

**BAB 3**  
***Chapter 3***

**Kualiti Air Sungai**  
***River Water Quality***





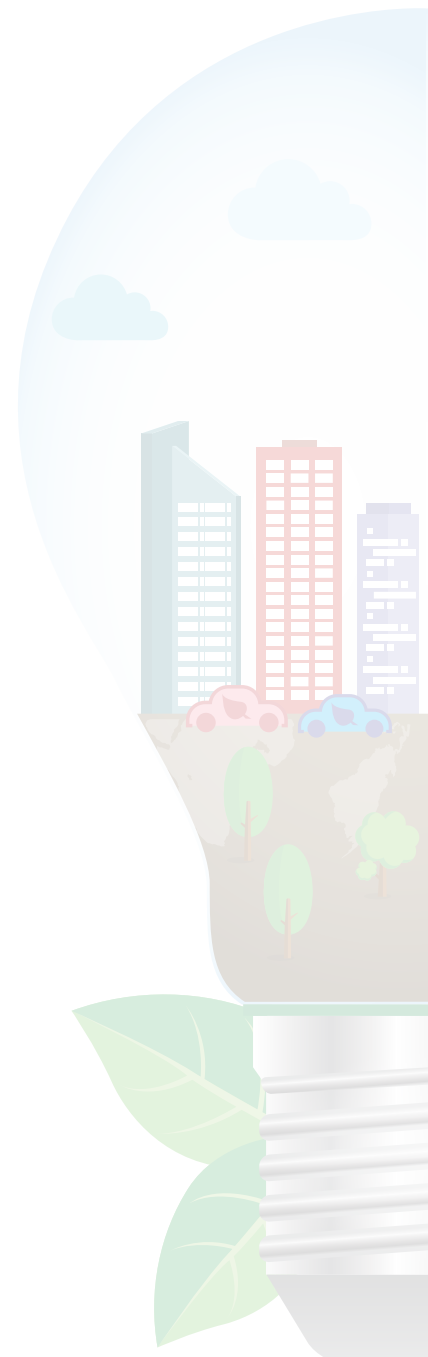
## BAB 3 / CHAPTER 3

### KUALITI AIR SUNGAI

### RIVER WATER QUALITY

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## PENGAWASAN KUALITI AIR SUNGAI RIVER WATER QUALITY MONITORING

Jabatan Alam Sekitar (JAS) meneruskan program pengawasan kualiti air sungai pada tahun 2015 bagi menentukan kualiti air sungai dan mengesan perubahan ke atas kualiti air sungai. Sampel-sampel air sungai diambil daripada stesen-stesen yang telah ditetapkan dan diukur kualitinya secara in-situ serta dihantar ke makmal untuk dianalisis bertujuan menentukan kriteria dari segi fizik-kimia dan biologi. Indeks Kualiti Air (IKA) digunakan untuk mengukur tahap pencemaran dan kesesuaian jenis guna air seperti yang digariskan oleh Standard Kualiti Air Negara (**ANNEX**). IKA telah mengambilkira parameter Oksigen Terlarut, Keperluan Oksigen Biokimia, Keperluan Oksigen Kimia, Ammonia Nitrogen, Pepejal Terampai dan pH. Pada tahun 2015, kualiti air sungai telah dinilai berdasarkan sejumlah 5,469 sampel air sungai yang telah diambil daripada sejumlah 891 stesen pengawasan manual yang merangkumi 477 sungai. Stesen-stesen tersebut adalah terdiri daripada 801 stesen ambien dan *baseline*, 55 stesen di hulu muka sauk terpilih, dan 35 stesen bagi projek *River of Life* (RoL). Kualiti air sungai turut dinilai berdasarkan data daripada 13 stesen pengawasan automatik.

*The Department of Environment (DOE) continued with the river water quality monitoring programme in 2015 to determine the status of river water quality and to detect changes in river water quality. Water samples were collected at regular intervals from designated stations for in-situ and laboratory analysis to determine its physico-chemical and biological characteristics. The Water Quality Index (WQI) is used to indicate the level of pollution and the corresponding suitability in terms of water uses according to the National Water Quality Standards for Malaysia (NWQS) (**ANNEX**). The WQI takes into consideration parameters including Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (NH<sub>3</sub>-N), Suspended Solids (SS) and pH. In 2015, river water quality was assessed based on a total of 5,469 samples taken from a total of 891 manual monitoring stations covering 477 rivers. The stations comprised of 801 ambient and baseline stations, 55 located upstream of selected water intakes, and 35 stations for River of Life (ROL) project. Water quality was also assessed from 13 continuous water quality monitoring stations.*



