 0.13)	0.10 (0.05 - 0.44)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.03)
Aluminium	µg/L	60 (<50 - 109)	<50 (<50 - 121)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - <1)
Copper	µg/L	1 (<1 - 7)	1 (<1 - 5)
Lead	µg/L	<1 (<1 - 2)	<1 (<1 - 2)
Zinc	µg/L	17 (13 - 1,725)	16 (<10 - 94)
Flow	L/s	118 (54 - 228)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tai Chung Hau Stream in 2014

Parameter	Unit	Tai Chung Hau Stream	
		PR7	PR8
Dissolved oxygen	mg/L	8.3 (7.2 - 10.7)	8.1 (7.6 - 9.9)
pH		7.8 (7.0 - 9.3)	7.9 (7.4 - 9.5)
Suspended solids	mg/L	6 (3 - 110)	3 (<1 - 89)
5-day Biochemical Oxygen Demand	mg/L	2 (<1 - 4)	2 (<1 - 8)
Chemical Oxygen Demand	mg/L	5 (3 - 11)	5 (<2 - 8)
Oil & grease	mg/L	<0.5 (<0.5 - 0.8)	<0.5 (<0.5 - 0.8)
Faecal coliforms	cfu/ 100mL	25,000 (11,000 - 63,000)	33,000 (10,000 - 200,000)
E. coli	cfu/ 100mL	7,600 (2,400 - 19,000)	5,800 (800 - 16,000)
Ammonia-nitrogen	mg/L	0.08 (<0.01 - 0.21)	0.06 (<0.01 - 0.15)
Nitrate-nitrogen	mg/L	0.62 (0.38 - 0.97)	0.79 (0.52 - 1.20)
Total Kjeldahl Nitrogen	mg/L	0.37 (0.14 - 0.63)	0.31 (0.15 - 0.94)
Ortho-phosphate	mg/L	0.03 (<0.01 - 0.07)	0.03 (<0.01 - 0.07)
Total phosphorus	mg/L	0.05 (0.03 - 0.09)	0.06 (0.04 - 0.13)
Total sulphide	mg/L	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	267 (88 - 908)	134 (<50 - 1,360)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	1 (<1 - 4)	<1 (<1 - 5)
Copper	µg/L	2 (<1 - 38)	1 (<1 - 12)
Lead	µg/L	1 (<1 - 4)	<1 (<1 - 6)
Zinc	µg/L	15 (11 - 61)	19 (11 - 76)
Flow	L/s	74 (48 - 540)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tseng Lan Shue Stream in 2014

Parameter	Unit	Tseng Lan Shue Stream		
		JR3	JR6	JR11
Dissolved oxygen	mg/L	6.7 (4.9 - 8.1)	7.8 (7.4 - 9.2)	8.7 (8.0 - 10.8)
pH		7.2 (7.1 - 7.5)	7.5 (7.4 - 7.8)	7.7 (7.5 - 8.3)
Suspended solids	mg/L	5 (<1 - 12)	5 (1 - 31)	1 (<1 - 10)
5-day Biochemical Oxygen Demand	mg/L	14 (2 - 47)	7 (2 - 21)	<1 (<1 - 2)
Chemical Oxygen Demand	mg/L	24 (6 - 41)	13 (6 - 17)	6 (3 - 9)
Oil & grease	mg/L	<0.5 (<0.5 - 1.3)	<0.5 (<0.5 - 0.7)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	91,000 (<100 - 340,000)	120,000 (10,000 - 680,000)	3,300 (320 - 16,000)
E. coli	cfu/ 100mL	48,000 (<100 - 190,000)	52,000 (6,000 - 590,000)	790 (170 - 9,000)
Ammonia-nitrogen	mg/L	3.80 (0.80 - 13.00)	0.35 (0.10 - 0.82)	0.06 (0.02 - 0.17)
Nitrate-nitrogen	mg/L	1.40 (0.34 - 1.70)	2.10 (1.30 - 2.40)	3.10 (1.10 - 5.60)
Total Kjeldahl nitrogen	mg/L	5.70 (1.10 - 16.00)	1.30 (0.60 - 3.70)	0.43 (0.21 - 0.79)
Ortho-phosphate	mg/L	0.59 (0.16 - 1.20)	0.40 (0.12 - 0.55)	0.35 (0.12 - 0.60)
Total phosphorus, SP	mg/L	0.74 (0.20 - 1.50)	0.56 (0.20 - 0.97)	0.40 (0.14 - 0.74)
Total sulphide	mg/L	<0.02 (<0.02 - 0.04)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	110 (50 - 277)	139 (82 - 313)	77 (<50 - 141)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - 1)	<1 (<1 - <1)
Copper	µg/L	4 (2 - 37)	3 (2 - 5)	1 (<1 - 4)
Lead	µg/L	1 (<1 - 2)	1 (<1 - 6)	<1 (<1 - 2)
Zinc	µg/L	31 (18 - 86)	31 (18 - 44)	23 (<10 - 38)
Flow	L/s	NM	NM	84 (44 - 328)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for River Indus in 2014

Parameter	Unit	River Indus		
		IN1	IN2	IN3
Dissolved oxygen	mg/L	6.1 (3.1 - 7.8)	7.1 (5.6 - 8.5)	7.9 (6.4 - 9.9)
pH		7.2 (6.9 - 8.0)	7.2 (7.1 - 7.8)	7.4 (7.0 - 8.1)
Suspended solids	mg/L	21 (6 - 170)	5 (2 - 46)	4 (<1 - 120)
5-day Biochemical Oxygen Demand	mg/L	4 (1 - 22)	3 (<1 - 9)	<1 (<1 - 5)
Chemical Oxygen Demand	mg/L	16 (10 - 37)	8 (5 - 14)	5 (3 - 15)
Oil & grease	mg/L	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	93,000 (19,000 - 1,800,000)	18,000 (5,900 - 130,000)	10,000 (930 - 580,000)
E. coli	cfu/ 100mL	21,000 (3,600 - 300,000)	2,600 (560 - 34,000)	1,500 (23 - 81,000)
Ammonia-nitrogen	mg/L	1.07 (0.19 - 4.30)	0.73 (0.20 - 1.50)	0.06 (0.04 - 0.15)
Nitrate-nitrogen	mg/L	1.95 (1.10 - 6.40)	1.15 (0.69 - 1.50)	0.79 (0.44 - 1.00)
Total Kjeldahl nitrogen	mg/L	2.50 (0.98 - 6.20)	1.25 (0.56 - 2.10)	0.36 (0.22 - 0.60)
Ortho-phosphate	mg/L	0.16 (0.06 - 0.49)	0.10 (0.03 - 0.14)	0.11 (0.07 - 0.20)
Total phosphorus	mg/L	0.32 (0.19 - 0.93)	0.17 (0.11 - 0.33)	0.15 (0.10 - 0.31)
Total sulphide	mg/L	<0.02 (<0.02 - 0.04)	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	188 (136 - 829)	75 (<50 - 300)	120 (<50 - 508)
Cadmium	µg/L	<0.1 (<0.1 - 0.6)	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.1)
Chromium	µg/L	1 (<1 - 4)	<1 (<1 - <1)	<1 (<1 - 7)
Copper	µg/L	4 (2 - 22)	2 (2 - 7)	2 (<1 - 6)
Lead	µg/L	2 (<1 - 25)	1 (<1 - 10)	<1 (<1 - 9)
Zinc	µg/L	27 (13 - 289)	26 (17 - 95)	17 (<10 - 50)
Flow	L/s	NM	NM	18 (15 - 41)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for River Beas in 2014

Parameter	Unit	River Beas		
		RB1	RB2	RB3
Dissolved oxygen	mg/L	9.1 (7.2 - 10.8)	7.2 (5.8 - 8.6)	8.0 (4.0 - 10.1)
pH		7.8 (7.4 - 8.2)	7.3 (7.1 - 7.7)	7.3 (7.1 - 7.8)
Suspended solids	mg/L	4 (3 - 12)	5 (3 - 11)	10 (6 - 27)
5-day Biochemical Oxygen Demand	mg/L	2 (<1 - 5)	5 (2 - 12)	6 (1 - 26)
Chemical Oxygen Demand	mg/L	10 (5 - 14)	11 (7 - 20)	15 (7 - 28)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.5)
Faecal coliforms	cfu/ 100mL	29,000 (11,000 - 290,000)	19,000 (5,200 - 190,000)	48,000 (8,800 - 130,000)
E. coli	cfu/ 100mL	8,400 (2,200 - 25,000)	3,000 (800 - 7,700)	9,100 (2,900 - 40,000)
Ammonia-nitrogen	mg/L	0.19 (0.09 - 0.66)	0.90 (0.49 - 3.80)	1.35 (0.47 - 3.40)
Nitrate-nitrogen	mg/L	0.87 (0.45 - 1.40)	0.43 (0.03 - 0.98)	0.54 (<0.01 - 2.90)
Total Kjeldahl nitrogen	mg/L	0.61 (0.34 - 1.60)	1.50 (0.87 - 5.90)	2.05 (0.95 - 4.80)
Ortho-phosphate	mg/L	0.19 (0.15 - 0.32)	0.21 (0.11 - 0.40)	0.14 (0.07 - 0.41)
Total phosphorus	mg/L	0.31 (0.19 - 0.55)	0.37 (0.20 - 0.78)	0.35 (0.23 - 0.69)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.03)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	72 (<50 - 147)	<50 (<50 - 114)	89 (<50 - 434)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - <1)	<1 (<1 - 1)
Copper	µg/L	2 (<1 - 3)	2 (<1 - 3)	3 (2 - 9)
Lead	µg/L	1 (<1 - 1)	<1 (<1 - 1)	1 (<1 - 3)
Zinc	µg/L	21 (14 - 40)	23 (14 - 75)	56 (23 - 104)
Flow	L/s	122 (36 - 305)	164 (48 - 300)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for River Ganges in 2014

Parameter	Unit	River Ganges		
		GR1	GR2	GR3
Dissolved oxygen	mg/L	6.9 (5.5 - 7.6)	6.4 (5.0 - 7.5)	7.7 (6.3 - 8.8)
pH		7.4 (7.1 - 7.6)	7.1 (7.0 - 7.5)	7.3 (6.8 - 7.7)
Suspended solids	mg/L	7 (2 - 100)	13 (<1 - 88)	5 (3 - 180)
5-day Biochemical Oxygen Demand	mg/L	6 (2 - 13)	3 (<1 - 12)	<1 (<1 - 8)
Chemical Oxygen Demand	mg/L	16 (9 - 29)	11 (6 - 20)	3 (<2 - 22)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	21,000 (820 - 440,000)	34,000 (3,500 - 480,000)	18,000 (270 - 1,400,000)
E. coli	cfu/ 100mL	9,800 (790 - 340,000)	10,000 (1,900 - 160,000)	1,700 (84 - 39,000)
Ammonia-nitrogen	mg/L	5.50 (0.33 - 29.00)	0.86 (0.14 - 6.50)	0.11 (0.03 - 0.23)
Nitrate-nitrogen	mg/L	1.60 (0.77 - 3.50)	1.15 (0.53 - 2.40)	0.33 (0.13 - 0.92)
Total Kjeldahl nitrogen	mg/L	6.10 (0.83 - 32.00)	1.60 (0.44 - 8.30)	0.26 (0.13 - 0.64)
Ortho-phosphate	mg/L	1.40 (0.32 - 2.90)	0.25 (0.10 - 1.40)	<0.01 (<0.01 - 0.01)
Total phosphorus	mg/L	1.65 (0.48 - 3.20)	0.44 (0.29 - 1.60)	<0.02 (<0.02 - 0.06)
Total sulphide	mg/L	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - 0.03)	<0.02 (<0.02 - 0.03)
Aluminium	µg/L	89 (<50 - 349)	119 (<50 - 430)	<50 (<50 - 640)
Cadmium	µg/L	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.4)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - 1)	<1 (<1 - <1)
Copper	µg/L	3 (2 - 8)	4 (1 - 101)	<1 (<1 - 7)
Lead	µg/L	1 (<1 - 7)	2 (<1 - 34)	1 (<1 - 10)
Zinc	µg/L	23 (15 - 57)	33 (21 - 150)	21 (<10 - 198)
Flow	L/s	14 (5 - 56)	28 (11 - 141)	90 (30 - 195)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Yuen Long Creek in 2014 (Part 1 of 2)

Parameter	Unit	Yuen Long Creek	
		YL1	YL2
Dissolved oxygen	mg/L	5.2 (3.3 - 8.0)	6.5 (3.3 - 9.7)
pH		7.3 (7.1 - 7.5)	7.4 (7.2 - 7.5)
Suspended solids	mg/L	16 (5 - 450)	5 (2 - 9)
5-day Biochemical Oxygen Demand	mg/L	19 (4 - 90)	8 (2 - 13)
Chemical Oxygen Demand	mg/L	23 (8 - 120)	26 (17 - 37)
Oil & grease	mg/L	<0.5 (<0.5 - 0.9)	0.6 (<0.5 - 1.0)
Faecal coliforms	cfu/ 100mL	460,000 (86,000 - 2,300,000)	150,000 (35,000 - 1,200,000)
E. coli	cfu/ 100mL	160,000 (49,000 - 870,000)	78,000 (4,300 - 930,000)
Ammonia-nitrogen	mg/L	6.95 (0.98 - 15.00)	14.50 (6.90 - 26.00)
Nitrate-nitrogen	mg/L	0.58 (<0.01 - 1.20)	2.00 (0.17 - 5.90)
Total Kjeldahl nitrogen	mg/L	9.10 (1.50 - 26.00)	17.50 (7.30 - 31.00)
Ortho-phosphate	mg/L	0.90 (0.17 - 3.40)	2.40 (1.40 - 3.20)
Total phosphorus	mg/L	1.25 (0.28 - 4.40)	2.75 (1.60 - 3.60)
Total sulphide	mg/L	0.03 (<0.02 - 0.09)	<0.02 (<0.02 - 0.09)
Aluminium	µg/L	216 (140 - 1,438)	55 (<50 - 98)
Cadmium	µg/L	<0.1 (<0.1 - 0.4)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - 2)	<1 (<1 - <1)
Copper	µg/L	6 (3 - 23)	3 (2 - 6)
Lead	µg/L	4 (2 - 44)	<1 (<1 - 2)
Zinc	µg/L	48 (22 - 206)	30 (15 - 82)
Flow	L/s	202 (10 - 303)	40 (11 - 83)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Yuen Long Creek in 2014 (Part 2 of 2)

Parameter	Unit	Yuen Long Creek	
		YL3	YL4
Dissolved oxygen	mg/L	3.6 (1.8 - 7.4)	3.8 (1.3 - 5.6)
pH		7.3 (7.1 - 7.8)	7.2 (6.9 - 8.0)
Suspended solids	mg/L	17 (3 - 47)	34 (5 - 73)
5-day Biochemical Oxygen Demand	mg/L	29 (5 - 140)	86 (6 - 280)
Chemical Oxygen Demand	mg/L	35 (12 - 140)	70 (23 - 200)
Oil & grease	mg/L	0.6 (<0.5 - 2.2)	0.9 (<0.5 - 8.2)
Faecal coliforms	cfu/ 100mL	1,500,000 (240,000 - 6,600,000)	3,000,000 (150,000 - 12,000,000)
E. coli	cfu/ 100mL	490,000 (80,000 - 2,000,000)	1,200,000 (48,000 - 5,700,000)
Ammonia-nitrogen	mg/L	5.50 (1.20 - 16.00)	7.40 (3.70 - 14.00)
Nitrate-nitrogen	mg/L	<0.01 (<0.01 - 1.40)	<0.01 (<0.01 - 0.76)
Total Kjeldahl nitrogen	mg/L	7.65 (2.10 - 23.00)	11.00 (4.80 - 22.00)
Ortho-phosphate	mg/L	0.54 (0.10 - 1.70)	0.48 (0.25 - 0.86)
Total phosphorus	mg/L	0.92 (0.26 - 2.70)	1.10 (0.39 - 2.00)
Total sulphide	mg/L	<0.02 (<0.02 - 0.33)	0.08 (<0.02 - 0.25)
Aluminium	µg/L	172 (72 - 332)	205 (101 - 848)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.3)
Chromium	µg/L	<1 (<1 - 3)	<1 (<1 - 4)
Copper	µg/L	5 (2 - 14)	5 (2 - 8)
Lead	µg/L	3 (<1 - 10)	2 (<1 - 5)
Zinc	µg/L	42 (26 - 92)	47 (24 - 88)
Flow	L/s	490 (160 - 1,538)	125 (81 - 205)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Kam Tin River in 2014