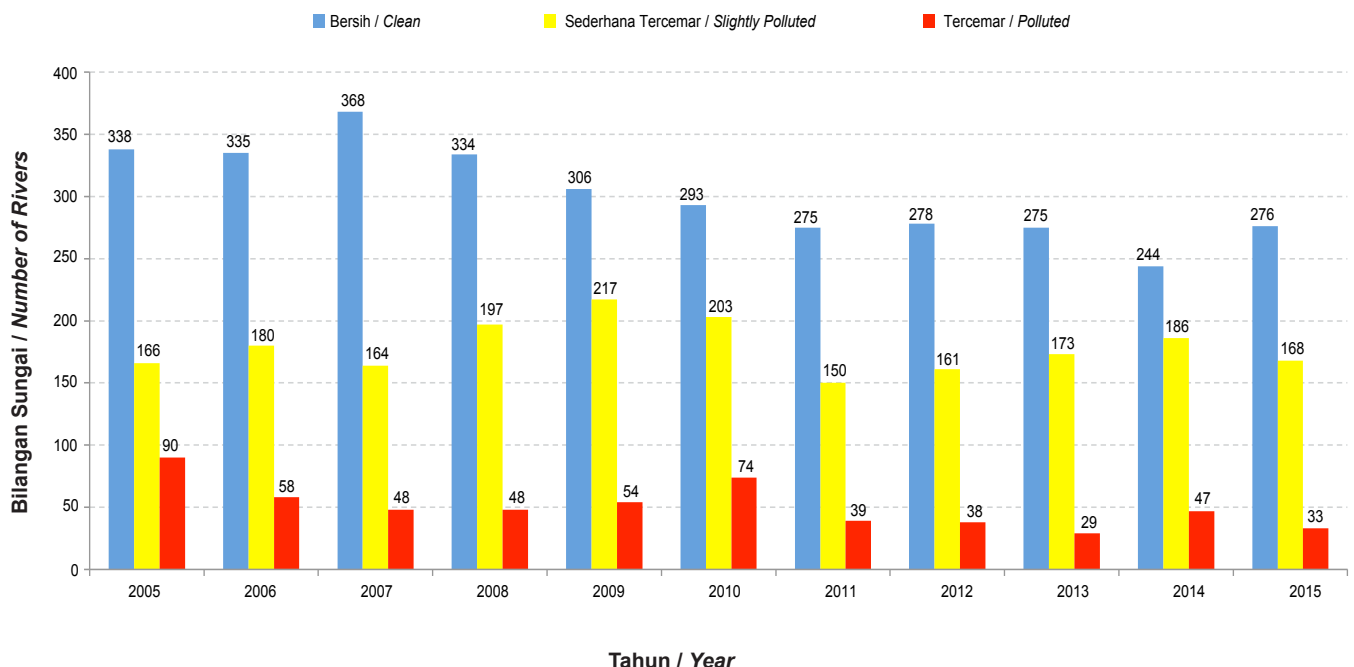
## STATUS KUALITI AIR SUNGAI RIVER WATER QUALITY STATUS

Sejumlah 276 (58%) sungai daripada 477 sungai yang diawasi telah menunjukkan indeks kualiti air bersih, 168 (35%) adalah sederhana tercemar dan 33 (7%) adalah tercemar (**Rajah 3.1**). Status kualiti air sungai-sungai yang diawasi adalah seperti dalam **Jadual 3.1, 3.2 dan 3.3**.

Keperluan Oksigen Biokimia (BOD), Ammonia Nitrogen ( $\text{NH}_3\text{-N}$ ) dan Pepejal Terampai (SS) masih menjadi punca kepada pencemaran sungai. BOD yang tinggi kerap kali dikaitkan dengan pengolahan sisa kumbahan yang tidak mencukupi, atau akibat pelepasan effluen daripada industri-industri pengilangan dan berasaskan pertanian. Punca utama  $\text{NH}_3\text{-N}$  pula boleh dikaitkan dengan aktiviti penternakan dan kumbahan domestik manakala punca utama SS adalah kerja-kerja tanah yang tidak teratur dan aktiviti pembukaan tanah.

*Out of the 477 rivers monitored, 276 (58%) were found to have clean water quality index, 168 (35%) slightly polluted and 33 (7%) polluted (**Figure 3.1**). The monitored rivers and their overall quality status are as shown in **Tables 3.1, 3.2 and 3.3**.*

*As in previous years, the Biochemical Oxygen Demand (BOD), Ammoniacal Nitrogen ( $\text{NH}_3\text{-N}$ ) and Suspended Solids (SS) remained to be significant in terms of river pollution. High BOD can be attributed to inadequate treatment of sewage or effluent from agro-based and manufacturing industries. The main sources of  $\text{NH}_3\text{-N}$  were animal farming and domestic sewage. Meanwhile the sources for SS were mainly the improper earthworks and land clearing activities.*



Rajah 3.1 Malaysia: Tren Kualiti Air Sungai, 2005-2015  
Figure 3.1 Malaysia: River Water Quality Trend, 2005-2015

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Perlis	Perlis	Sg. Pelarit	1	87	B/C	II	93	B/C	I
		Sg. Wang Kelian	1	88	B/C	II	89	B/C	II
		Sg. Jernih	1	76	ST/SP	III	85	B/C	II
		Sg. Ngulang	1	72	ST/SP	III	81	B/C	II
Kedah	Kedah	Sg. Janing	1	93	B/C	I	93	B/C	I
		Sg. Padang Terap	3	82	B/C	II	84	B/C	II
		Sg. Pedu	1	85	B/C	II	86	B/C	II
		Sg. Tekai	1	83	B/C	II	85	B/C	II
	Merbok	Sg. Tok Pawang	1	91	B/C	II	85	B/C	II
		Sg. Tupah	1	93	B/C	I	93	B/C	I
Kedah (Langkawi)	Kisap	Sg. Kisap	1	89	B/C	II	93	B/C	I
	Melaka	Sg. Petang	1	94	B/C	I	93	B/C	I
Kedah / P.Pinang	Muda	Sg. Chepir	1	81	B/C	II	85	B/C	II
		Sg. Ketil	2	86	B/C	II	81	B/C	II
		Sg. Muda	4	83	B/C	II	85	B/C	II
		Sg. Pegang	1	93	B/C	I	92	B/C	II
		Sg. Sedim	1	81	B/C	II	85	B/C	II
		Sg. Karang	1	78	ST/SP	II	88	B/C	II
P.Pinang / Kedah	Perai	Sg. Kulim	2	81	B/C	II	82	B/C	II
		Sg. Keladi	1	80	ST/SP	II	81	B/C	II
P.Pinang	Pinang	Sg. Air Terjun	1	89	B/C	II	87	B/C	II
	Kluang	Sg. Ara	2	84	B/C	II	87	B/C	II
	Jawi	Sg. Junjong	1	84	B/C	II	90	B/C	II
P.Pinang / Kedah / Perak	Kerian	Sg. Kechil	1	88	B/C	II	90	B/C	II
		Sg. Kerian	4	81	B/C	II	84	B/C	II
		Sg. Selama	2	74	ST/SP	III	81	B/C	II



Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Perak	Bruas	Sg. Bruas	3	86	B/C	II	84	B/C	II
		Sg. Dandang	1	89	B/C	II	88	B/C	II
		Sg. Rotan	1	93	B/C	I	92	B/C	II
	Kurau	Sg. Ara	2	94	B/C	I	92	B/C	II
		Sg. Kurau	4	80	ST/SP	II	81	B/C	II
	Perak	Sg. Batang Padang	3	87	B/C	II	84	B/C	II
		Sg. Bidor	3	83	B/C	II	83	B/C	II
		Sg. Chenderiang	1	84	B/C	II	81	B/C	II
		Sg. Chepor	1	85	B/C	II	91	B/C	II
		Sg. Kampar	2	90	B/C	II	88	B/C	II
		Sg. Kangsar	1	84	B/C	II	82	B/C	II
		Sg. Kinjang	1	89	B/C	II	88	B/C	II
		Sg. Kinta	6	82	B/C	II	82	B/C	II
		Sg. Klah	1	90	B/C	II	88	B/C	II
		Sg. Kuang	1	86	B/C	II	84	B/C	II
		Sg. Perak	8	85	B/C	II	84	B/C	II
		Sg. Raia	2	87	B/C	II	88	B/C	II
		Sg. Sungkai	2	87	B/C	II	86	B/C	II
		Sg. Kerdah	1	74	ST/SP	III	86	B/C	II
		Raja Hitam	Sg. Nyior	1	95	B/C	I	93	B/C
	Sepetang	Sg. Batu Tegoh	3	86	B/C	II	87	B/C	II
		Sg. Jana	1	91	B/C	II	93	B/C	I
		Sg. Limau	1	86	B/C	II	90	B/C	II
		Sg. Temerloh	2	86	B/C	II	89	B/C	II
		Sg. Trong	1	88	B/C	II	92	B/C	II
	Wangi	Sg. Wangi	1	73	ST/SP	III	81	B/C	II
	Selangor / Perak	Bernam	Sg. Bernam	4	88	B/C	II	86	B/C
Sg. Inki			1	94	B/C	I	90	B/C	II
Sg. Slim			2	85	B/C	II	87	B/C	II
Sg. Trolak			1	93	B/C	I	89	B/C	II
Selangor	Selangor	Sg. Batang Kali	1	87	B/C	II	87	B/C	II
		Sg. Kanching	1	86	B/C	II	90	B/C	II
		Sg. Kerling	1	91	B/C	II	88	B/C	II
		Sg. Serendah	1	88	B/C	II	88	B/C	II
Selangor / WPKL	Klang	Sg. Penchala	1	85	B/C	II	88	B/C	II
		Sg. Semelah	1	83	B/C	II	84	B/C	II
		Sg. Batu	4	78	ST/SP	II	81	B/C	II
Selangor / Putrajaya / N.Sembilan	Langat	Sg. Chuau	2	87	B/C	II	88	B/C	II
		Sg. Jijan	1	82	B/C	II	84	B/C	II
		Sg. Lui	1	93	B/C	I	90	B/C	II
		Sg. Semenyih	1	84	B/C	II	81	B/C	II