Parameter	Unit	Kam Tin River	
		KT1	KT2
Dissolved oxygen	mg/L	5.2 (3.8 - 8.0)	4.7 (2.6 - 8.0)
pH		7.4 (7.0 - 7.7)	7.7 (7.2 - 9.1)
Suspended solids	mg/L	9 (2 - 210)	26 (16 - 370)
5-day Biochemical Oxygen Demand	mg/L	7 (5 - 20)	16 (6 - 130)
Chemical Oxygen Demand	mg/L	14 (8 - 28)	23 (9 - 220)
Oil & grease	mg/L	<0.5 (<0.5 - 1.1)	<0.5 (<0.5 - 1.8)
Faecal coliforms	cfu/ 100mL	190,000 (90,000 - 940,000)	350,000 (110,000 - 1,100,000)
E. coli	cfu/ 100mL	46,000 (13,000 - 570,000)	200,000 (65,000 - 810,000)
Ammonia-nitrogen	mg/L	5.30 (1.60 - 7.60)	7.55 (1.90 - 22.00)
Nitrate-nitrogen	mg/L	0.89 (<0.01 - 1.20)	0.20 (<0.01 - 1.90)
Total Kjeldahl nitrogen	mg/L	6.65 (2.10 - 11.00)	9.70 (2.80 - 38.00)
Ortho-phosphate	mg/L	0.81 (0.22 - 1.60)	1.30 (0.28 - 4.00)
Total phosphorus	mg/L	1.00 (0.44 - 2.20)	1.55 (0.36 - 6.00)
Total sulphide	mg/L	<0.02 (<0.02 - 0.10)	<0.02 (<0.02 - 0.06)
Aluminium	µg/L	98 (<50 - 497)	404 (180 - 5,048)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	<1 (<1 - 2)	2 (<1 - 6)
Copper	µg/L	8 (3 - 16)	8 (6 - 28)
Lead	µg/L	1 (<1 - 8)	3 (1 - 59)
Zinc	µg/L	38 (18 - 64)	45 (23 - 169)
Flow	L/s	435 (122 - 2,070)	222 (55 - 809)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tin Shui Wai Nullah and Fairview Park Nullah in 2014

Parameter	Unit	Tin Shui Wai Nullah		Fairview Park Nullah
		TSR1	TSR2	FVR1
Dissolved oxygen	mg/L	5.8 (3.1 - 9.3)	9.4 (8.2 - 12.0)	6.5 (4.8 - 10.5)
pH		7.6 (7.2 - 8.0)	8.2 (7.4 - 8.7)	8.0 (7.1 - 8.8)
Suspended solids	mg/L	5 (2 - 23)	5 (2 - 8)	22 (4 - 590)
5-day Biochemical Oxygen Demand	mg/L	6 (4 - 40)	2 (<1 - 7)	8 (3 - 23)
Chemical Oxygen Demand	mg/L	15 (6 - 48)	6 (<2 - 12)	26 (10 - 39)
Oil & grease	mg/L	<0.5 (<0.5 - 2.8)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	650,000 (75,000 - 7,000,000)	47,000 (5,300 - 200,000)	92,000 (8,900 - 450,000)
E. coli	cfu/ 100mL	210,000 (15,000 - 2,500,000)	20,000 (2,800 - 88,000)	28,000 (1,900 - 210,000)
Ammonia-nitrogen	mg/L	2.20 (0.40 - 4.30)	0.34 (0.10 - 1.50)	0.94 (0.45 - 6.90)
Nitrate-nitrogen	mg/L	0.51 (<0.01 - 1.00)	0.77 (0.54 - 0.96)	0.39 (0.11 - 1.10)
Total Kjeldahl nitrogen	mg/L	3.85 (0.83 - 7.20)	0.69 (0.19 - 2.20)	2.35 (1.10 - 9.80)
Ortho-phosphate	mg/L	0.17 (0.06 - 0.38)	0.05 (<0.01 - 0.19)	0.24 (0.10 - 0.53)
Total phosphorus	mg/L	0.34 (0.10 - 0.69)	0.08 (0.03 - 0.30)	0.46 (0.24 - 1.50)
Total sulphide	mg/L	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	121 (67 - 393)	133 (87 - 191)	180 (98 - 3,147)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.9)
Chromium	µg/L	1 (<1 - 2)	<1 (<1 - 1)	1 (<1 - 7)
Copper	µg/L	3 (2 - 10)	1 (<1 - 9)	5 (2 - 73)
Lead	µg/L	1 (<1 - 6)	1 (<1 - 5)	3 (<1 - 86)
Zinc	µg/L	26 (18 - 97)	17 (<10 - 65)	35 (17 - 436)
Flow	L/s	NM	46 (13 - 210)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Ha Pak Nai Stream, Pak Nai Stream and Sheung Pak Nai Stream in 2014

Parameter	Unit	Ha Pak Nai Stream DB1	Pak Nai Stream DB3	Sheung Pak Nai Stream DB5
Dissolved oxygen	mg/L	8.8 (7.7 - 10.0)	8.5 (7.2 - 9.5)	8.5 (7.3 - 9.7)
pH		7.5 (6.8 - 8.2)	7.0 (6.6 - 7.5)	7.1 (5.6 - 7.3)
Suspended solids	mg/L	4 (2 - 54)	5 (3 - 170)	16 (4 - 4,900)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 1)	<1 (<1 - 7)	2 (<1 - 5)
Chemical Oxygen Demand	mg/L	<2 (<2 - 6)	<2 (<2 - 6)	4 (<2 - 6)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	900 (92 - 9,400)	1,900 (200 - 12,000)	20,000 (97 - 180,000)
E. coli	cfu/ 100mL	200 (29 - 2,300)	350 (90 - 6,200)	16,000 (97 - 180,000)
Ammonia-nitrogen	mg/L	0.02 (<0.01 - 0.10)	0.03 (0.02 - 0.09)	0.47 (0.04 - 2.00)
Nitrate-nitrogen	mg/L	0.25 (0.19 - 0.69)	0.21 (0.18 - 0.49)	0.20 (0.16 - 0.48)
Total Kjeldahl nitrogen	mg/L	0.10 (<0.05 - 0.30)	0.12 (<0.05 - 0.27)	0.72 (0.18 - 2.00)
Ortho-phosphate	mg/L	<0.01 (<0.01 - 0.01)	<0.01 (<0.01 - <0.01)	0.02 (<0.01 - 0.13)
Total phosphorus	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.04)	0.05 (<0.02 - 0.16)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	181 (<50 - 385)	54 (<50 - 868)	88 (<50 - 3,980)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.8)
Chromium	µg/L	<1 (<1 - 4)	<1 (<1 - <1)	<1 (<1 - <1)
Copper	µg/L	<1 (<1 - 2)	<1 (<1 - 3)	1 (<1 - 7)
Lead	µg/L	1 (<1 - 6)	<1 (<1 - 30)	3 (<1 - 284)
Zinc	µg/L	11 (<10 - 30)	12 (<10 - 30)	13 (<10 - 53)
Flow	L/s	21 (5 - 216)	26 (8 - 1,170)	40 (20 - 1,449)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Ngau Hom Sha Stream, Tai Shui Hang Stream and Tsang Kok Stream in 2014

Parameter	Unit	Ngau Hom Sha Stream DB6	Tai Shui Hang Stream DB2	Tsang Kok Stream DB8
Dissolved oxygen	mg/L	8.4 (6.8 - 10.7)	8.6 (7.4 - 9.7)	8.7 (7.1 - 10.7)
pH		6.9 (5.9 - 7.2)	7.9 (7.5 - 8.2)	7.6 (7.1 - 9.0)
Suspended solids	mg/L	7 (<1 - 190)	9 (1 - 230)	10 (<1 - 210)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 5)	<1 (<1 - 5)	<1 (<1 - 9)
Chemical Oxygen Demand	mg/L	4 (<2 - 7)	<2 (<2 - 7)	5 (<2 - 11)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	4,100 (190 - 53,000)	2,100 (200 - 76,000)	2,500 (110 - 12,000)
E. coli	cfu/ 100mL	720 (140 - 5,200)	240 (32 - 10,000)	290 (27 - 3,500)
Ammonia-nitrogen	mg/L	0.13 (0.02 - 0.27)	0.05 (0.02 - 0.90)	0.07 (0.02 - 1.50)
Nitrate-nitrogen	mg/L	0.28 (0.12 - 0.41)	0.24 (0.13 - 0.60)	2.50 (0.99 - 8.10)
Total Kjeldahl nitrogen	mg/L	0.30 (0.17 - 0.70)	0.13 (<0.05 - 1.30)	0.32 (<0.05 - 2.20)
Ortho-phosphate	mg/L	0.06 (<0.01 - 0.10)	<0.01 (<0.01 - 0.01)	<0.01 (<0.01 - 0.03)
Total phosphorus	mg/L	0.10 (0.06 - 0.25)	<0.02 (<0.02 - 0.11)	0.03 (<0.02 - 0.08)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	103 (50 - 439)	206 (<50 - 1,920)	137 (65 - 1,114)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.4)	<0.1 (<0.1 - 0.6)
Chromium	µg/L	<1 (<1 - 1)	<1 (<1 - 2)	<1 (<1 - 2)
Copper	µg/L	3 (<1 - 23)	1 (<1 - 9)	2 (<1 - 6)
Lead	µg/L	2 (<1 - 19)	2 (<1 - 71)	2 (<1 - 49)
Zinc	µg/L	31 (13 - 263)	19 (<10 - 80)	24 (<10 - 54)
Flow	L/s	12 (4 - 336)	240 (120 - 2,420)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Mui Wo River in 2014 (Part 1 of 2)

Parameter	Unit	Mui Wo River		
		MW1	MW2	MW3
Dissolved oxygen	mg/L	8.6 (7.2 - 10.5)	8.9 (6.8 - 10.8)	8.9 (7.8 - 9.9)
pH		7.6 (7.3 - 8.0)	7.5 (7.0 - 7.9)	7.1 (6.8 - 7.8)
Suspended solids	mg/L	2 (<1 - 5)	2 (2 - 6)	<1 (<1 - 2)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 1)	<1 (<1 - 4)	<1 (<1 - <1)
Chemical Oxygen Demand	mg/L	3 (<2 - 5)	6 (3 - 9)	<2 (<2 - 4)
Oil & grease	mg/L	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - 0.8)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	4,300 (250 - 22,000)	13,000 (1,200 - 63,000)	1,200 (44 - 8,900)
E. coli	cfu/ 100mL	590 (80 - 5,000)	2,500 (180 - 25,000)	210 (34 - 3,700)
Ammonia-nitrogen	mg/L	0.05 (0.02 - 0.10)	0.23 (0.02 - 1.20)	0.01 (<0.01 - 0.04)
Nitrate-nitrogen	mg/L	0.37 (0.16 - 0.92)	0.18 (0.11 - 0.56)	0.30 (0.13 - 0.73)
Total Kjeldahl nitrogen	mg/L	0.20 (0.14 - 0.31)	0.45 (0.12 - 1.70)	0.11 (<0.05 - 0.19)
Ortho-phosphate	mg/L	0.09 (0.06 - 0.17)	0.05 (0.03 - 0.18)	0.05 (0.03 - 0.10)
Total phosphorus	mg/L	0.12 (0.07 - 0.18)	0.09 (0.04 - 0.29)	0.07 (0.03 - 0.11)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	82 (<50 - 124)	54 (<50 - 78)	62 (<50 - 98)
Cadmium	µg/L	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - 3)	<1 (<1 - 3)	<1 (<1 - <1)
Copper	µg/L	1 (<1 - 8)	1 (<1 - 24)	<1 (<1 - 13)
Lead	µg/L	<1 (<1 - 3)	1 (<1 - 2)	<1 (<1 - 3)
Zinc	µg/L	19 (<10 - 79)	16 (<10 - 55)	16 (<10 - 33)
Flow	L/s	16 (10 - 54)	NM	10 (5 - 69)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Mui Wo River in 2014 (Part 2 of 2)

Parameter	Unit	Mui Wo River	
		MW4	MW5
Dissolved oxygen	mg/L	7.5 (5.2 - 10.0)	8.0 (6.9 - 10.2)
pH		7.1 (6.5 - 7.5)	7.3 (7.0 - 7.7)
Suspended solids	mg/L	5 (1 - 24)	4 (1 - 8)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 2)	1 (<1 - 3)
Chemical Oxygen Demand	mg/L	9 (3 - 12)	6 (4 - 13)
Oil & grease	mg/L	<0.5 (<0.5 - 0.8)	<0.5 (<0.5 - 0.8)
Faecal coliforms	cfu/ 100mL	1,900 (200 - 11,000)	11,000 (2,100 - 52,000)
E. coli	cfu/ 100mL	560 (34 - 2,100)	1,700 (340 - 12,000)
Ammonia-nitrogen	mg/L	0.22 (0.06 - 1.60)	0.38 (0.15 - 1.00)
Nitrate-nitrogen	mg/L	0.23 (0.13 - 0.54)	0.24 (0.09 - 0.45)
Total Kjeldahl nitrogen	mg/L	0.46 (0.19 - 2.00)	0.67 (0.34 - 1.40)
Ortho-phosphate	mg/L	0.04 (0.02 - 0.17)	0.05 (0.02 - 0.14)
Total phosphorus	mg/L	0.10 (0.05 - 0.28)	0.10 (0.06 - 0.23)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	87 (<50 - 184)	60 (<50 - 131)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	2 (<1 - 7)	2 (<1 - 6)
Copper	µg/L	3 (<1 - 9)	2 (<1 - 9)
Lead	µg/L	1 (<1 - 2)	1 (<1 - 2)
Zinc	µg/L	24 (16 - 51)	15 (<10 - 67)
Flow	L/s	45 (10 - 140)	56 (13 - 120)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tung Chung River in 2014

Parameter	Unit	Tung Chung River		
		TC1	TC2	TC3
Dissolved oxygen	mg/L	7.9 (7.4 - 9.8)	8.1 (7.5 - 11.0)	8.3 (7.8 - 10.2)
pH		6.9 (6.7 - 7.4)	7.3 (6.9 - 8.1)	7.8 (6.7 - 8.3)
Suspended solids	mg/L	1 (<1 - 6)	3 (1 - 5)	2 (<1 - 12)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - <1)	<1 (<1 - 2)	5 (<1 - 23)
Chemical Oxygen Demand	mg/L	<2 (<2 - 6)	4 (<2 - 11)	7 (<2 - 20)
Oil & grease	mg/L	<0.5 (<0.5 - 0.8)	<0.5 (<0.5 - 0.8)	<0.5 (<0.5 - 1.0)
Faecal coliforms	cfu/ 100mL	510 (15 - 13,000)	4,400 (430 - 42,000)	61,000 (22,000 - 140,000)
E. coli	cfu/ 100mL	48 (7 - 2,000)	79 (12 - 2,700)	15,000 (2,000 - 71,000)
Ammonia-nitrogen	mg/L	0.01 (<0.01 - 0.13)	0.02 (<0.01 - 0.03)	0.64 (0.07 - 1.60)
Nitrate-nitrogen	mg/L	0.06 (0.01 - 0.29)	0.01 (<0.01 - 0.24)	0.10 (0.05 - 0.24)
Total Kjeldahl nitrogen	mg/L	0.12 (<0.05 - 0.27)	0.14 (0.07 - 0.28)	1.10 (0.21 - 2.60)
Ortho-phosphate	mg/L	<0.01 (<0.01 - 0.04)	<0.01 (<0.01 - 0.02)	0.06 (0.01 - 0.18)
Total phosphorus	mg/L	<0.02 (<0.02 - 0.05)	<0.02 (<0.02 - 0.04)	0.11 (<0.02 - 0.35)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	<50 (<50 - 164)	<50 (<50 - 120)	<50 (<50 - 134)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	<1 (<1 - <1)	<1 (<1 - 1)	<1 (<1 - 1)
Copper	µg/L	<1 (<1 - 2)	<1 (<1 - 3)	1 (<1 - 5)
Lead	µg/L	<1 (<1 - 1)	<1 (<1 - 1)	<1 (<1 - 3)
Zinc	µg/L	13 (<10 - 24)	14 (<10 - 33)	15 (<10 - 38)
Flow	L/s	43 (12 - 160)	53 (38 - 244)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tuen Mun River in 2014 (Part 1 of 2)

Parameter	Unit	Tuen Mun River		
		TN1	TN2	TN3
Dissolved oxygen	mg/L	4.8 (3.1 - 9.9)	8.5 (6.1 - 11.7)	6.1 (4.2 - 8.7)
pH		7.7 (7.5 - 9.2)	7.6 (7.2 - 8.3)	7.7 (7.3 - 8.2)
Suspended solids	mg/L	10 (5 - 120)	4 (<1 - 64)	3 (1 - 29)
5-day Biochemical Oxygen Demand	mg/L	24 (10 - 38)	3 (<1 - 9)	2 (<1 - 6)
Chemical Oxygen Demand	mg/L	35 (18 - 45)	6 (4 - 31)	7 (4 - 14)
Oil & grease	mg/L	0.8 (<0.5 - 1.3)	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	540,000 (94,000 - 2,600,000)	65,000 (29,000 - 350,000)	48,000 (650 - 450,000)
E. coli	cfu/ 100mL	120,000 (62,000 - 320,000)	29,000 (11,000 - 61,000)	4,500 (160 - 31,000)
Ammonia-nitrogen	mg/L	6.55 (0.35 - 9.30)	1.45 (0.29 - 7.00)	0.36 (0.25 - 0.69)
Nitrate-nitrogen	mg/L	0.49 (<0.01 - 1.60)	2.00 (1.30 - 3.00)	0.42 (0.24 - 0.94)
Total Kjeldahl nitrogen	mg/L	8.85 (2.70 - 11.00)	1.85 (0.51 - 8.90)	0.68 (0.52 - 1.10)
Ortho-phosphate	mg/L	0.58 (0.16 - 0.91)	0.22 (0.04 - 1.00)	0.04 (<0.01 - 0.06)
Total phosphorus	mg/L	0.93 (0.30 - 1.40)	0.25 (0.05 - 1.20)	0.07 (0.05 - 0.10)
Total sulphide	mg/L	0.04 (<0.02 - 0.14)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	96 (68 - 1,142)	174 (92 - 524)	144 (<50 - 316)
Cadmium	µg/L	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	<1 (<1 - 4)	1 (<1 - 4)	3 (1 - 5)
Copper	µg/L	5 (3 - 69)	2 (<1 - 10)	7 (4 - 10)
Lead	µg/L	1 (<1 - 14)	2 (<1 - 12)	<1 (<1 - 3)
Zinc	µg/L	36 (20 - 133)	21 (<10 - 93)	23 (12 - 62)
Flow	L/s	137 (23 - 270)	14 (3 - 102)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Tuen Mun River in 2014 (Part 2 of 2)

Parameter	Unit	Tuen Mun River		
		TN4	TN5	TN6
Dissolved oxygen	mg/L	6.5 (5.1 - 9.3)	5.8 (4.8 - 7.7)	6.1 (4.1 - 7.3)
pH		7.7 (7.5 - 8.3)	7.6 (7.4 - 8.1)	7.6 (7.0 - 8.1)
Suspended solids	mg/L	3 (2 - 12)	3 (2 - 15)	3 (2 - 9)
5-day Biochemical Oxygen Demand	mg/L	2 (<1 - 7)	2 (<1 - 6)	2 (<1 - 4)
Chemical Oxygen Demand	mg/L	9 (5 - 17)	10 (6 - 16)	6 (2 - 12)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)
Faecal coliforms	cfu/ 100mL	59,000 (7,700 - 300,000)	51,000 (8,900 - 260,000)	21,000 (190 - 500,000)
E. coli	cfu/ 100mL	7,600 (1,600 - 50,000)	6,500 (900 - 49,000)	2,400 (10 - 51,000)
Ammonia-nitrogen	mg/L	0.33 (0.15 - 1.20)	0.35 (0.27 - 0.78)	0.41 (0.26 - 0.76)
Nitrate-nitrogen	mg/L	0.45 (0.23 - 0.96)	0.47 (0.21 - 0.95)	0.35 (0.14 - 1.20)
Total Kjeldahl nitrogen	mg/L	0.65 (0.28 - 1.60)	0.66 (0.47 - 1.20)	0.62 (0.43 - 1.20)
Ortho-phosphate	mg/L	0.03 (0.02 - 0.06)	0.03 (0.01 - 0.06)	0.04 (0.01 - 0.06)
Total phosphorus	mg/L	0.06 (0.04 - 0.10)	0.06 (0.05 - 0.10)	0.06 (0.05 - 0.14)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	162 (<50 - 279)	146 (<50 - 302)	80 (<50 - 175)
Cadmium	µg/L	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.1)	<0.1 (<0.1 - 0.2)
Chromium	µg/L	3 (2 - 5)	3 (2 - 5)	3 (1 - 6)
Copper	µg/L	5 (2 - 10)	5 (2 - 11)	6 (3 - 18)
Lead	µg/L	<1 (<1 - 4)	1 (<1 - 3)	<1 (<1 - 3)
Zinc	µg/L	19 (14 - 45)	18 (11 - 42)	22 (<10 - 60)
Flow	L/s	NM	NM	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Pai Min Kok Stream and Kau Wa Keng Stream in 2014

Parameter	Unit	Pai Min Kok Stream		Kau Wa Keng Stream
		AN1	AN2	KW3
Dissolved oxygen	mg/L	8.6 (7.6 - 11.2)	8.8 (7.8 - 11.0)	9.2 (7.3 - 11.4)
pH		7.8 (7.4 - 8.4)	8.0 (7.3 - 8.4)	7.6 (6.9 - 8.2)
Suspended solids	mg/L	3 (<1 - 230)	2 (<1 - 200)	6 (<1 - 130)
5-day Biochemical Oxygen Demand	mg/L	1 (<1 - 8)	<1 (<1 - 3)	4 (<1 - 31)
Chemical Oxygen Demand	mg/L	5 (3 - 16)	5 (4 - 16)	11 (5 - 25)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - 0.9)
Faecal coliforms	cfu/ 100mL	27,000 (6,000 - 130,000)	35,000 (9,200 - 210,000)	120,000 (12,000 - 2,100,000)
E. coli	cfu/ 100mL	15,000 (3,000 - 90,000)	24,000 (2,600 - 170,000)	46,000 (7,800 - 290,000)
Ammonia-nitrogen	mg/L	0.05 (0.01 - 3.40)	0.05 (0.01 - 0.11)	0.39 (0.07 - 2.40)
Nitrate-nitrogen	mg/L	0.89 (0.63 - 3.60)	0.85 (0.43 - 1.60)	2.10 (0.85 - 2.90)
Total Kjeldahl nitrogen	mg/L	0.66 (0.21 - 5.00)	0.27 (0.12 - 0.35)	1.00 (0.32 - 3.20)
Ortho-phosphate	mg/L	0.06 (0.03 - 0.25)	0.05 (0.02 - 0.08)	0.09 (<0.01 - 0.24)
Total phosphorus	mg/L	0.08 (0.05 - 0.33)	0.07 (0.05 - 0.10)	0.17 (0.04 - 0.49)
Total sulphide	mg/L	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.02)
Aluminium	µg/L	194 (<50 - 937)	136 (69 - 1,066)	177 (55 - 1,329)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	1.2 (0.3 - 4.9)
Chromium	µg/L	1 (<1 - 3)	<1 (<1 - 5)	2 (<1 - 3)
Copper	µg/L	4 (3 - 20)	2 (<1 - 4)	7 (2 - 33)
Lead	µg/L	1 (<1 - 10)	1 (<1 - 15)	3 (<1 - 41)
Zinc	µg/L	38 (14 - 152)	20 (<10 - 51)	91 (59 - 655)
Flow	L/s	NM	5 (2 - 18)	26 (15 - 134)

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Sam Dip Tam Stream in 2014

Parameter	Unit	Sam Dip Tam Stream		
		TW1	TW2	TW3
Dissolved oxygen	mg/L	8.4 (7.5 - 10.3)	8.8 (7.7 - 10.6)	8.3 (6.9 - 10.6)
pH		7.6 (7.3 - 8.1)	7.7 (7.4 - 8.3)	7.7 (7.3 - 8.1)
Suspended solids	mg/L	1 (<1 - 41)	2 (<1 - 55)	2 (<1 - 64)
5-day Biochemical Oxygen Demand	mg/L	<1 (<1 - 2)	1 (<1 - 6)	1 (<1 - 5)
Chemical Oxygen Demand	mg/L	3 (<2 - 9)	5 (3 - 17)	4 (<2 - 9)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.5)
Faecal coliforms	cfu/ 100mL	16,000 (3,100 - 210,000)	61,000 (11,000 - 270,000)	19,000 (5,300 - 75,000)
E. coli	cfu/ 100mL	2,000 (440 - 12,000)	16,000 (6,900 - 77,000)	4,100 (1,100 - 26,000)
Ammonia-nitrogen	mg/L	0.02 (<0.01 - 0.03)	0.13 (0.02 - 0.33)	0.04 (0.02 - 0.08)
Nitrate-nitrogen	mg/L	0.80 (0.22 - 1.40)	1.05 (0.21 - 1.50)	1.45 (0.24 - 2.10)
Total Kjeldahl nitrogen	mg/L	0.19 (0.12 - 0.25)	0.43 (0.20 - 0.67)	0.27 (0.14 - 0.85)
Ortho-phosphate	mg/L	0.05 (<0.01 - 0.07)	0.09 (<0.01 - 0.13)	0.09 (<0.01 - 0.13)
Total phosphorus	mg/L	0.06 (<0.02 - 0.08)	0.11 (<0.02 - 0.17)	0.12 (<0.02 - 0.22)
Total sulphide	mg/L	<0.02 (<0.02 - 0.03)	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - 0.02)
Aluminium	µg/L	52 (<50 - 318)	52 (<50 - 323)	71 (<50 - 426)
Cadmium	µg/L	<0.1 (<0.1 - 0.2)	<0.1 (<0.1 - 0.3)	<0.1 (<0.1 - 0.3)
Chromium	µg/L	<1 (<1 - 1)	<1 (<1 - <1)	<1 (<1 - <1)
Copper	µg/L	1 (<1 - 5)	2 (<1 - 5)	3 (<1 - 8)
Lead	µg/L	1 (<1 - 10)	<1 (<1 - 14)	2 (<1 - 13)
Zinc	µg/L	20 (14 - 43)	23 (13 - 61)	39 (15 - 83)
Flow	L/s	NM	38 (23 - 300)	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Kai Tak River in 2014 (Part 1 of 2)

Parameter	Unit	Kai Tak River		
		KN1	KN2	KN3
Dissolved oxygen	mg/L	6.8 (5.7 - 8.1)	7.3 (6.7 - 8.7)	7.2 (6.7 - 8.7)
pH		7.2 (6.9 - 7.3)	7.3 (7.1 - 7.6)	7.3 (7.1 - 7.5)
Suspended solids	mg/L	7 (3 - 43)	12 (4 - 130)	14 (4 - 260)
5-day Biochemical Oxygen Demand	mg/L	4 (1 - 7)	3 (2 - 9)	5 (2 - 11)
Chemical Oxygen Demand	mg/L	24 (8 - 31)	23 (6 - 30)	25 (7 - 29)
Oil & grease	mg/L	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - <0.5)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	450,000 (15,000 - 2,800,000)	88,000 (5,700 - 480,000)	100,000 (7,400 - 540,000)
E. coli	cfu/ 100mL	190,000 (12,000 - 950,000)	42,000 (3,200 - 300,000)	49,000 (5,100 - 310,000)
Ammonia-nitrogen	mg/L	1.05 (0.25 - 3.40)	0.48 (0.15 - 3.70)	0.48 (0.14 - 3.90)
Nitrate-nitrogen	mg/L	5.30 (2.50 - 7.90)	5.20 (1.90 - 6.50)	5.20 (2.30 - 6.50)
Total Kjeldahl nitrogen	mg/L	1.80 (0.86 - 4.40)	1.25 (0.74 - 4.60)	1.20 (0.78 - 4.70)
Ortho-phosphate	mg/L	1.80 (0.84 - 2.10)	1.85 (0.46 - 2.30)	1.85 (0.65 - 2.30)
Total phosphorus	mg/L	1.95 (0.88 - 2.20)	1.90 (0.56 - 2.70)	2.05 (0.73 - 2.70)
Total sulphide	mg/L	<0.02 (<0.02 - 0.06)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - 0.05)
Aluminium	µg/L	112 (<50 - 336)	119 (53 - 586)	150 (62 - 967)
Cadmium	µg/L	<0.1 (<0.1 - 0.3)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - 0.1)
Chromium	µg/L	2 (<1 - 5)	2 (<1 - 5)	2 (<1 - 5)
Copper	µg/L	5 (2 - 22)	7 (4 - 25)	7 (4 - 25)
Lead	µg/L	1 (<1 - 4)	1 (<1 - 11)	2 (<1 - 17)
Zinc	µg/L	29 (18 - 41)	34 (23 - 68)	31 (22 - 55)
Flow	L/s	NM	NM	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

Summary of water quality monitoring data for Kai Tak River in 2014 (Part 2 of 2)