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015			
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	
N.Sembilan / Melaka	Linggi	Sg. Batang Penar	1	88	B/C	II	90	B/C	II	
		Sg. Kundur Besar	1	82	B/C	II	82	B/C	II	
		Sg. Pedas	1	83	B/C	II	84	B/C	II	
		Sg. Rembau	2	82	B/C	II	84	B/C	II	
		Sg. Siput	1	80	ST/SP	II	83	B/C	II	
Melaka / N.Sembilan	Melaka	Sg. Batang Melaka	2	84	B/C	II	82	B/C	II	
		Sg. Dusun	1	90	B/C	II	85	B/C	II	
		Sg. Kemunting	1	85	B/C	II	85	B/C	II	
		Sg. Tampin	1	94	B/C	I	89	B/C	II	
Melaka	Kesang	Sg. Chohong	2	93	B/C	I	87	B/C	II	
	Duyong	Sg. Gapam	1	82	B/C	II	90	B/C	II	
Johor / N.Sembilan / Pahang	Muar	Sg. Air Panas	1	87	B/C	II	92	B/C	II	
		Sg. Juasseh	1	90	B/C	II	92	B/C	II	
		Sg. Labis	1	71	ST/SP	III	85	B/C	II	
		Sg. Muar	8	80	ST/SP	II	83	B/C	II	
		Sg. Segamat	1	79	ST/SP	II	86	B/C	II	
Johor	Batu Pahat	Sg. Bantang	1	88	B/C	II	93	B/C	I	
		Sg. Chaah	1	87	B/C	II	83	B/C	II	
		Sg. Lenik	1	84	B/C	II	82	B/C	II	
		Sg. Merek	1	87	B/C	II	85	B/C	II	
	Johor	Johor	Sg. Belitong	1	82	B/C	II	84	B/C	II
			Sg. Bukit Besar	1	91	B/C	II	82	B/C	II
			Sg. Layang	1	90	B/C	II	87	B/C	II
			Sg. Layau Kiri	1	86	B/C	II	86	B/C	II
			Sg. Linggiu	1	85	B/C	II	86	B/C	II
			Sg. Pelepah	2	92	B/C	II	88	B/C	II
			Sg. Penggeli	2	85	B/C	II	81	B/C	II
			Sg. Remis	1	83	B/C	II	88	B/C	II
			Sg. Santi	1	90	B/C	II	82	B/C	II
			Sg. Sayong	4	81	B/C	II	83	B/C	II
			Sg. Semangar	1	87	B/C	II	88	B/C	II
			Sg. Telor	1	86	B/C	II	88	B/C	II
			Sedili Besar	Sg. Dohol	1	85	B/C	II	83	B/C
	Sg. Pasir Panjang	1		86	B/C	II	84	B/C	II	
	Sedili Kecil	Sg. Sedili Kecil	2	77	ST/SP	II	81	B/C	II	
	Pahang / Johor	Endau	Sg. Endau	3	86	B/C	II	85	B/C	II
Sg. Jasin			1	91	B/C	II	91	B/C	II	
Sg. Kahang			1	87	B/C	II	84	B/C	II	
Sg. Mamai			1	83	B/C	II	81	B/C	II	
Sg. Paloh			1	82	B/C	II	83	B/C	II	
Sg. Selai			1	90	B/C	II	86	B/C	II	
Sg. Tamok			1	85	B/C	II	84	B/C	II	



Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Pahang / N.Sembilan	Pahang	Sg. Bentong	1	89	B/C	II	90	B/C	II
		Sg. Benus	2	90	B/C	II	90	B/C	II
		Sg. Berkapor	1	85	B/C	II	86	B/C	II
		Sg. Jelai	2	83	B/C	II	86	B/C	II
		Sg. Jempol	2	84	B/C	II	86	B/C	II
		Sg. Kelau	1	89	B/C	II	91	B/C	II
		Sg. Kertam	1	83	B/C	II	86	B/C	II
		Sg. Koyan	1	87	B/C	II	88	B/C	II
		Sg. Lepar	3	83	B/C	II	85	B/C	II
		Sg. Lipis	3	86	B/C	II	90	B/C	II
		Sg. Luit	1	87	B/C	II	81	B/C	II
		Sg. Maran	1	82	B/C	II	85	B/C	II
		Sg. Pahang	8	83	B/C	II	83	B/C	II
		Sg. Perting	1	90	B/C	II	90	B/C	II
		Sg. Semantan	4	85	B/C	II	85	B/C	II
		Sg. Tahan	1	85	B/C	II	89	B/C	II
		Sg. Tanglir	1	89	B/C	II	87	B/C	II
		Sg. Tasik Bera	1	83	B/C	II	81	B/C	II
		Sg. Telang	1	84	B/C	II	87	B/C	II
		Sg. Tembeling	1	86	B/C	II	88	B/C	II
		Sg. Teranum	1	93	B/C	I	91	B/C	II
		Sg. Teras	1	91	B/C	II	92	B/C	II
		Sg. Teris	3	86	B/C	II	84	B/C	II
		Sg. Triang	2	83	B/C	II	83	B/C	II
		Sg. Bera	2	79	ST/SP	II	81	B/C	II
		Sg. Jengka	2	77	ST/SP	II	83	B/C	II
		Sg. Kundang	1	74	ST/SP	III	84	B/C	II
		Sg. Mentiga	1	76	ST/SP	III	81	B/C	II
Sg. Tekal	1	79	ST/SP	II	83	B/C	II		
Sg. Tekam	2	77	ST/SP	II	85	B/C	II		

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Pahang	Anak Endau	Sg. Anak Endau	2	80	ST/SP	II	82	B/C	II
	Bebar	Sg. Merba	1	75	ST/SP	III	82	B/C	II
	Bertam	Sg. Burung	1	93	B/C	I	89	B/C	II
		Sg. Habu	1	90	B/C	II	90	B/C	II
		Sg. Ringlet	1	82	B/C	II	83	B/C	II
		Sg. Terla	1	86	B/C	II	84	B/C	II
		Sg. Tringkap	1	87	B/C	II	85	B/C	II
		Sg. Charu	1	85	B/C	II	84	B/C	II
	Kuantan	Sg. Kenau	1	88	B/C	II	90	B/C	II
		Sg. Kuantan	5	84	B/C	II	86	B/C	II
		Sg. Pandan	1	84	B/C	II	89	B/C	II
		Sg. Belat	1	79	ST/SP	II	83	B/C	II
		Merchong	Sg. Merchong	1	85	B/C	II	81	B/C
	Rompin	Sg. Aur	1	84	B/C	II	81	B/C	II
		Sg. Keratong	2	82	B/C	II	83	B/C	II
		Sg. Pukin	1	87	B/C	II	83	B/C	II
		Sg. Rompin	4	80	ST/SP	II	82	B/C	II
Terengganu	Besut	Sg. Besut	2	86	B/C	II	86	B/C	II
	Chukai	Sg. Ibok	1	82	B/C	II	84	B/C	II
	Dungun	Sg. Dungun	4	83	B/C	II	88	B/C	II
	Kemaman	Sg. Cherul	1	85	B/C	II	81	B/C	II
		Sg. Kemaman	2	85	B/C	II	85	B/C	II
	Kertih	Sg. Kertih	1	82	B/C	II	81	B/C	II
	Paka	Sg. Paka	1	80	ST/SP	II	87	B/C	II
		Sg. Rasau	1	78	ST/SP	II	81	B/C	II
	Setiu	Sg. Chalok	2	87	B/C	II	86	B/C	II
		Sg. Setiu	2	89	B/C	II	90	B/C	II
	Terengganu	Sg. Berang	1	88	B/C	II	86	B/C	II
		Sg. Nerus	1	85	B/C	II	82	B/C	II
		Sg. Pueh	1	89	B/C	II	87	B/C	II
Sg. Telemong		1	83	B/C	II	86	B/C	II	
Sg. Terengganu		3	85	B/C	II	83	B/C	II	

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015			
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	
Kelantan	Golok	Sg. Golok	5	84	B/C	II	88	B/C	II	
		Sg. Lanas	1	88	B/C	II	87	B/C	II	
	Kelantan	Sg. Belatop	2	82	B/C	II	87	B/C	II	
		Sg. Ber	1	90	B/C	II	92	B/C	II	
		Sg. Berok	3	82	B/C	II	85	B/C	II	
		Sg. Betis	1	90	B/C	II	89	B/C	II	
		Sg. Galas	5	83	B/C	II	86	B/C	II	
		Sg. Kelantan	3	82	B/C	II	84	B/C	II	
		Sg. Kerilla	1	88	B/C	II	89	B/C	II	
		Sg. Lebir	3	82	B/C	II	82	B/C	II	
		Sg. Nal	2	89	B/C	II	87	B/C	II	
		Sg. Nenggiri	3	84	B/C	II	83	B/C	II	
		Sg. Pergau	6	90	B/C	II	89	B/C	II	
		Sg. Sokor	1	85	B/C	II	83	B/C	II	
		Sg. Tuang	1	91	B/C	II	90	B/C	II	
		Sg. Relai	1	74	ST/SP	III	82	B/C	II	
		Kemasin	Sg. Kemasin	2	72	ST/SP	III	84	B/C	II
	Sg. Semerak		2	79	ST/SP	II	84	B/C	II	
	Sabah	Apas	Sg. Apas	1	80	ST/SP	II	85	B/C	II
		Bengkoka	Sg. Bengkoka	2	75	ST/SP	III	88	B/C	II
Bingkongan		Sg. Bandau	1	91	B/C	II	89	B/C	II	
		Sg. Bingkongan	2	91	B/C	II	90	B/C	II	
		Sg. Menggaris	2	90	B/C	II	90	B/C	II	
Brantian		Sg. Tandek	1	82	B/C	II	88	B/C	II	
		Sg. Brantian	1	87	B/C	II	84	B/C	II	
Kedamaian		Sg. Kedamaian	1	88	B/C	II	83	B/C	II	
		Sg. Tempasuk	2	90	B/C	II	84	B/C	II	
		Sg. Wariu	1	90	B/C	II	85	B/C	II	
Kinabatangan		Sg. Karamuak	1	91	B/C	II	88	B/C	II	
		Sg. Koyah	1	89	B/C	II	81	B/C	II	
		Sg. Menanggul	1	84	B/C	II	81	B/C	II	
Labok		Sg. Kinipir	2	92	B/C	II	90	B/C	II	
		Sg. Liwagu	2	91	B/C	II	87	B/C	II	
		Sg. Maliau	1	92	B/C	II	88	B/C	II	
		Sg. Labok	1	80	ST/SP	II	83	B/C	II	
Lakutan		Sg. Lakutan	1	84	B/C	II	91	B/C	II	
Likas		Sg. Menggatal	2	83	B/C	II	88	B/C	II	
Lingkungan		Sg. Bukau	1	75	ST/SP	III	84	B/C	II	
	Sg. Lingkungan	1	73	ST/SP	III	86	B/C	II		
Menggalong	Sg. Menggalong	2	84	B/C	II	88	B/C	II		
Merotai	Sg. Merotai	3	79	ST/SP	II	86	B/C	II		
Mounad	Sg. Mounad	2	88	B/C	II	87	B/C	II		