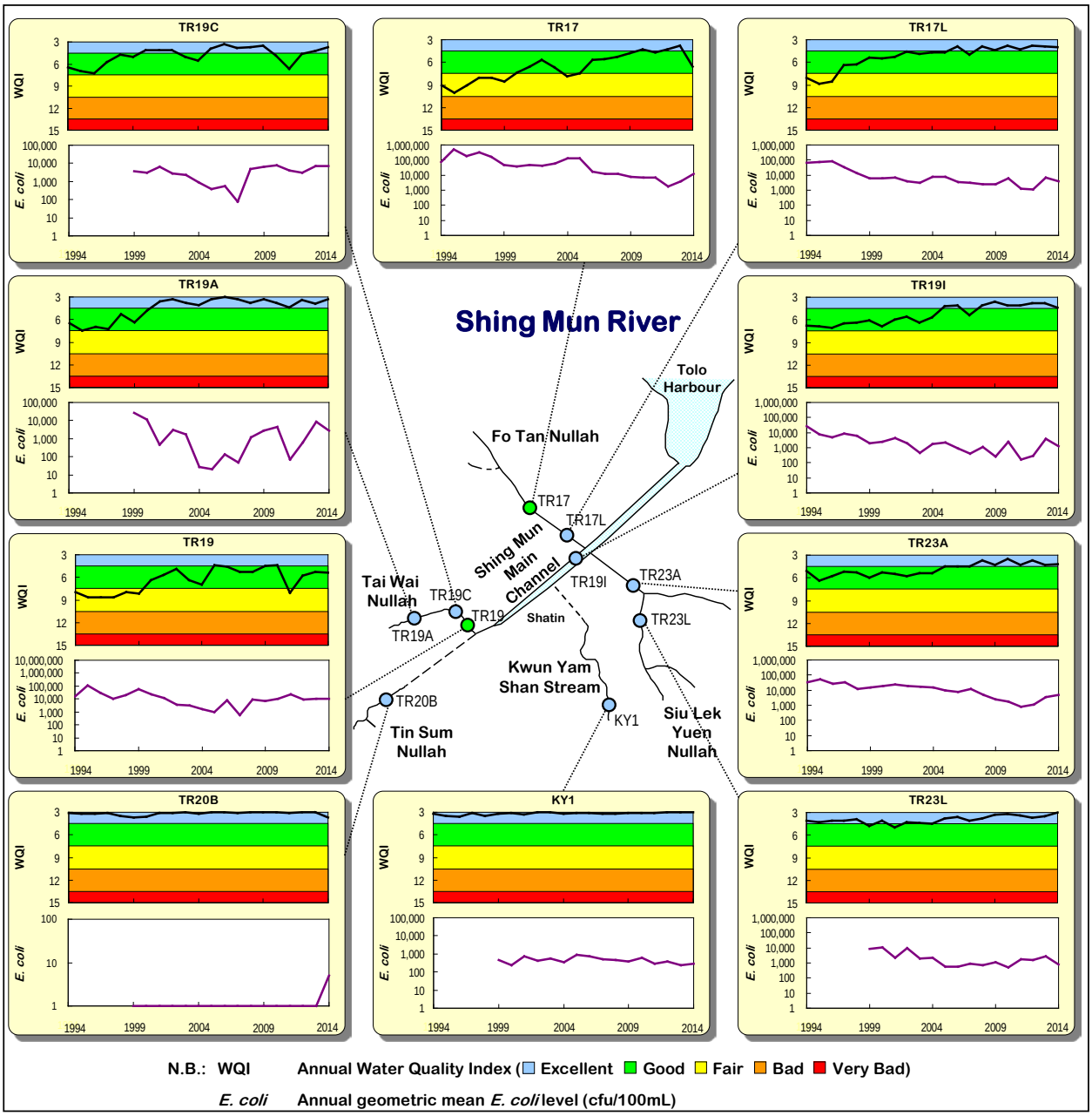
Parameter	Unit	Kai Tak River		
		KN4	KN5	KN7
Dissolved oxygen	mg/L	7.6 (6.9 - 8.7)	7.6 (7.0 - 8.7)	7.4 (7.1 - 8.5)
pH		7.3 (7.1 - 7.8)	7.3 (7.1 - 7.7)	7.2 (7.0 - 7.4)
Suspended solids	mg/L	9 (5 - 75)	6 (2 - 140)	4 (1 - 32)
5-day Biochemical Oxygen Demand	mg/L	5 (2 - 13)	5 (2 - 9)	2 (1 - 8)
Chemical Oxygen Demand	mg/L	26 (4 - 29)	25 (5 - 32)	24 (10 - 34)
Oil & grease	mg/L	<0.5 (<0.5 - 0.5)	<0.5 (<0.5 - 0.6)	<0.5 (<0.5 - 0.6)
Faecal coliforms	cfu/ 100mL	77,000 (4,400 - 860,000)	51,000 (2,900 - 330,000)	6,800 (800 - 81,000)
E. coli	cfu/ 100mL	36,000 (3,200 - 250,000)	22,000 (1,600 - 210,000)	3,200 (570 - 15,000)
Ammonia-nitrogen	mg/L	0.30 (0.10 - 3.10)	0.40 (0.05 - 3.20)	0.33 (0.09 - 3.10)
Nitrate-nitrogen	mg/L	5.20 (0.62 - 7.90)	5.20 (1.30 - 7.90)	5.30 (3.50 - 6.50)
Total Kjeldahl nitrogen	mg/L	1.15 (0.46 - 3.90)	1.30 (0.57 - 4.10)	1.20 (0.71 - 4.00)
Ortho-phosphate	mg/L	1.80 (0.14 - 2.20)	1.85 (0.33 - 2.20)	1.90 (0.92 - 2.20)
Total phosphorus	mg/L	1.90 (0.20 - 2.70)	2.00 (0.38 - 2.50)	2.00 (0.95 - 2.40)
Total sulphide	mg/L	<0.02 (<0.02 - 0.02)	<0.02 (<0.02 - <0.02)	<0.02 (<0.02 - <0.02)
Aluminium	µg/L	89 (<50 - 563)	56 (<50 - 396)	<50 (<50 - 430)
Cadmium	µg/L	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)	<0.1 (<0.1 - <0.1)
Chromium	µg/L	2 (<1 - 5)	2 (<1 - 6)	2 (<1 - 5)
Copper	µg/L	7 (5 - 24)	7 (4 - 22)	6 (4 - 26)
Lead	µg/L	1 (<1 - 8)	1 (<1 - 8)	<1 (<1 - 3)
Zinc	µg/L	29 (22 - 120)	30 (23 - 60)	29 (21 - 52)
Flow	L/s	NM	NM	NM

Notes:
1. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means.
2. Figures in brackets are annual ranges.
3. NM indicates no measurement taken.
4. cfu - colony forming unit.
5. Values at or below laboratory reporting limits are presented as laboratory reporting limits (see Appendix B).
6. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

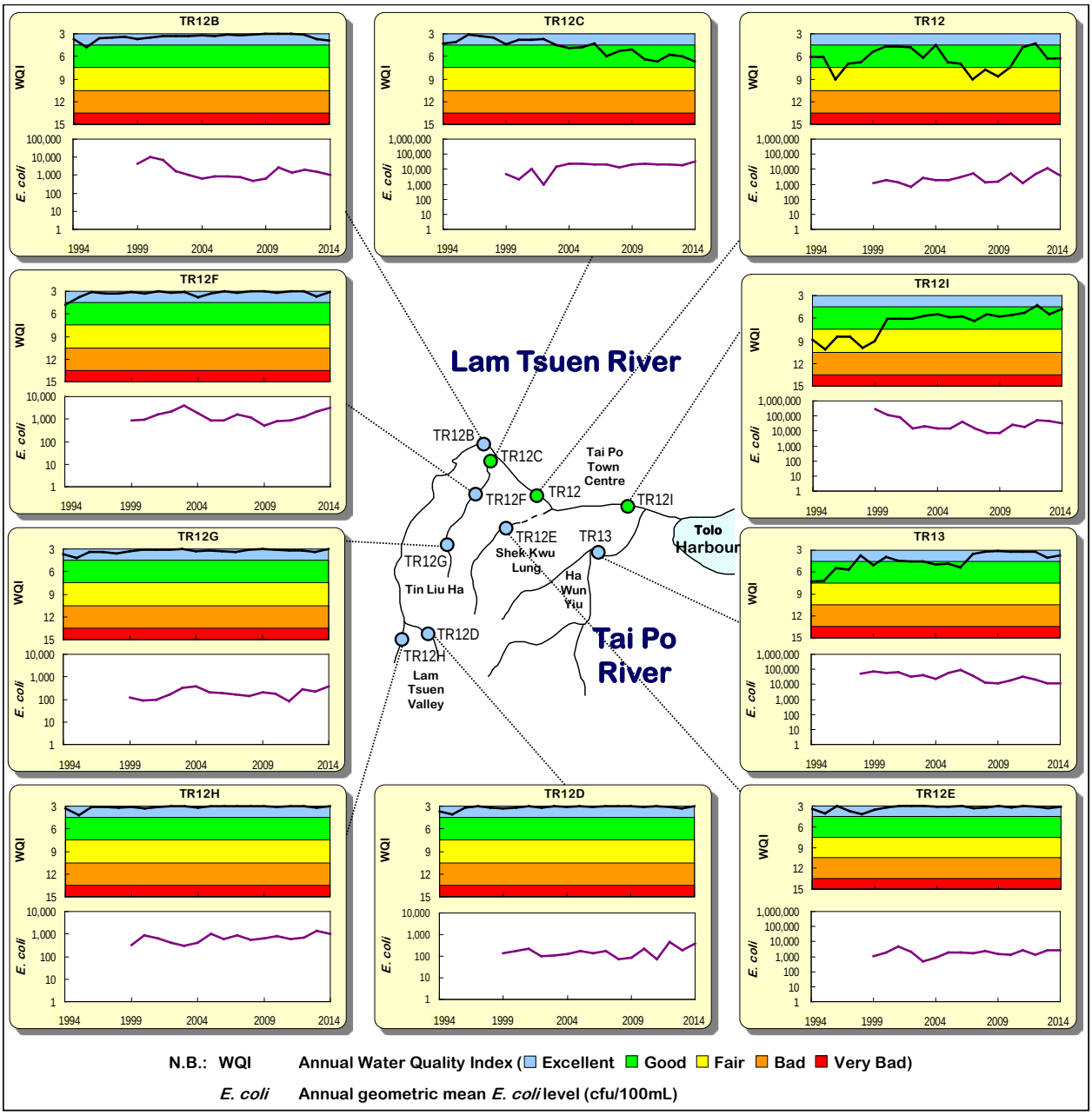
Compliance with the river Water Quality Objectives in 2014

Watercourse	pH	5-Day Biochemical Oxygen Demand	Chemical Oxygen Demand	Dissolved Oxygen	Suspended Solids	Overall Compliance
Eastern New Territories						
Shing Mun River	81%	87%	96%	100%	100%	**93%**
Lam Tsuen River	99%	81%	99%	100%	100%	**96%**
Tai Po River	100%	100%	100%	100%	100%	**100%**
Tai Po Kau Stream	100%	100%	100%	100%	100%	**100%**
Shan Liu Stream	100%	100%	100%	100%	100%	**100%**
Tung Tze Stream	100%	100%	100%	100%	100%	**100%**
Ho Chung River	96%	92%	100%	100%	100%	**98%**
Sha Kok Mei Stream	100%	96%	100%	100%	100%	**99%**
Tai Chung Hau Stream	92%	96%	100%	100%	100%	**98%**
Tseng Lan Shue Stream	100%	50%	94%	100%	100%	**89%**
Northwestern New Territories						
River Indus	100%	67%	83%	94%	67%	**82%**
River Beas	100%	33%	78%	97%	100%	**82%**
River Ganges	100%	53%	72%	100%	100%	**85%**
Yuen Long Creek	100%	4%	23%	58%	75%	**52%**
Kam Tin River	96%	0%	46%	75%	50%	**53%**
Tin Shui Wai Nullah	100%	58%	96%	88%	100%	**88%**
Fairview Park Nullah	100%	33%	58%	100%	0%	**58%**
Ha Pak Nai Stream	100%	100%	100%	100%	100%	**100%**
Tai Shui Hang Stream	100%	92%	100%	100%	100%	**98%**
Pak Nai Stream	100%	92%	100%	100%	100%	**98%**
Sheung Pak Nai Stream	92%	100%	100%	100%	100%	**98%**
Ngau Hom Sha Stream	92%	100%	100%	100%	100%	**98%**
Tsang Kok Stream	100%	92%	100%	100%	100%	**98%**
Lantau Island						
Mui Wo River	100%	100%	100%	100%	100%	**100%**
Tung Chung River	100%	83%	100%	100%	100%	**97%**
Southwestern New Territories & Kowloon						
Tuen Mun River	99%	72%	85%	96%	100%	**90%**
Pai Min Kok Stream	100%	96%	100%	100%	100%	**99%**
Kau Wa Keng Stream	100%	58%	100%	100%	100%	**92%**
Sam Dip Tam Stream	100%	94%	100%	100%	100%	**99%**
Kai Tak River	Not applicable					
Average Compliance (All monitoring stations)	**97%**	**74%**	**89%**	**96%**	**95%**	**90%**

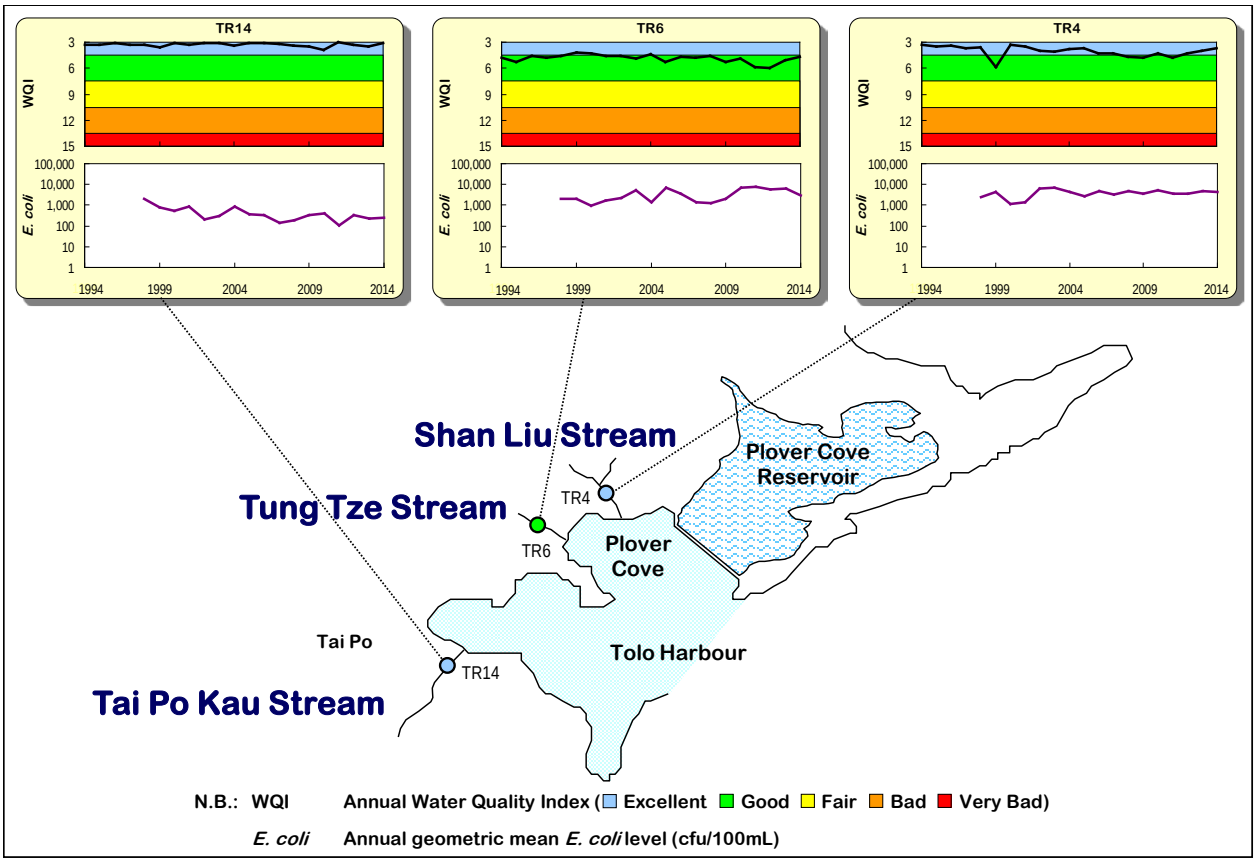
Water Quality Index gradings and *E. coli* levels in Shing Mun River



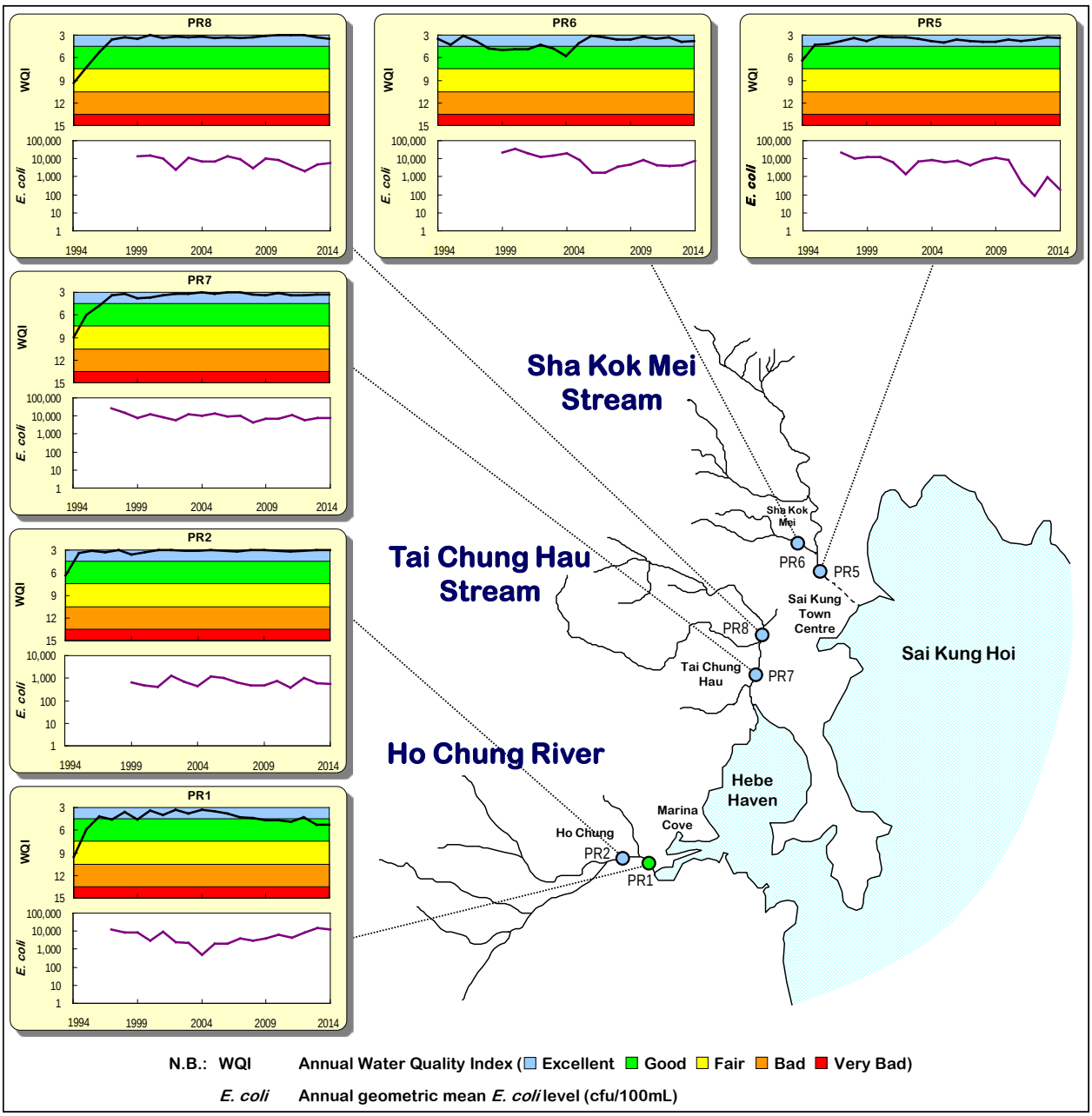
Water Quality Index gradings and *E. coli* levels in Lam Tsuen River and Tai Po River



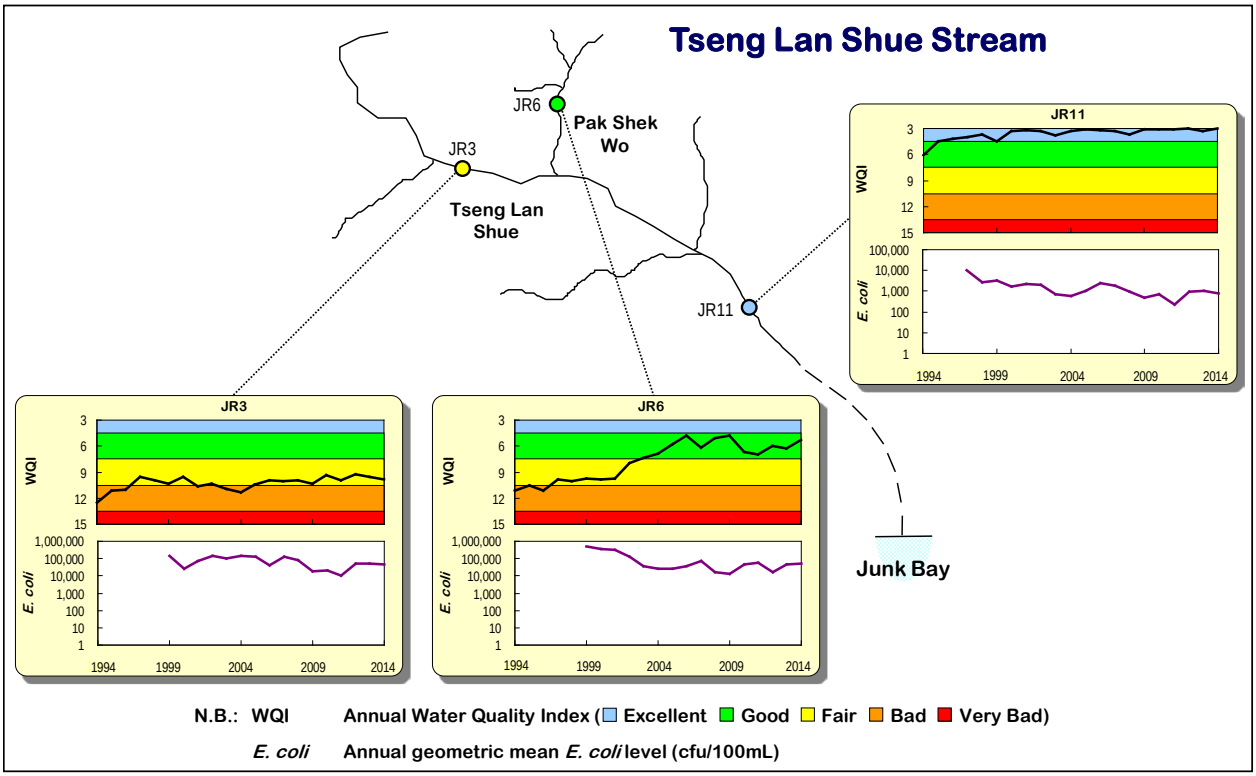
Water Quality Index gradings and *E. coli* levels in Tai Po Kau Stream, Shan Liu Stream and Tung Tze Stream



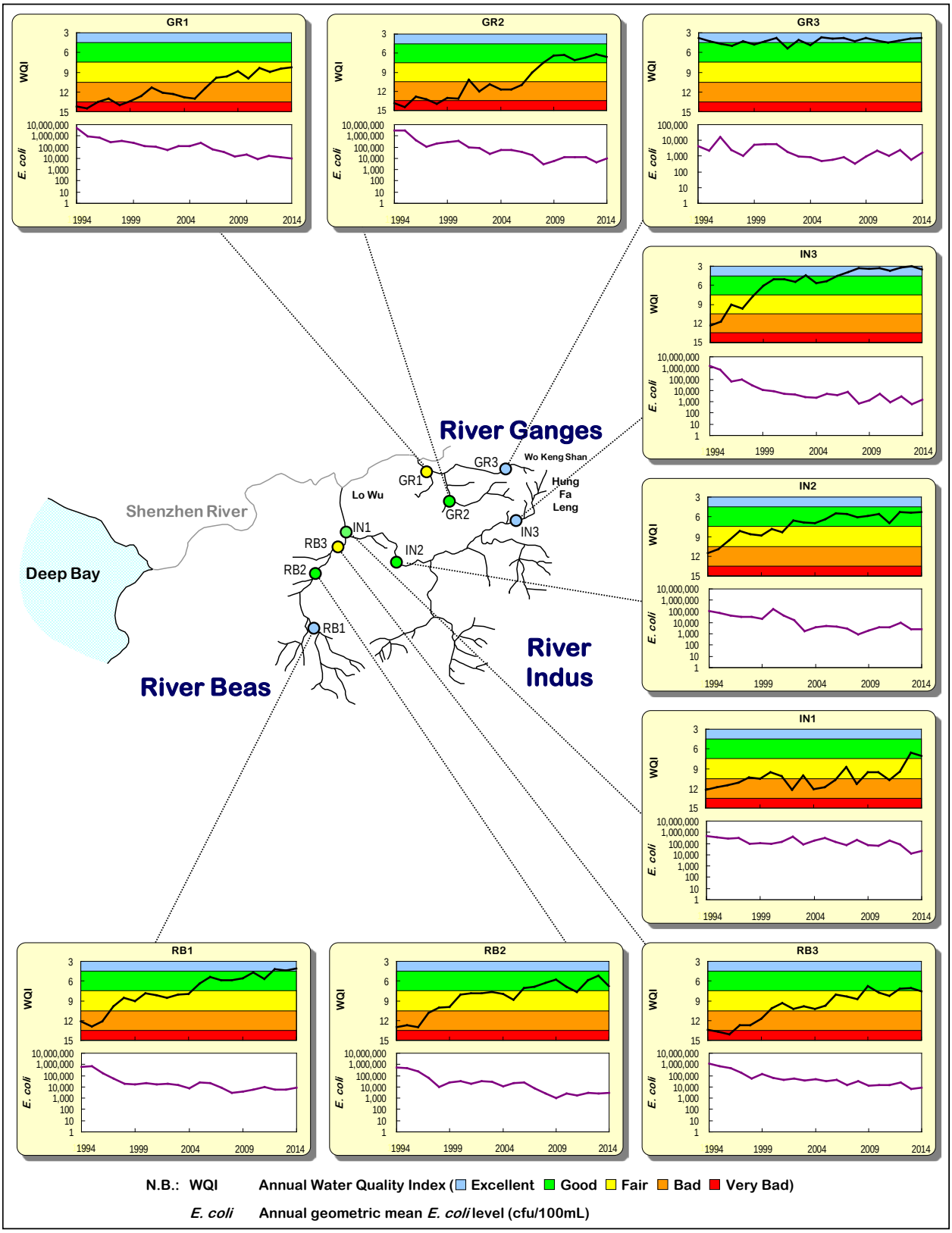
Water Quality Index gradings and *E. coli* levels in Ho Chung River, Tai Chung Hau Stream and Sha Kok Mei Stream



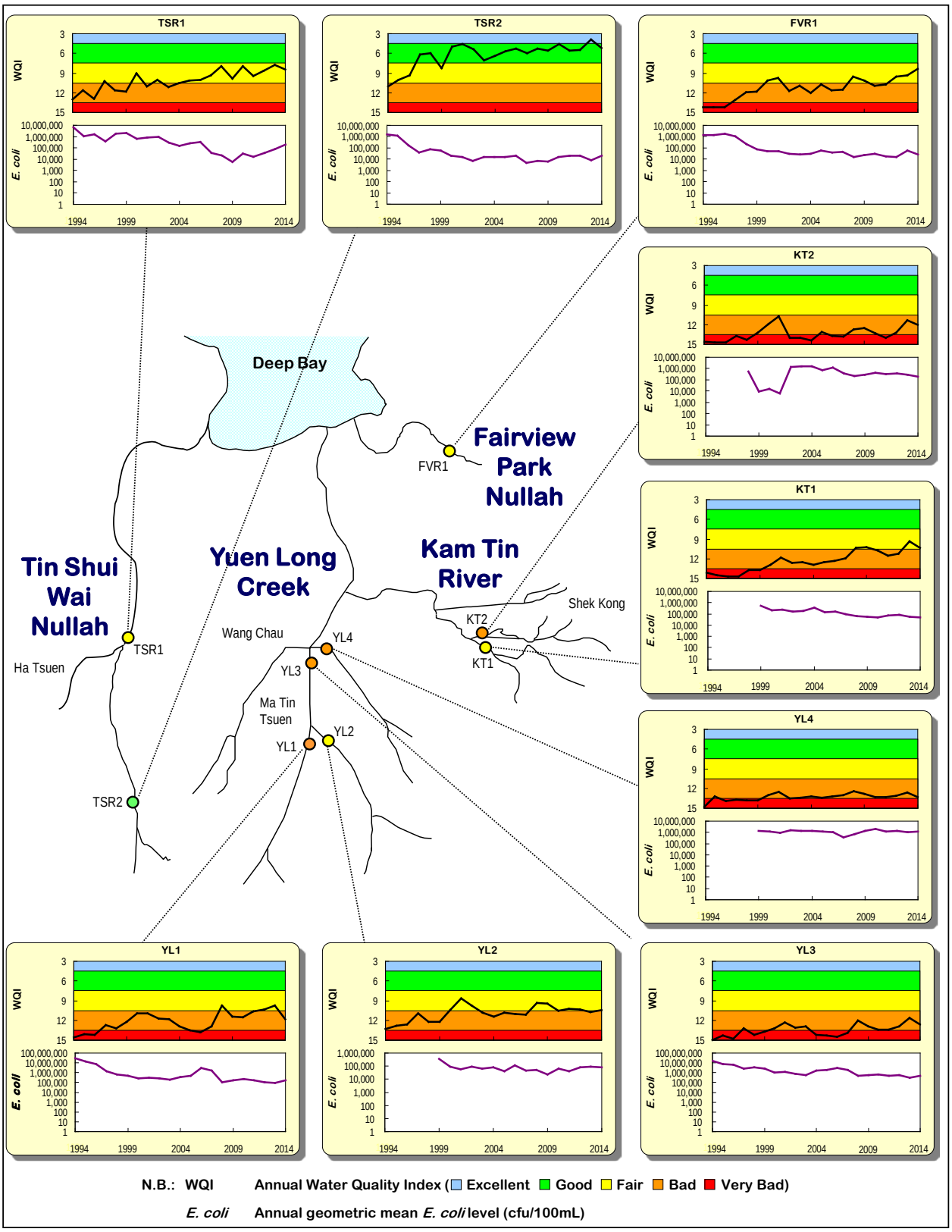
Water Quality Index gradings and *E. coli* levels in Tseng Lan Shue Stream



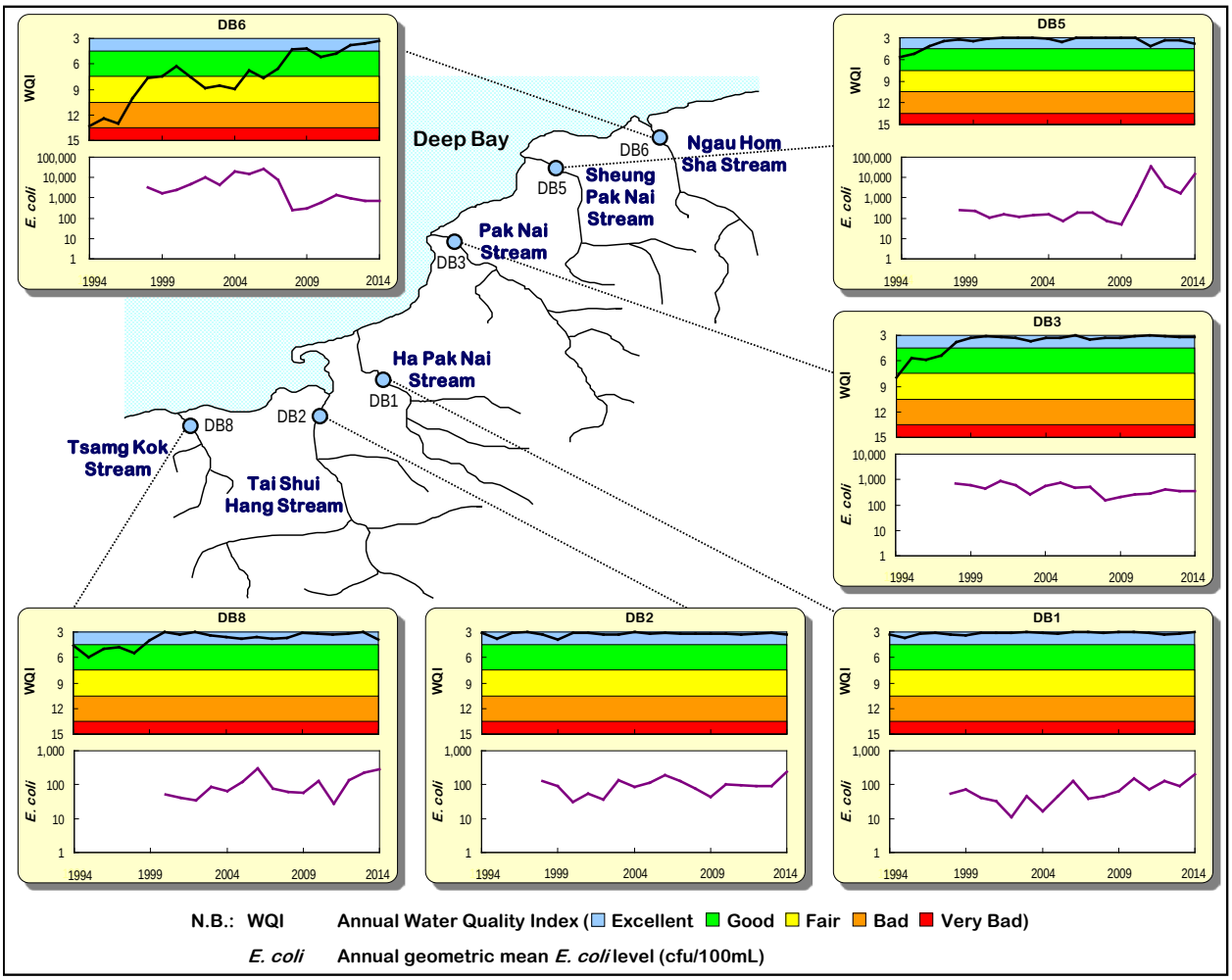
Water Quality Index gradings and *E. coli* levels in River Indus, River Beas and River Ganges