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Sabah	Moyog	Sg. Moyog	4	89	B/C	II	86	B/C	II
	Padas	Sg. Bunsit	1	93	B/C	I	92	B/C	II
		Sg. Liawan	1	90	B/C	II	91	B/C	II
		Sg. Pegalan	3	81	B/C	II	85	B/C	II
		Sg. Tandulu	1	92	B/C	II	92	B/C	II
		Sg. Pangatan	1	70	ST/SP	III	85	B/C	II
	Papar	Sg. Papar	3	88	B/C	II	84	B/C	II
	Sapi	Sg. Sualong	1	90	B/C	II	90	B/C	II
	Segama	Sg. Segama	3	86	B/C	II	83	B/C	II
	Silabukan	Sg. Silabukan	2	86	B/C	II	83	B/C	II
	Sugut	Sg. Bongkud	1	93	B/C	I	91	B/C	II
		Sg. Lohan	1	92	B/C	II	89	B/C	II
		Sg. Merali	1	93	B/C	I	90	B/C	II
		Sg. Sugut	3	89	B/C	II	89	B/C	II
	Tawau	Sg. Tawau	4	80	ST/SP	II	87	B/C	II
	Tuaran	Sg. Song Sai	1	90	B/C	II	88	B/C	II
		Sg. Tuaran	2	92	B/C	II	90	B/C	II
		Sg. Damit	2	79	ST/SP	II	87	B/C	II
	Tungku	Sg. Tungku	2	87	B/C	II	82	B/C	II
	Umas-Umas	Sg. Umas-Umas	1	79	ST/SP	II	84	B/C	II
Sarawak	Balingian	Sg. Balingian	2	72	ST/SP	III	82	B/C	II
	Baram	Sg. Baram	4	82	B/C	II	83	B/C	II
		Sg. Tutuh	1	85	B/C	II	91	B/C	II
	Kayan	Sg. Kayan	3	85	B/C	II	84	B/C	II
	Kemena	Sg. Kemena	3	80	ST/SP	II	83	B/C	II
		Sg. Sibiu	1	79	ST/SP	II	81	B/C	II
	Kerian	Sg. Kerian	2	74	ST/SP	III	86	B/C	II
		Sg. Seblak	1	68	ST/SP	III	83	B/C	II
	Lawas	Sg. Lawas	3	85	B/C	II	84	B/C	II
	Lupar	Sg. Ai	2	87	B/C	II	91	B/C	II
		Sg. Sekerang	1	81	B/C	II	88	B/C	II
		Sg. Lupar	3	76	ST/SP	III	82	B/C	II
		Sg. Seterap	1	76	ST/SP	III	82	B/C	II
		Sg. Undup	1	79	ST/SP	II	88	B/C	II
	Miri	Sg. Padang Liku	1	88	B/C	II	84	B/C	II
	Mukah	Sg. Mukah	4	73	ST/SP	III	82	B/C	II
	Niah	Sg. Sekaloh	1	81	B/C	II	84	B/C	II
Sg. Niah		2	80	ST/SP	II	85	B/C	II	
Oya	Sg. Oya	3	74	ST/SP	III	82	B/C	II	

Jadual 3.1 Malaysia: Status Kualiti Air bagi Sungai Bersih, 2015  
 Figure 3.1 Malaysia: Water Quality Status of Clean Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Sarawak	Rajang	Sg. Kanowit	1	84	B/C	II	85	B/C	II
		Sg. Balo	1	76	ST/SP	III	85	B/C	II
		Sg. Binatang	1	80	ST/SP	II	84	B/C	II
		Sg. Julau	1	80	ST/SP	II	81	B/C	II
		Sg. Meradong	1	78	ST/SP	II	82	B/C	II
		Sg. Rajang	11	75	ST/SP	III	81	B/C	II
		Sg. Sarikei	2	78	ST/SP	II	83	B/C	II
	Sadong	Sg. Sadong	4	75	ST/SP	III	83	B/C	II
	Sarawak	Sg. Sarawak	6	82	B/C	II	84	B/C	II
		Sg. Sarawak Kiri	1	86	B/C	II	84	B/C	II
		Sg. Semadang	1	86	B/C	II	88	B/C	II
		Sg. Kuap	1	79	ST/SP	II	84	B/C	II
		Sg. Samarahan	2	75	ST/SP	III	81	B/C	II
		Sg. Sarawak Kanan	1	76	ST/SP	III	82	B/C	II
		Sg. Tabuan	1	71	ST/SP	III	82	B/C	II
	Saribas	Sg. Layar	2	79	ST/SP	II	85	B/C	II
		Sg. Saribas	1	75	ST/SP	III	88	B/C	II
	Semunsam	Sg. Semunsam	1	87	B/C	II	84	B/C	II
	Sibuti	Sg. Kejapil	1	85	B/C	II	86	B/C	II
		Sg. Satap	1	76	ST/SP	III	85	B/C	II
		Sg. Sibuti	2	78	ST/SP	II	83	B/C	II
	Similajau	Sg. Similajau	2	79	ST/SP	II	82	B/C	II
	Suai	Sg. Suai	1	76	ST/SP	III	82	B/C	II
	Tatau	Sg. Tatau	1	82	B/C	II	85	B/C	II



Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Perlis	Perlis	Sg. Jarum	1	77	ST/SP	II	74	ST/SP	III
		Sg. Perlis	1	66	ST/SP	III	69	ST/SP	III
Kedah	Merbok	Sg. Merbok	1	82	B/C	II	69	ST/SP	III
		Sg. Bongkok	1	64	ST/SP	III	68	ST/SP	III
	Kedah	Sg. Kedah	1	66	ST/SP	III	77	ST/SP	II
		Sg. Pendang	1	78	ST/SP	II	78	ST/SP	II
Kedah (Langkawi)	Melaka	Sg. Melaka	5	81	B/C	II	75	ST/SP	III
Kedah / P.Pinang	Muda	Sg. Jerong	1	69	ST/SP	III	78	ST/SP	II
P.Pinang / Kedah	Perai	Sg. Jarak	3	73	ST/SP	III	77	ST/SP	II
		Sg. Perai	2	63	ST/SP	III	63	ST/SP	III
P.Pinang	Bayan Lepas	Sg. Bayan Lepas	1	61	ST/SP	III	68	ST/SP	III
		Sg. Tiram	2	71	ST/SP	III	75	ST/SP	III
	Jawi	Sg. Machang Bubok	1	72	ST/SP	III	78	ST/SP	II
	Juru	Sg. Kilang Ubi	4	73	ST/SP	III	71	ST/SP	III
		Sg. Pasir	1	65	ST/SP	III	70	ST/SP	III
		Sg. Juru	2	54	T/P	III	63	ST/SP	III
	Kluang	Sg. Relau	1	74	ST/SP	III	79	ST/SP	II
	Pinang	Sg. Air Itam	5	61	ST/SP	III	67	ST/SP	III
		Sg. Dondang	1	61	ST/SP	III	66	ST/SP	III

Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Perak	Perak	Sg. Pelus	2	83	B/C	II	79	ST/SP	II
		Sg. Kepayang	2	75	ST/SP	III	75	ST/SP	III
		Sg. Nyamok	1	68	ST/SP	III	79	ST/SP	II
		Sg. Pari	1	68	ST/SP	III	78	ST/SP	II
		Sg. Pinji	2	60	ST/SP	III	72	ST/SP	III
		Sg. Tumboh	1	65	ST/SP	III	71	ST/SP	III
		Sg. Seluang	1	49	T/P	IV	61	ST/SP	III
		Sg. Serokai	1	59	T/P	III	75	ST/SP	III
	Raja Hitam	Sg. Manjong	2	85	B/C	II	74	ST/SP	III
		Sg. Raja Hitam	2	73	ST/SP	III	68	ST/SP	III
	Sepetang	Sg. Sepetang	2	74	ST/SP	III	79	ST/SP	II
	Wangi	Sg. Deralik	1	67	ST/SP	III	71	ST/SP	III
	Selangor	Buloh	Sg. Buloh	4	56	T/P	III	63	ST/SP
Selangor		Sg. Selangor	4	81	B/C	II	80	ST/SP	II
		Sg. Sembah	1	75	ST/SP	III	78	ST/SP	II
Sepang		Sg. Sepang	2	83	B/C	II	76	ST/SP	III
Tengi		Sg. Tengi	3	76	ST/SP	III	76	ST/SP	III
Selangor WPKL	Klang	Sg. Ampang	2	67	ST/SP	III	71	ST/SP	III
		Sg. Anak Air Batu	1	75	ST/SP	III	77	ST/SP	II
		Sg. Damansara	2	80	ST/SP	II	78	ST/SP	II
		Sg. Gombak	3	75	ST/SP	III	75	ST/SP	III
		Sg. Jinjang	3	65	ST/SP	III	67	ST/SP	III
		Sg. Keroh	2	75	ST/SP	III	77	ST/SP	II
		Sg. Klang	8	64	ST/SP	III	68	ST/SP	III
		Sg. Rasau	1	79	ST/SP	II	80	ST/SP	II
		Sg. Belongkong	1	57	T/P	III	66	ST/SP	III
		Sg. Bunos	3	58	T/P	III	62	ST/SP	III
		Sg. Untut	1	44	T/P	IV	60	ST/SP	III
Selangor / Putrajaya / N.Sembilan	Langat	Sg. Anak Chuau	1	74	ST/SP	III	77	ST/SP	II
		Sg. Batang Nilai	1	66	ST/SP	III	63	ST/SP	III
		Sg. Langat	7	69	ST/SP	III	70	ST/SP	III
		Sg. Pajam	1	69	ST/SP	III	72	ST/SP	III

Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
N.Sembilan / Melaka	Linggi	Sg. Chembong	1	84	B/C	II	75	ST/SP	III
		Sg. Kepayong	1	74	ST/SP	III	74	ST/SP	III
		Sg. Linggi	5	74	ST/SP	III	74	ST/SP	III
		Sg. Simin	1	75	ST/SP	III	73	ST/SP	III
Melaka / N.Sembilan	Melaka	Sg. Durian Tunggal	1	78	ST/SP	II	80	ST/SP	II
		Sg. Melaka	1	73	ST/SP	III	77	ST/SP	II
		Sg. Rembia	1	49	T/P	IV	63	ST/SP	III
Melaka	Duyong	Sg. Duyong	3	65	ST/SP	III	72	ST/SP	III
	Kesang	Sg. Kesang	3	72	ST/SP	III	76	ST/SP	III
	Merlimau	Sg. Merlimau	2	50	T/P	IV	64	ST/SP	III
Johor / N.Sembilan / Pahang	Muar	Sg. Gemenchah	1	84	B/C	II	71	ST/SP	III
		Sg. Meda	1	82	B/C	II	75	ST/SP	III
Johor	Air Baloi	Sg. Air Baloi	3	46	T/P	IV	62	ST/SP	III
	Batu Pahat	Sg. Amran	1	71	ST/SP	III	65	ST/SP	III
		Sg. Bekok	5	77	ST/SP	II	76	ST/SP	III
		Sg. Berlian	1	76	ST/SP	III	70	ST/SP	III
		Sg. Merpo	1	69	ST/SP	III	65	ST/SP	III
		Sg. Simpang Kiri	3	65	ST/SP	III	65	ST/SP	III
		Sg. Batu Pahat	1	57	T/P	III	61	ST/SP	III
	Benut	Sg. Parit Hj. Yassin	1	82	B/C	II	77	ST/SP	II
		Sg. Benut	4	68	ST/SP	III	64	ST/SP	III
		Sg. Ulu Benut	1	78	ST/SP	II	76	ST/SP	III
		Sg. Pinggan	1	56	T/P	III	61	ST/SP	III
	Jemaluang	Sg. Jemaluang	2	81	B/C	II	78	ST/SP	II

Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Johor	Johor	Sg. Johor	4	85	B/C	II	80	ST/SP	II
		Sg. Lebam	1	83	B/C	II	68	ST/SP	III
		Sg. Panti	1	82	B/C	II	80	ST/SP	II
		Sg. Seluyut	1	82	B/C	II	79	ST/SP	II
		Sg. Anak Sg. Sayong	1	73	ST/SP	III	77	ST/SP	II
		Sg. Chemangar	1	78	ST/SP	II	68	ST/SP	III
		Sg. Papan	1	74	ST/SP	III	78	ST/SP	II
		Sg. Sebol	1	71	ST/SP	III	70	ST/SP	III
		Sg. Temoh	1	74	ST/SP	III	60	ST/SP	III
		Sg. Tiram	4	77	ST/SP	II	76	ST/SP	III
	Kaw. Pasir Gudang	Sg. Latoh	1	67	ST/SP	III	68	ST/SP	III
	Kim-Kim	Sg. Kim-Kim	2	75	ST/SP	III	68	ST/SP	III
	Mersing	Sg. Mersing	2	83	B/C	II	77	ST/SP	II
	Paloi	Sg. Paloi	1	86	B/C	II	78	ST/SP	II
	Pontian Besar	Sg. Air Hitam	1	68	ST/SP	III	64	ST/SP	III
		Sg. Pontian Besar	5	67	ST/SP	III	67	ST/SP	III
	Pontian Kecil	Sg. Pontian Kecil	2	71	ST/SP	III	71	ST/SP	III
	Pulai	Sg. Pulai	2	74	ST/SP	III	73	ST/SP	III
	Rambah	Sg. Rambah	2	60	ST/SP	III	67	ST/SP	III
	Sedili Besar	Sg. Ambat	1	84	B/C	II	79	ST/SP	II
		Sg. Temubor Kanan	1	87	B/C	II	79	ST/SP	II
		Sg. Sedili Besar	5	77	ST/SP	II	76	ST/SP	III
	Sedili Kecil	Sg. Anak Sedili Kecil	1	75	ST/SP	III	73	ST/SP	III
		Sg. Bahan	2	73	ST/SP	III	67	ST/SP	III
	Skudai	Sg. Skudai	9	66	ST/SP	III	65	ST/SP	III
	Tebrau	Sg. Bala	1	54	T/P	III	62	ST/SP	III
		Sg. Pandan	1	57	T/P	III	62	ST/SP	III
		Sg. Tebrau	4	59	T/P	III	70	ST/SP	III

Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Pahang / N.Sembilan	Pahang	Sg. T. Paya Bungor	1	84	B/C	II	80	ST/SP	II
		Sg. Chini	1	79	ST/SP	II	78	ST/SP	II
		Sg. Serting	2	71	ST/SP	III	75	ST/SP	III
		Sg. Tasik Chini	1	78	ST/SP	II	80	ST/SP	II
Pahang / Johor	Endau	Sg. Lenggor	1	81	B/C	II	79	ST/SP	II
		Sg. Melatai	1	68	ST/SP	III	63	ST/SP	III
		Sg. Mengkibol	3	73	ST/SP	III	71	ST/SP	III
		Sg. Pamol	1	62	ST/SP	III	62	ST/SP	III
		Sg. Semberong	5	79	ST/SP	II	77	ST/SP	II
Pahang	Balok	Sg. Balok	2	67	ST/SP	III	74	ST/SP	III
		Sg. Panjang	1	71	ST/SP	III	70	ST/SP	III
	Bebar	Sg. Serai	2	71	ST/SP	III	76	ST/SP	III
		Sg. Bebar	1	57	T/P	III	68	ST/SP	III
	Bertam	Sg. Bertam	1	81	B/C	II	79	ST/SP	II
		Sg. Lenggok	1	84	B/C	II	80	ST/SP	II
		Sg. Telom	2	84	B/C	II	77	ST/SP	II
	Cherating	Sg. Cherating	1	83	B/C	II	77	ST/SP	II
	Kuantan	Sg. Riau	1	77	ST/SP	II	75	ST/SP	III
		Sg. Talam	1	77	ST/SP	II	80	ST/SP	II
	Rompin	Sg. Pontian	1	80	ST/SP	II	80	ST/SP	II
Tonggok	Sg. Tonggok	1	69	ST/SP	III	80	ST/SP	II	
Terengganu	Chukai	Sg. Bungkus	1	80	ST/SP	II	76	ST/SP	III
		Sg. Chukai	1	78	ST/SP	II	75	ST/SP	III
		Sg. Ruang	1	73	ST/SP	III	72	ST/SP	III
	Ibai	Sg. Ibai	3	74	ST/SP	III	79	ST/SP	II
	Kemaman	Sg. Ransan	1	58	T/P	III	73	ST/SP	III
	Kluang	Sg. Kluang	1	74	ST/SP	III	75	ST/SP	III
	Marang	Sg. Marang	1	81	B/C	II	80	ST/SP	II
	Merang	Sg. Merang	1	73	ST/SP	III	67	ST/SP	III
	Merchang	Sg. Merchang	1	69	ST/SP	III	68	ST/SP	III



Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Kelantan	Pengkalan Chepa	Sg. Keladi	1	73	ST/SP	III	80	ST/SP	II
		Sg. Pengkalan Chepa	2	76	ST/SP	III	78	ST/SP	II
		Sg. Raja Gali	1	75	ST/SP	III	75	ST/SP	III
		Sg. Alor B	1	56	T/P	III	64	ST/SP	III
		Sg. Alor Lintah	1	53	T/P	III	66	ST/SP	III
	Pengkalan Datu	Sg. Pengkalan Datu	3	78	ST/SP	II	78	ST/SP	II
Sabah	Balung	Sg. Balung	1	77	ST/SP	II	78	ST/SP	II
	Bongawan	Sg. Bongawan	1	82	B/C	II	76	ST/SP	III
	Kalabakan	Sg. Kalabakan	3	79	ST/SP	II	80	ST/SP	II
	Kalumpang	Sg. Kalumpang	3	83	B/C	II	76	ST/SP	III
	Kimanis	Sg. Kimanis	1	82	B/C	II	77	ST/SP	II
	Kinabatangan	Sg. Kinabatangan	3	84	B/C	II	78	ST/SP	II
	Labok	Sg. Tungud	1	77	ST/SP	II	79	ST/SP	II
	Likas	Sg. Inanam	3	78	ST/SP	II	80	ST/SP	II
		Sg. Likas	2	70	ST/SP	III	73	ST/SP	III
	Membakut	Sg. Membakut	1	78	ST/SP	II	72	ST/SP	III
	Padas	Sg. Padas	3	74	ST/SP	III	79	ST/SP	II
	Paitan	Sg. Paitan	1	84	B/C	II	80	ST/SP	II
	Sapi	Sg. Sapi	3	79	ST/SP	II	76	ST/SP	III
	Segaliud	Sg. Segaliud	2	82	B/C	II	77	ST/SP	II
	Sembulan	Sg. Sembulan	2	68	ST/SP	III	64	ST/SP	III
	Telipok	Sg. Telipok	2	75	ST/SP	III	74	ST/SP	III
	Tenghilan	Sg. Tenghilan	1	81	B/C	II	74	ST/SP	III
Tingkayu	Sg. Tingkayu	2	83	B/C	II	76	ST/SP	III	

Jadual 3.2 Malaysia: Status Kualiti Air Sungai bagi Sungai Sederhana Tercemar, 2015  
 Table 3.2 Malaysia: Water Quality Status of Slightly Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Sarawak	Limbang	Sg. Limbang	5	80	ST/SP	II	80	ST/SP	II
	Miri	Sg. Lutong	1	64	ST/SP	III	74	ST/SP	III
		Sg. Miri	2	68	ST/SP	III	74	ST/SP	III
		Sg. Adong	1	58	T/P	III	78	ST/SP	II
		Sg. Dalam	1	51	T/P	IV	70	ST/SP	III
		Rajang	Sg. Salim	1	76	ST/SP	III	80	ST/SP
	Sadong	Sg. Karangan	2	75	ST/SP	III	79	ST/SP	II
	Sarawak	Sg. Maong Kiri	1	68	ST/SP	III	65	ST/SP	III
		Sg. Semenggoh	1	66	ST/SP	III	75	ST/SP	III
	Sibuti	Sg. Kabuloh	2	66	ST/SP	III	72	ST/SP	III
	Trusan	Sg. Trusan	1	81	B/C	II	78	ST/SP	II