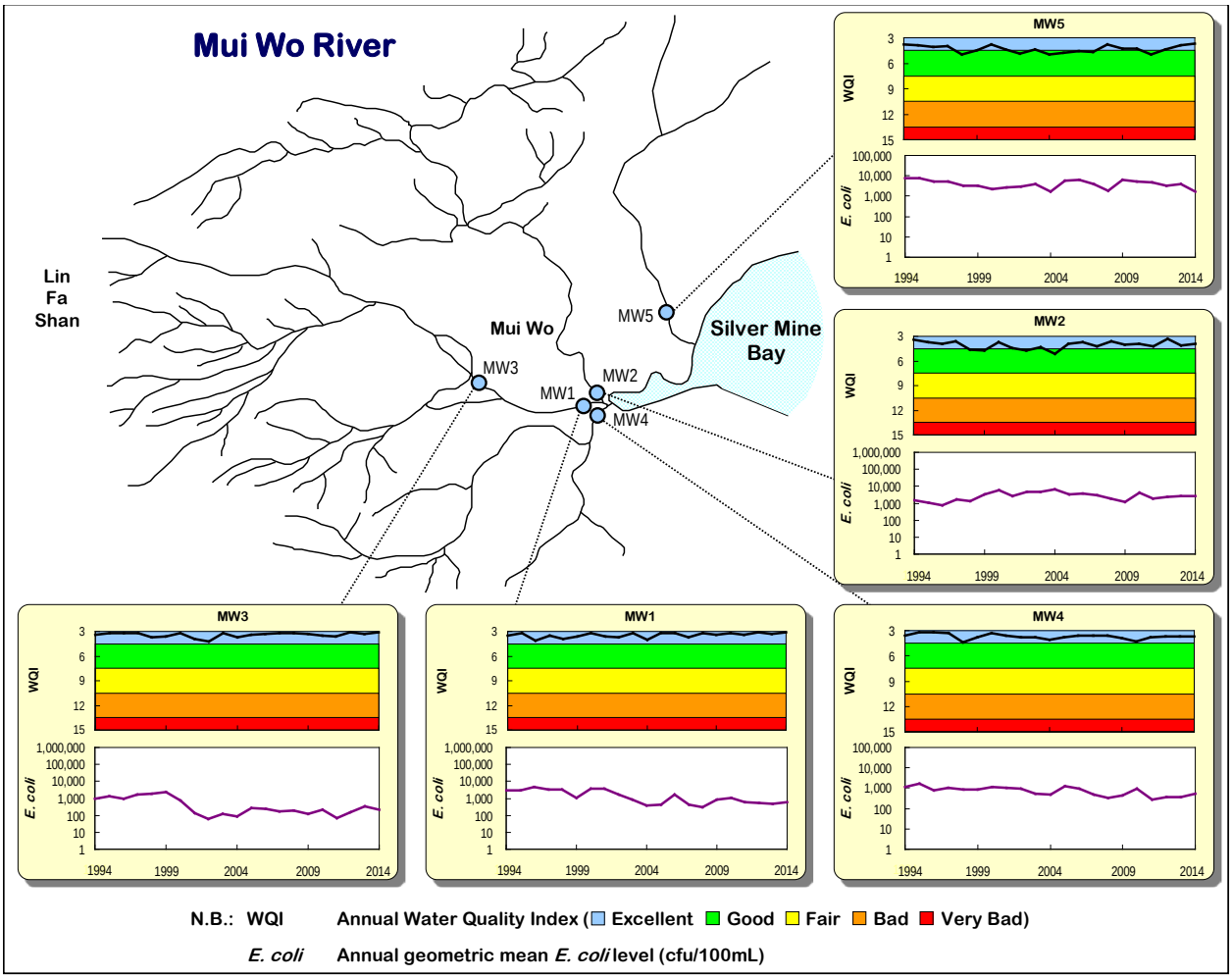
Water Quality Index gradings and *E. coli* levels in Yuen Long Creek, Kam Tin River, Tin Shui Wai Nullah and Fairview Park Nullah



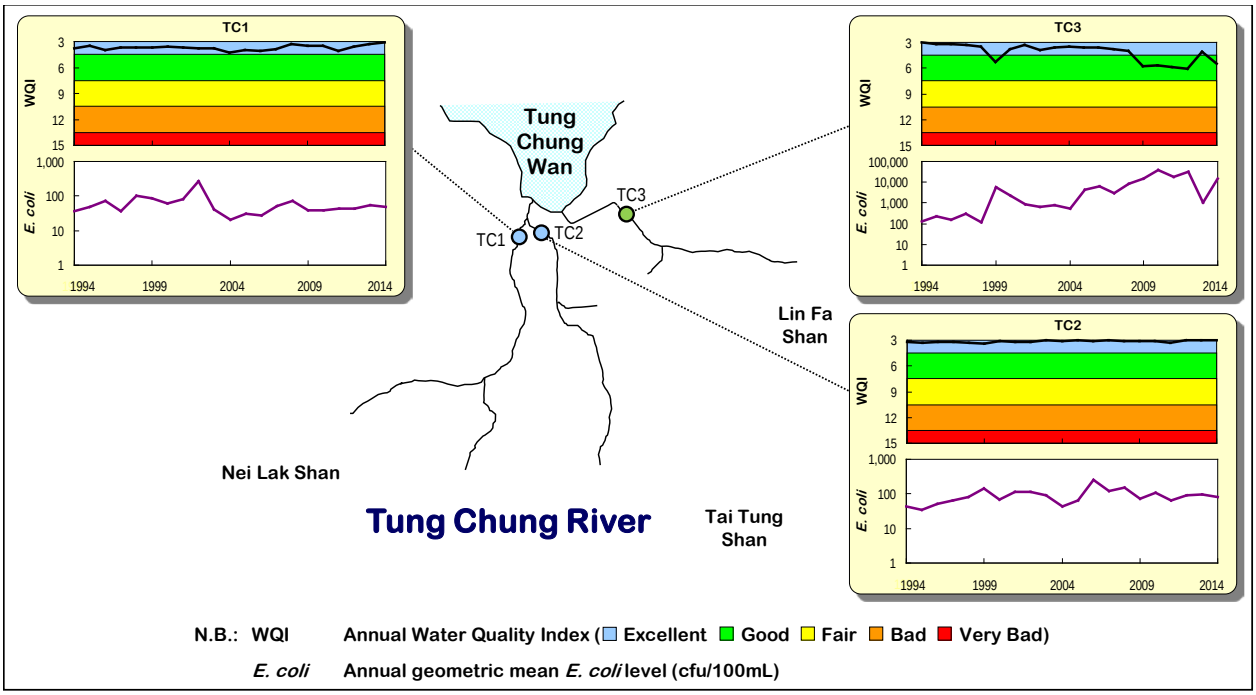
Water Quality Index gradings and *E. coli* levels in Ha Pak Nai Stream, Tai Shui Hang Stream, Pak Nai Stream, Sheung Pak Nai Stream, Ngau Hom Sha Stream and Tsang Kok Stream



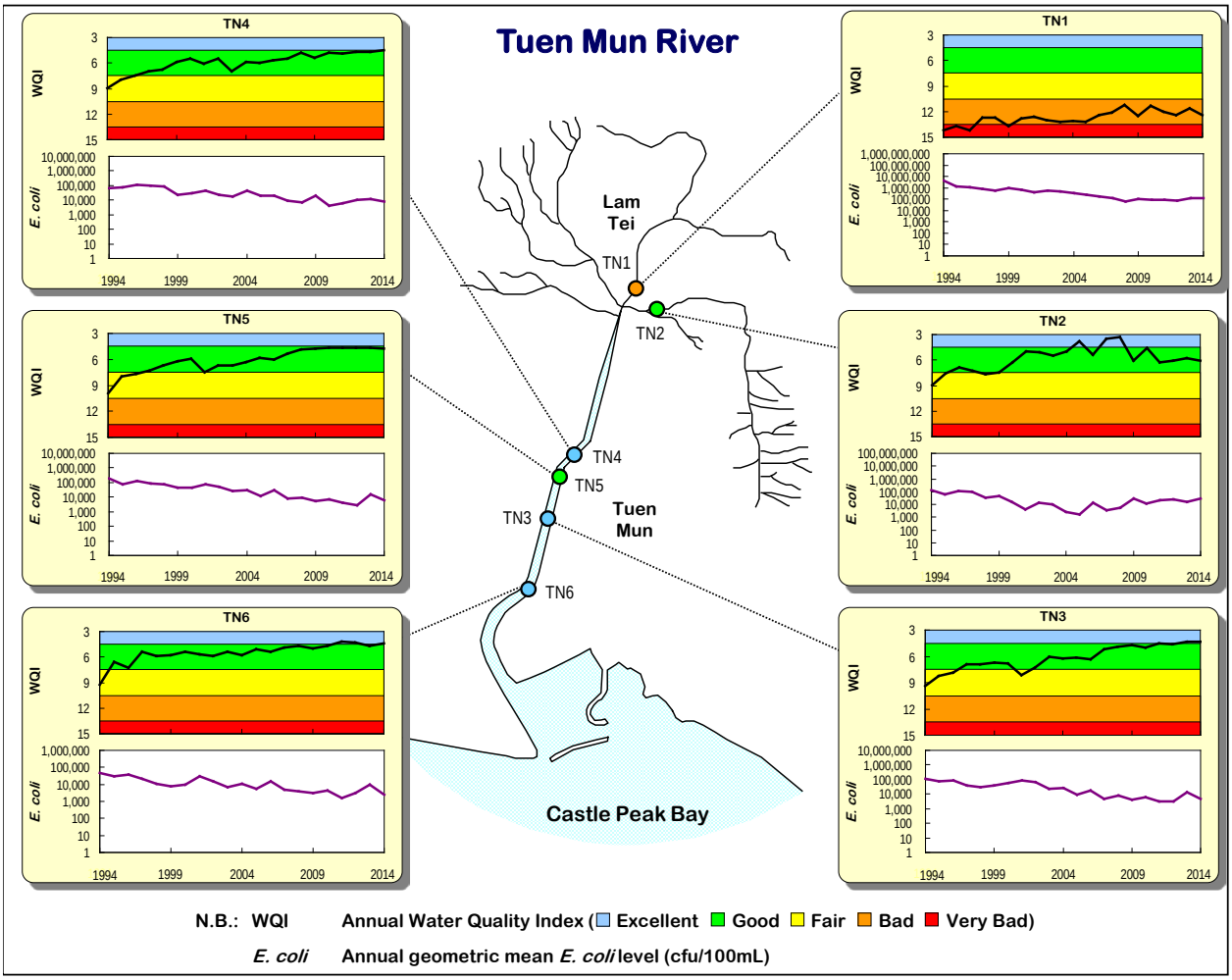
Water Quality Index gradings and *E. coli* levels in Mui Wo River



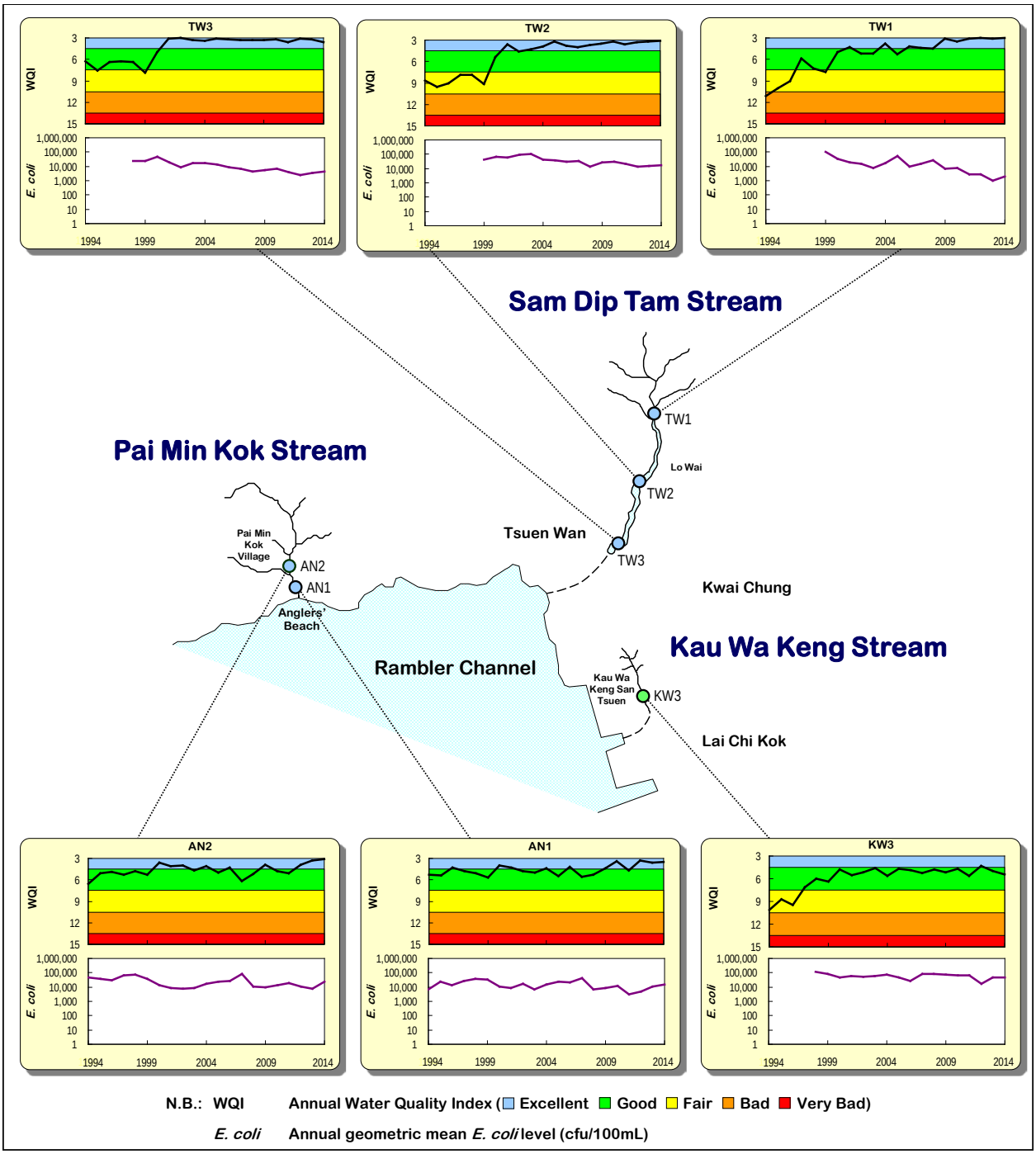
Water Quality Index gradings and *E. coli* levels in Tung Chung River



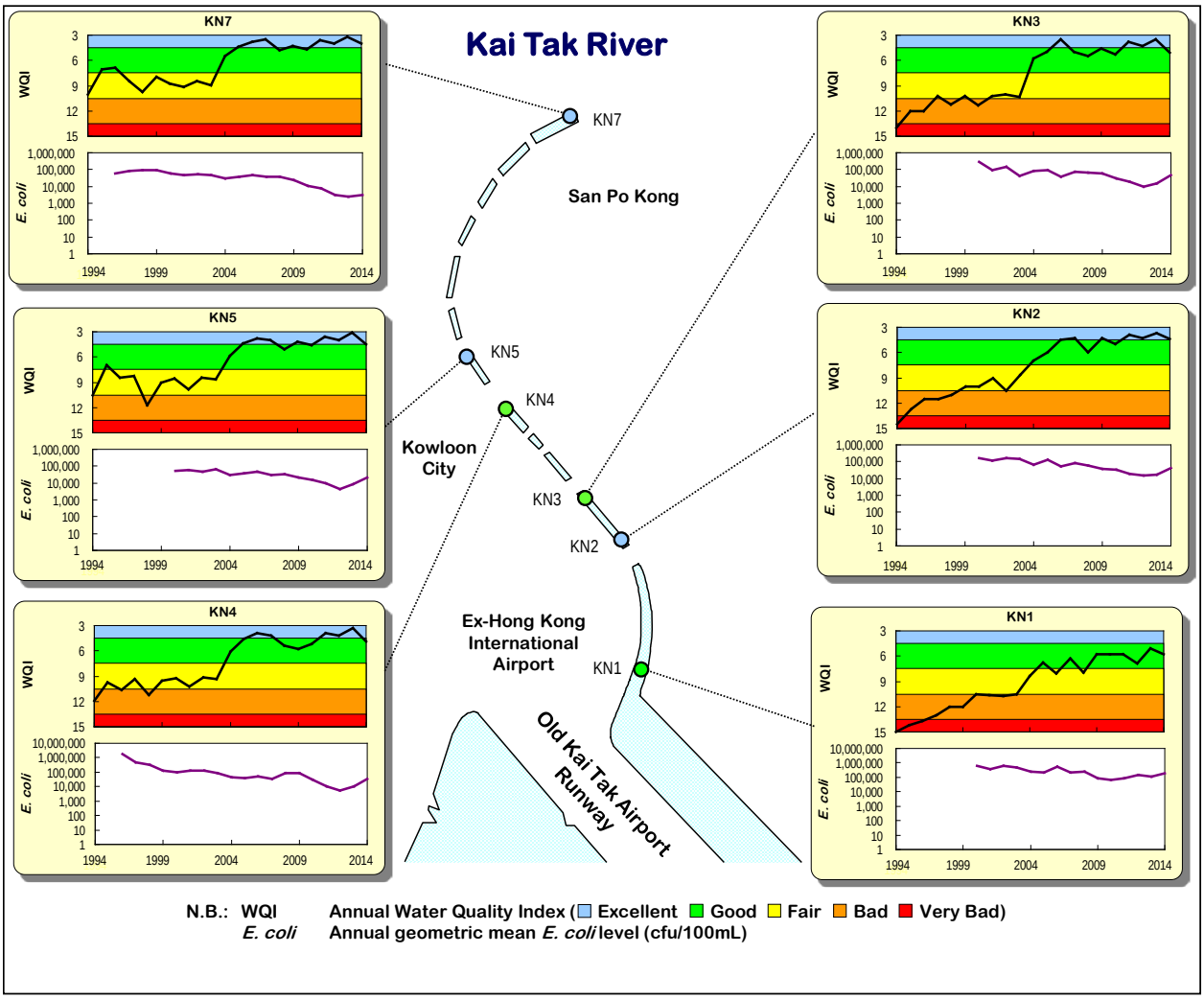
Water Quality Index gradings and *E. coli* levels in Tuen Mun River



Water Quality Index gradings and *E. coli* levels in Pai Min Kok Stream, Sam Dip Tam Stream and Kau Wa Keng Stream



Water Quality Index gradings and *E. coli* levels in Kai Tak River



Water quality trends for Shing Mun River (Main Channel, Siu Lek Yuen Nullah and Fo Tan Nullah) as analysed by the Seasonal Kendall Test

Watercourse		**Shing Mun River**				
		Main Channel	Siu Lek Yuen Nullah		Fo Tan Nullah	
Monitoring station		TR19I	TR23L	TR23A	TR17	TR17L
Monitoring period*		86-14	86-14	86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**				
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗
pH		–	↗	–	↗	↗
Suspended solids	mg/L	↘	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	↘	–
E. coli	cfu/100mL	↘	↘	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘	↘	↘
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘
Nitrate-nitrogen	mg/L	↗	↘	↘	–	↗
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘
Sulphide	mg/L	–	–	–	–	–
Aluminium	µg/L	↘	↘	↘	↘	–
Cadmium	µg/L	–	–	–	–	–
Chromium	µg/L	–	–	–	↘	–
Copper	µg/L	–	–	–	↘	↘
Lead	µg/L	–	–	–	↘	–
Zinc	µg/L	–	–	–	↘	–
Flow	L/s	×	–	×	↗	×

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Shing Mun River (Kwun Yam Shan Stream, Tai Wai Nullah and Tin Sum Nullah) as analysed by the Seasonal Kendall Test

Watercourse		**Shing Mun River**				
		Kwun Yam Shan Stream	Tai Wai Nullah			Tin Sum Nullah
Monitoring station		KY1	TR19A	TR19C	TR19	TR20B
Monitoring period*		88-14	86-14	86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**				
Dissolved oxygen	**mg/L**	–	–	↗	↗	–
pH		↗	–	–	↗	↗
Suspended solids	**mg/L**	–	–	↘	↘	↘
BOD_5	**mg/L**	↘	↘	↘	↘	↘
COD	**mg/L**	↘	↘	↘	↘	↘
Oil & grease	**mg/L**	–	–	–	–	–
E. coli	**cfu/100mL**	–	–	–	↘	–
Faecal coliforms	**cfu/100mL**	–	–	–	↘	–
Ammonia-nitrogen	**mg/L**	↘	↘	↘	↘	↘
Nitrate-nitrogen	**mg/L**	↘	↘	↘	↘	↗
Total Kjeldahl nitrogen	**mg/L**	↘	↘	↘	↘	↘
Ortho-phosphate	**mg/L**	↘	↘	↘	↘	–
Total phosphorus	**mg/L**	↘	↘	↘	↘	↘
Sulphide	**mg/L**	–	–	–	–	–
Aluminium	**µg/L**	–	–	↘	↘	↘
Cadmium	**µg/L**	–	↗	–	–	–
Chromium	**µg/L**	–	–	–	–	↘
Copper	**µg/L**	–	↘	↘	↘	↘
Lead	**µg/L**	–	–	↘	↘	–
Zinc	**µg/L**	–	–	–	↘	–
Flow	**L/s**	↗	–	↘	↘	–

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Lam Tsuen River and Tai Po River, as analysed by the Seasonal Kendall Test

Watercourse		**Lam Tsuen River**									**Tai Po River**
Monitoring station		TR12H	TR12D	TR12G	TR12F	TR12C	TR12B	TR12E	TR12	TR12I	TR13
Monitoring period*		88-14	86-14	86-14	86-14	86-14	86-14	86-14	86-14	89-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**									
Dissolved oxygen	mg/L	↗	↗	↗	↗	–	↗	↗	↘	↗	↗
pH		↗	↗	↗	↗	↗	–	↗	–	–	–
Suspended solids	mg/L	↘	↘	↘	↘	↘	–	–	–	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	–	↘	↘	–	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–	–	–	–	–
E. coli	cfu/100mL	–	–	↗	–	↗	–	–	–	–	↘
Faecal coliforms	cfu/100mL	↗	–	–	–	↗	–	–	–	↘	↘
Ammonia-nitrogen	mg/L	–	↘	–	↘	↗	↘	–	↗	↘	↘
Nitrate-nitrogen	mg/L	↘	–	↘	–	↘	↘	–	–	↗	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	–	↘	↘	–	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↗	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	–	–	–	–	–	–	–	–	–	–
Aluminium	µg/L	–	–	–	–	↘	–	↗	–	–	–
Cadmium	µg/L	–	–	–	–	–	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–	–	–	–	–	–
Copper	µg/L	–	–	–	–	↘	–	–	–	–	–
Lead	µg/L	–	–	–	–	–	–	–	–	–	–
Zinc	µg/L	–	–	–	–	–	–	–	–	–	–
Flow	L/s	–	↘	–	–	–	–	↗	–	×	–

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Tai Po Kau Stream, Shan Liu Stream and Tung Tze Stream, as analysed by the Seasonal Kendall Test

Watercourse		**Tai Po Kau Stream**	**Shan Liu Stream**	**Tung Tze Stream**
Monitoring station		TR14	TR4	TR6
Monitoring period*		86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**		
Dissolved oxygen	mg/L	↗	–	–
pH		↗	↗	–
Suspended solids	mg/L	↘	–	↘
BOD_5	mg/L	↘	↗	↘
COD	mg/L	↘	–	↘
Oil & grease	mg/L	–	–	–
E. coli	cfu/100mL	↘	–	↗
Faecal coliforms	cfu/100mL	↘	–	–
Ammonia-nitrogen	mg/L	↘	↗	↗
Nitrate-nitrogen	mg/L	↘	↗	↗
Total Kjeldahl nitrogen	mg/L	↘	↗	–
Ortho-phosphate	mg/L	↘	↗	–
Total phosphorus	mg/L	↘	–	↘
Sulphide	mg/L	–	–	–
Aluminium	µg/L	–	–	–
Cadmium	µg/L	–	–	–
Chromium	µg/L	–	–	–
Copper	µg/L	–	–	–
Lead	µg/L	–	–	–
Zinc	µg/L	–	–	–
Flow	L/s	–	↗	×

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Ho Chung River, Sha Kok Mei Stream and Tai Chung Hau Stream, as analysed by the Seasonal Kendall Test

Watercourse		**Ho Chung River**		**Sha Kok Mei Stream**		**Tai Chung Hau Stream**	
Monitoring station		PR1	PR2	PR5	PR6	PR7	PR8
Monitoring period*		86-14	86-14	89-14	89-14	89-14	89-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**					
Dissolved oxygen	mg/L	↗	↗	–	–	↗	↗
pH		–	↗	↗	↗	↗	↗
Suspended solids	mg/L	↘	–	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–
E. coli	cfu/100mL	–	–	↘	↘	↘	↘
Faecal coliforms	cfu/100mL	–	–	↘	↘	↘	–
Ammonia-nitrogen	mg/L	–	↘	↘	–	↘	↘
Nitrate-nitrogen	mg/L	↗	–	↗	–	–	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	–	–	–	–	–	–
Aluminium	µg/L	–	–	–	–	↘	↘
Cadmium	µg/L	–	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–	–
Copper	µg/L	–	–	–	–	–	↘
Lead	µg/L	–	–	–	–	–	–
Zinc	µg/L	↘	–	–	–	–	–
Flow	L/s	×	↗	↗	×	–	×

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Tseng Lan Shue Stream, as analysed by the Seasonal Kendall Test

Watercourse		**Tseng Lan Shue Stream**		
Monitoring station		JR3	JR6	JR11
Monitoring period*		86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**		
Dissolved oxygen	mg/L	↗	↗	↗
pH		↗	↗	↗
Suspended solids	mg/L	↘	↘	↘
BOD_5	mg/L	↘	↘	↘
COD	mg/L	↘	↘	↘
Oil & grease	mg/L	–	↘	–
E. coli	cfu/100mL	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘
Ammonia-nitrogen	mg/L	↘	↘	↘
Nitrate-nitrogen	mg/L	↗	↗	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘
Sulphide	mg/L	–	–	–
Aluminium	µg/L	–	–	–
Cadmium	µg/L	–	–	–
Chromium	µg/L	–	–	–
Copper	µg/L	↘	↘	↘
Lead	µg/L	–	↘	–
Zinc	µg/L	↘	↘	–
Flow	L/s	×	×	–

Notes:
1. – indicates no significant trend was detected at $p < 0.05$.
2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for River Indus, River Beas and River Ganges, as analysed by the Seasonal Kendall Test

Watercourse		**River Indus**			**River Beas**			**River Ganges**		
Monitoring station		IN1	IN2	IN3	RB1	RB2	RB3	GR1	GR2	GR3
Monitoring period*		87-14	87-14	87-14	86-14	86-14	86-14	87-14	87-14	90-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**								
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗	↗	↗	↗	–
pH		↗	↗	↗	↗	↗	↗	↗	↗	–
Suspended solids	mg/L	–	↘	↘	↘	↘	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–	↘	↘	–
E. coli	cfu/100mL	↘	↘	↘	↘	↘	↘	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘	↘	↘	↘	↘	↘	–
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	–
Nitrate-nitrogen	mg/L	↗	↗	↗	↗	↗	↗	↗	↗	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	↘	–	–	↘	↘	↘	↘	↘	–
Aluminium	µg/L	–	–	–	↘	↘	↘	–	↘	–
Cadmium	µg/L	–	–	–	–	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–	–	–	–	–
Copper	µg/L	↘	↘	↘	↘	↘	↘	↘	↘	–
Lead	µg/L	↘	↘	–	↘	↘	↘	↘	↘	–
Zinc	µg/L	↘	↘	↘	↘	↘	↘	↘	↘	–
Flow	L/s	×	×	–	↘	↘	×	↘	–	↗

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Yuen Long Creek, Kam Tin River, Tin Shui Wai Nullah and Fairview Park Nullah as analysed by the Seasonal Kendall Test

Watercourse		**Yuen Long Creek**				**Kam Tin River**		**Tin Shui Wai Nullah**		**Fairview Park Nullah**
Monitoring station		YL1	YL2	YL3	YL4	KT1	KT2	TSR1	TSR2	FVR1
Monitoring period*		86-14	86-14	86-14	86-14	86-14	86-14	93-14	93-14	93-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**								
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗	↗	↗	–	↗
pH		↗	↗	↗	↗	↗	↗	–	–	↗
Suspended solids	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	–
BOD_5	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	↘	↘	–	–	↘	–	–	–	–
E. coli	cfu/100mL	↘	–	↘	–	↘	–	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘	–	↘	–	↘	↘	↘
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Nitrate-nitrogen	mg/L	↗	↗	–	↘	↗	–	–	–	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	↘	↘	↘	↘	↘	↘	–	–	–
Aluminium	µg/L	–	↘	–	–	–	–	–	↘	↗
Cadmium	µg/L	↘	–	–	–	–	–	–	–	–
Chromium	µg/L	–	–	↘	↘	↘	–	–	–	–
Copper	µg/L	↘	↘	↘	↘	–	↘	↘	↘	↘
Lead	µg/L	–	↘	↘	↘	↘	–	–	↘	–
Zinc	µg/L	↘	↘	↘	↘	–	–	↘	↘	–
Flow	L/s	–	↘	–	↘	↘	–	×	–	×

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Ha Pak Nai Stream, Pak Nai Stream, Sheung Pak Nai Stream, Ngau Hom Sha Stream, Tai Shui Hang Stream and Tsang Kok Stream as analysed by the Seasonal Kendall Test

Watercourse		**Ha Pak Nai Stream**	**Pak Nai Stream**	**Sheung Pak Nai Stream**	**Ngau Hom Sha Stream**	**Tai Shui Hang Stream**	**Tsang Kok Stream**
Monitoring station		DB1	DB3	DB5	DB6	DB2	DB8
Monitoring period*		89-14	89-14	89-14	89-14	89-14	90-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**					
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗	↗
pH		↗	↗	↗	↗	↗	↘
Suspended solids	mg/L	↘	↘	↘	↘	–	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–
E. coli	cfu/100mL	↗	↘	–	–	–	–
Faecal coliforms	cfu/100mL	–	–	↗	–	↗	–
Ammonia-nitrogen	mg/L	–	↘	↘	↘	–	↘
Nitrate-nitrogen	mg/L	↗	↘	–	↗	↗	↗
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	–	↘	↘	↘	↘	↘
Sulphide	mg/L	–	–	–	–	–	–
Aluminium	µg/L	–	–	–	↘	↗	–
Cadmium	µg/L	–	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–	–
Copper	µg/L	–	–	–	↘	–	–
Lead	µg/L	–	↘	–	↘	–	–
Zinc	µg/L	–	–	–	↘	–	–
Flow	L/s	–	–	↗	↗	↗	×

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Mui Wo River as analysed by the Seasonal Kendall Test

Watercourse		**Mui Wo River**				
Monitoring station		MW1	MW2	MW3	MW4	MW5
Monitoring period*		86-14	86-14	86-14	88-14	88-14
Parameter	**Unit**	**Results of the Seasonal Kendal Test**				
Dissolved oxygen	mg/L	–	↗	↗	–	–
pH		↗	↗	↗	–	–
Suspended solids	mg/L	↘	↘	↘	–	–
BOD_5	mg/L	↘	↘	↘	↘	–
COD	mg/L	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–
E. coli	cfu/100mL	↘	–	↘	↘	–
Faecal coliforms	cfu/100mL	–	↗	–	–	↗
Ammonia-nitrogen	mg/L	–	↗	↘	↗	↗
Nitrate-nitrogen	mg/L	–	–	–	↗	↗
Total Kjeldahl nitrogen	mg/L	↘	–	↘	–	↗
Ortho-phosphate	mg/L	↘	↘	↘	–	–
Total phosphorus	mg/L	↘	↘	↘	↘	–
Sulphide	mg/L	–	–	–	–	–
Aluminium	µg/L	↗	–	↗	–	–
Cadmium	µg/L	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–
Copper	µg/L	–	–	–	–	–
Lead	µg/L	–	–	–	–	–
Zinc	µg/L	–	–	–	–	–
Flow	L/s	↘	×	–	–	–

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Tung Chung River as analysed by the Seasonal Kendall Test

Watercourse		**Tung Chung River**		
Monitoring station		TC1	TC2	TC3
Monitoring period*		93-14	93-14	93-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**		
Dissolved oxygen	mg/L	–	–	–
pH		–	–	–
Suspended solids	mg/L	–	–	–
BOD_5	mg/L	↘	–	↗
COD	mg/L	↘	↘	–
Oil & grease	mg/L	–	–	–
E. coli	cfu/100mL	–	–	↗
Faecal coliforms	cfu/100mL	↗	↗	↗
Ammonia-nitrogen	mg/L	–	–	↗
Nitrate-nitrogen	mg/L	–	–	↗
Total Kjeldahl nitrogen	mg/L	↘	↘	↗
Ortho-phosphate	mg/L	↘	↘	↗
Total phosphorus	mg/L	–	–	↗
Sulphide	mg/L	–	–	–
Aluminium	µg/L	–	–	–
Cadmium	µg/L	–	–	–
Chromium	µg/L	–	–	–
Copper	µg/L	–	–	–
Lead	µg/L	–	–	–
Zinc	µg/L	–	–	–
Flow	L/s	–	↗	×

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Tuen Mun River as analysed by the Seasonal Kendall Test

Watercourse		**Tuen Mun River**					
Monitoring station		TN1	TN2	TN3	TN4	TN5	TN6
Monitoring period*		86-14	86-14	86-14	86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**					
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗	↗
pH		–	↗	–	–	↗	↘
Suspended solids	mg/L	↘	↘	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	↘	↘	–	–	–	–
E. coli	cfu/100mL	↘	↘	↘	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘	↘	↘	↘
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Nitrate-nitrogen	mg/L	↗	↗	↗	↗	↗	↗
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	↘	–	–	–	–	–
Aluminium	µg/L	↘	↘	–	–	–	–
Cadmium	µg/L	↘	–	–	–	–	–
Chromium	µg/L	↘	–	↘	↘	↘	↘
Copper	µg/L	↘	↘	↘	↘	↘	↘
Lead	µg/L	↘	↘	↘	↘	–	–
Zinc	µg/L	↘	↘	–	–	–	–
Flow	L/s	–	↘	×	×	×	×

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Pai Min Kok Stream, Sam Dip Tam Stream and Kau Wa Keng Stream as analysed by the Seasonal Kendall Test

Watercourse		**Pai Min Kok Stream**		**Sam Dip Tam Stream**			**Kau Wa Keng Stream**
Monitoring station		AN1	AN2	TW1	TW2	TW3	KW3
Monitoring period*		88-14	88-14	86-14	86-14	86-14	88-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**					
Dissolved oxygen	mg/L	↗	↗	↗	↗	↗	↗
pH		↗	↗	↗	↗	↗	↗
Suspended solids	mg/L	–	↘	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–
E. coli	cfu/100mL	–	↘	↘	↘	↘	–
Faecal coliforms	cfu/100mL	–	–	↘	↘	↘	–
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Nitrate-nitrogen	mg/L	↘	↘	↗	–	↘	–
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↘	↘	↘	↘	↘	↘
Total phosphorus	mg/L	↘	↘	↘	↘	↘	↘
Sulphide	mg/L	–	–	–	–	–	–
Aluminium	µg/L	–	–	–	–	–	–
Cadmium	µg/L	–	–	–	–	–	–
Chromium	µg/L	–	–	–	–	–	–
Copper	µg/L	–	–	↘	–	–	↗
Lead	µg/L	↘	–	↘	↘	–	↘
Zinc	µg/L	↘	↘	–	–	–	↘
Flow	L/s	×	↗	×	↗	×	–

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
4. × indicates no measurement was taken.
5. * indicates the monitoring period for most of the parameters, a few commenced in different years during the period.

Water quality trends for Kai Tak River as analysed by the Seasonal Kendall Test

Watercourse		**Kai Tak River**					
Monitoring station		KN1	KN2	KN3	KN4	KN5	KN7
Monitoring period*		86-14	86-14	86-14	86-14	86-14	86-14
Parameter	**Unit**	**Results of the Seasonal Kendall Test**					
Dissolved oxygen	mg/L	↗	↗	↗	↗	–	↗
pH		–	↗	↗	↗	–	↘
Suspended solids	mg/L	↘	↘	↘	↘	↘	↘
BOD_5	mg/L	↘	↘	↘	↘	↘	↘
COD	mg/L	↘	↘	↘	↘	↘	↘
Oil & grease	mg/L	–	–	–	–	–	–
E. coli	cfu/100mL	↘	↘	↘	↘	↘	↘
Faecal coliforms	cfu/100mL	↘	↘	↘	↘	↘	↘
Ammonia-nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Nitrate-nitrogen	mg/L	↗	↗	↗	↗	↗	↗
Total Kjeldahl nitrogen	mg/L	↘	↘	↘	↘	↘	↘
Ortho-phosphate	mg/L	↗	↗	↗	↗	↗	↗
Total phosphorus	mg/L	–	–	–	↘	–	–
Sulphide	mg/L	↘	↘	↘	–	–	–
Aluminium	µg/L	–	–	–	↘	–	–
Cadmium	µg/L	–	↘	↘	–	–	–
Chromium	µg/L	↘	↘	↘	↘	↘	↘
Copper	µg/L	↘	↘	↘	↘	↘	↘
Lead	µg/L	↘	↘	↘	↘	↘	↘
Zinc	µg/L	–	↘	–	↘	–	↘
Flow	L/s	×	×	×	–	–	–

Notes:
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2. ↗ represents an increasing trend significant at $p < 0.05$.
3. ↘ represents a decreasing trend significant at $p < 0.05$.
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Summary of river water quality improvements in 18 districts

District	Improvement	Remaining Problem
New Territories		
Kwai Tsing	All factory discharges are now controlled under the Water Pollution Control Ordinance. Domestic and commercial premises are connected to government sewers. Water quality in Kau Wa Keng Stream improved from “Bad” in 1991 to “Good” in 2014. Its *E. coli* level has been reduced by 60% compared with 1998. Sewerage works for villages are being planned.	Still affected by expedient connections and a small number of unsewered villages
Tsuen Wan	All factory discharges are now controlled under the Water Pollution Control Ordinance. Domestic and commercial premises are connected to government sewers. Livestock farm discharges eliminated under the Livestock Waste Control Scheme. Sam Dip Tam Stream improved from “Bad” in 1988 to “Excellent” in 2014. Its *E. coli* level has been reduced by 80% compared with 1999. Pai Min Kok Stream improved from “Bad” in 1988 to “Excellent” in 2014. Its *E. coli* level has been reduced by over 86% compared with 1989. Sewerage works at hinterland of affected beaches have been completed and progressive connection of unsewered properties to the new public sewers is made. Sewer provisions for other villages in the area are being planned.	Still affected by expedient connections and a small number of unsewered villages.
Tuen Mun	All factory discharges are now controlled under the Water Pollution Control Ordinance. Domestic and commercial premises are connected to government sewers. Livestock farm discharges eliminated under the Livestock Waste Control Scheme. Tuen Mun River upstream improved from “Very Bad” in 1988 to “Bad” in 2014. Its *E. coli* level has been reduced by over 90% compared with 1988. Tuen Mun River midstream and downstream improved from “Bad” in 1988 to “Good” in 2014. The *E. coli* level has been reduced by over 90% compared with 1988. A new trunk sewer to the west of Tuen Mun River is under construction for completion by mid-2015. Sewerage works for villages are progressively being planned and implemented. The Pillar Point Sewage Treatment Works have been upgraded to chemically enhanced primary treatment level with UV disinfection since May 2014.	Still affected by expedient connections and unsewered villages especially in the upstream region.
Yuen Long	Under the Livestock Waste Control Scheme, most of the farms had ceased operation. Factory discharges are controlled under the Water Pollution Control Ordinance. Most of the domestic and commercial premises in the urbanized town center are connected to government sewers. Yuen Long River and Kam Tin River both changed from “Very Bad” in 1986 to “Bad” and “Fair” respectively in 2014. The *E. coli* level of these rivers has reduced by over 70% compared with 1998. Tin Shui Wai Nullah improved from “Bad” in 1993 to “Fair” and “Good” in 2014. The *E. coli* level of this nullah has reduced by over 95% compared with 1992. Trunk sewers, pumping stations, and village sewerage are being planned and constructed progressively. The San Wai Sewage Treatment Works will be expanded in anticipation of projected population growth and upgraded together with the Yuen Long Sewage Treatment Works to produce higher quality effluent.	Still affected by polluted discharges from unsewered villages and expedient discharges from industrial enterprises and livestock farms.

District	Improvement	Remaining Problem
New Territories		
North	Under the Livestock Waste Control Scheme, most farms have ceased operation. Factory discharges are controlled under the Water Pollution Control Ordinance. Most of the domestic and commercial premises in the urbanized town centers are connected to government sewers. The downstream stations of River Indus, Beas and Ganges improved from “Very Bad” in 1986 to “Fair” or better in 2014. The *E. coli* level of these rivers has been reduced by over 90% compared with 1990. Sewerage works for villages are progressively being planned and implemented. The Sha Tau Kok and Shek Wu Hui Sewage Treatment Works will be expanded and upgraded to improve effluent quality and in anticipation of projected population growth and establishment of the New Development Areas.	Still affected by polluted discharges from unsewered villages and expedient discharges from industrial enterprises and livestock farms. Downstream of River Indus is affected by backflow of Shenzhen River water.
Tai Po	Factory discharges are controlled under the Water Pollution Control Ordinance. Most of the domestic and commercial premises in the urbanized town centers’ are connected to government sewers. Under the Livestock Waste Control Scheme, livestock farms have ceased operation. The water quality of downstream stations of rivers in the area improved from “Very Bad” in 1986 to “Good” or better in 2014. The *E. coli* level of these rivers has been reduced by over 75% compared with 1999. Sewerage works for villages are progressively being planned and implemented. The Tai Po Sewage Treatment Works acquired UV disinfection facilities in 2010 and its treatment capacity will be increased to 120,000 m^3/d in 2015.	Still affected by polluted discharges from unsewered villages and expedient connections.
Sha Tin	Factory discharges are controlled under the Water Pollution Control Ordinance. Most of the domestic and commercial premises in the urbanized town center are connected to government sewers. Under the Livestock Waste Control Scheme, livestock farms have ceased operation. The water quality of the Shing Mun River main channel improved from “Fair” in 1986 to “Excellent” in 2014. The *E. coli* level of the river has been reduced by over 85% compared with 1988. Village sewerage is being extended to most of the remaining villages in the area. The Sha Tin Sewage Treatment Works acquired UV disinfection facilities in 2010.	Still affected by polluted discharges from unsewered villages and expedient connections.
Sai Kung	Factory discharges are now controlled under the Water Pollution Control Ordinance. Most of the domestic and commercial premises in the urbanized town centers are connected to government sewers. The rural village houses are being connected to government sewers. Under the Livestock Waste Control Scheme, livestock farms had ceased operation. The water quality of the rivers has improved from “Bad” in 1991 to “Good” or better in 2014. The *E. coli* level has reduced by 75% compared with 1997. Local town and village sewerage improvements are being planned and implemented. Upgrading of the Sai Kung Sewage Treatment Works is under planning.	Still affected by polluted discharges from unsewered villages and expedient connections.
Islands	Some of the domestic premises are connected to government sewers. Under the Livestock Waste Control Scheme, the small number of livestock farms have all been closed. Mui Wo River and Tung Chung River have stayed “Good” or better throughout the years. The *E. coli* level of Mui Wo River has been reduced by 97% compared with 1988. Additional village sewerage and sewage treatment facilities and upgrading of treatment facilities are being planned and provided to southern Lantau, Mui Wo, Lamma Island, Cheung Chau and Peng Chau.	Still affected by discharges from unsewered villages and some expedient connections.

District	Improvement	Remaining Problem
Kowloon		
Yau Tsim Mong	The urban area of Kowloon contains few natural watercourses. Factory and restaurant discharges are now controlled under the Water Pollution Control Ordinance. Domestic and commercial premises are connected to government sewers. A large number of expedient connections have been rectified. The water quality of the Kai Tak River improved from “Very Bad” in 1986 to “Good” or better in 2014. The *E. coli* level of the region has been reduced by over 85% compared with 1999. Sewerage improvement works in the area are to be implemented. In 2010, the Civil Engineering and Development Department commissioned the Kai Tak Development - Environmental Improvement to Kai Tak Approach Channel. The Upgrading of Central & East Kowloon Sewerage, phase 1 was completed in August 2012. Phase II of the upgrading works is scheduled to be completed at the end of 2015. Such works should further improve the water quality of Kai Tak River and the adjacent marine water.	Mainly affected by expedient connections, rear lane washing activities, urban run-offs and mis-connections to the storm drain system.
Sham Shui Po		
Kowloon City		
Wong Tai Sin		
Kwun Tong		
Hong Kong Island		
Central and Western	The urban area of Hong Kong Island contains few natural watercourses. Factory and restaurant discharges are now controlled under the Water Pollution Control Ordinance. Domestic and commercial premises are connected to government sewers. A large number of expedient connections have been rectified. Construction of the Harbour Area Treatment Scheme (HATS) Stage 2A has started in July 2009 and is expected to complete in the second half of 2015.	Mainly affected by expedient connections, rear lane washing activities, urban run-offs and mis-connections to the storm drain system. Some streams are affected by discharges from squatters built near the streams.
Wan Chai		
Eastern		
Southern		