Jadual 3.3 Malaysia: Status Kualiti Air bagi Sungai Tercemar, 2015  
 Table 3.3 Malaysia: Water Quality Status of Polluted Rivers, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	BILANGAN STESEN NUMBER OF STATIONS	2014			2015		
				IKA / WQI	KATEGORI CATEGORY	KELAS CLASS	IKA / WQI	KATEGORI CATEGORY	KELAS CLASS
Kedah	Merbok	Sg. Petani	1	59	T/P	III	53	T/P	III
P.Pinang / Kedah	Perai	Sg. Kereh	2	53	T/P	III	56	T/P	III
		Sg. Pertama	1	51	T/P	IV	50	T/P	IV
P.Pinang	Jawi	Sg. Jawi	1	51	T/P	IV	50	T/P	IV
	Juru	Sg. Rambai	1	55	T/P	III	52	T/P	III
	Pinang	Sg. Pinang	1	61	ST/SP	III	54	T/P	III
		Sg. Jelutong	1	37	T/P	IV	49	T/P	IV
Selangor / WPKL	Klang	Sg. Air Busuk	1	53	T/P	III	56	T/P	III
		Sg. Kerayong	2	55	T/P	III	56	T/P	III
		Sg. Kuyoh	1	53	T/P	III	56	T/P	III
		Sg. Toba	1	55	T/P	III	58	T/P	III
Melaka	Seri Melaka	Sg. Seri Melaka	1	59	T/P	III	58	T/P	III
Johor	Batu Pahat	Sg. Semberong	2	58	T/P	III	57	T/P	III
		Sg. Simpang Kanan	2	57	T/P	III	56	T/P	III
	Danga	Sg. Danga	2	56	T/P	III	51	T/P	IV
	Johor	Sg. Semenchu	1	63	ST/SP	III	45	T/P	IV
	Kawasan Pasir Gudang	Sg. Masai	1	64	ST/SP	III	57	T/P	III
		Sg. Buluh	1	50	T/P	IV	42	T/P	IV
		Sg. Perembi	1	59	T/P	III	46	T/P	IV
		Sg. Tukang Batu	1	40	T/P	IV	40	T/P	IV
	Kempas	Sg. Kempas	2	48	T/P	IV	59	T/P	III
	Pontian Besar	Sg. Ayer Merah	1	33	T/P	IV	37	T/P	IV
	Pulai	Sg. Ulu Choh	1	68	ST/SP	III	59	T/P	III
	Sanglang	Sg. Sanglang	1	58	T/P	III	59	T/P	III
	Segget	Sg. Segget	5	48	T/P	IV	49	T/P	IV
	Skudai	Sg. Melana	2	60	ST/SP	III	59	T/P	III
	Tebrau	Sg. Plentong	1	52	T/P	III	57	T/P	III
		Sg. Sebulung	1	34	T/P	IV	47	T/P	IV
Sg. Sengkuang		1	36	T/P	IV	57	T/P	III	
Sg. Tampoi		1	47	T/P	IV	52	T/P	III	
Johor / N.Sembilan / Pahang	Muar	Sg. Sarang Buaya	1	53	T/P	III	58	T/P	III
Pahang / Johor	Endau	Sg. Jebong	1	60	ST/SP	III	59	T/P	III
		Sg. Singol	1	71	ST/SP	III	59	T/P	III

**Jadual 3.4** menunjukkan sebanyak 22 daripada 33 sungai tercemar masih tergolong dalam Kelas III manakala 11 sungai adalah dalam Kelas IV. Berdasarkan BOD, satu sungai diklasifikasikan sebagai Kelas III, 12 sungai sebagai Kelas IV manakala 20 adalah Kelas V. Dari segi NH<sub>3</sub>-N pula, dua sungai tergolong dalam Kelas II, 13 sungai Kelas IV, dan 18 sungai adalah Kelas V. Dari segi SS, sebanyak 14 sungai telah diklasifikasikan sebagai Kelas I, 15 sungai Kelas II, dan empat adalah Kelas III.

**Table 3.4** shows that out of the 33 polluted rivers, 22 rivers were classified as Class III, while 11 rivers as Class IV. In terms of BOD, one river was classified as Class III, 12 rivers as Class IV and 20 rivers as Class V. In terms of NH<sub>3</sub>-N, two rivers were classified as Class II, 13 as Class IV and 18 rivers as Class V. In terms of SS, 14 rivers were classified as Class I, 15 rivers as Class II, and four rivers as Class III.

**Jadual 3.4 Malaysia: Sungai Tercemar dan Kelas Kualiti Air Berdasarkan BOD, AN dan SS, 2015**  
**Table 3.4 Malaysia: The Polluted Rivers and Classes Based on BOD, AN and SS, 2015**

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	STATUS 2015		KELAS BERDASARKAN: CLASS BASED ON:		
			IKA WQI	KELAS CLASS	BOD	AN	SS
Kedah	Merbok	Sg. Petani	53	III	IV	V	I
P.Pinang / Kedah	Perai	Sg. Kereh	56	III	V	V	II
		Sg. Pertama	50	IV	V	IV	II
P.Pinang	Pinang	Sg. Pinang	54	III	IV	V	I
		Sg. Jelutong	49	IV	V	V	I
	Juru	Sg. Rambai	52	III	V	V	II
		Sg. Jawi	50	IV	V	IV	II
Selangor / WP Kuala Lumpur	Klang	Sg. Toba	58	III	V	V	II
		Sg. Air Busuk	56	III	V	V	I
		Sg. Kerayong	56	III	V	V	I
		Sg. Kuyoh	56	III	IV	V	I
Melaka	Seri Melaka	Sg. Seri Melaka	58	III	IV	V	II
Johor	Batu Pahat	Sg. Semberong	57	III	III	IV	I
		Sg. Simpang Kanan	56	III	IV	IV	I
	Danga	Sg. Danga	51	IV	IV	V	II
	Johor	Sg. Semenchu	45	IV	V	IV	III
	Kaw. Pasir Gudang	Sg. Masai	57	III	IV	V	I
		Sg. Perembi	46	IV	V	V	II
		Sg. Buluh	42	IV	V	IV	II
		Sg. Tukang Batu	40	IV	V	V	I
	Kempas	Sg. Kempas	59	III	V	IV	II
	Pontian Besar	Sg. Ayer Merah	37	IV	V	IV	II
	Pulai	Sg. Ulu Choh	59	III	V	V	II
	Sanglang	Sg. Sanglang	59	III	IV	II	III
	Segget	Sg. Segget	49	IV	V	V	I

Jadual 3.4 Malaysia: Sungai Tercemar dan Kelas Kualiti Air Berdasarkan BOD, AN dan SS, 2015  
 Table 3.4 Malaysia: The Polluted Rivers and Classes Based on BOD, AN and SS, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	STATUS 2015		KELAS BERDASARKAN: CLASS BASED ON:		
			IKA WQI	KELAS CLASS	BOD	AN	SS
	Skudai	Sg. Melana	59	III	IV	IV	II
	Tebrau	Sg. Plentong	57	III	IV	V	II
		Sg. Sengkuang	57	III	V	IV	I
		Sg. Tampoi	52	III	V	IV	I
	Tebrau	Sg. Sebulung	47	IV	V	V	I
Johor / N.Sembilan / Pahang	Muar	Sg. Sarang Buaya	58	III	V	II	II
Pahang / Johor	Endau	Sg. Jebong	59	III	IV	IV	III
		Sg. Singol	59	III	IV	IV	III

### Pengawasan Kualiti Air Sungai Automatik

Pada tahun 2015, stesen pengawasan kualiti air sungai automatik di Sg. Rajang, Sg. Jinjang dan Sg. Sarawak telah dihentikan operasi masing-masing pada bulan Mei, Jun dan Ogos setelah ditempatkan di lokasi baru yang lebih strategik khusus bagi mengawasi kualiti air di hulu muka sauk loji rawatan air iaitu di Sg. Langat (Batu 11, Cheras dan Dengkil), serta Sg. Semenyih. **Rajah 3.2** menunjukkan lokasi 13 stesen pengawasan sungai automatik serta takat pengambilan air yang disenaraikan seperti dalam **Jadual 3.5**.

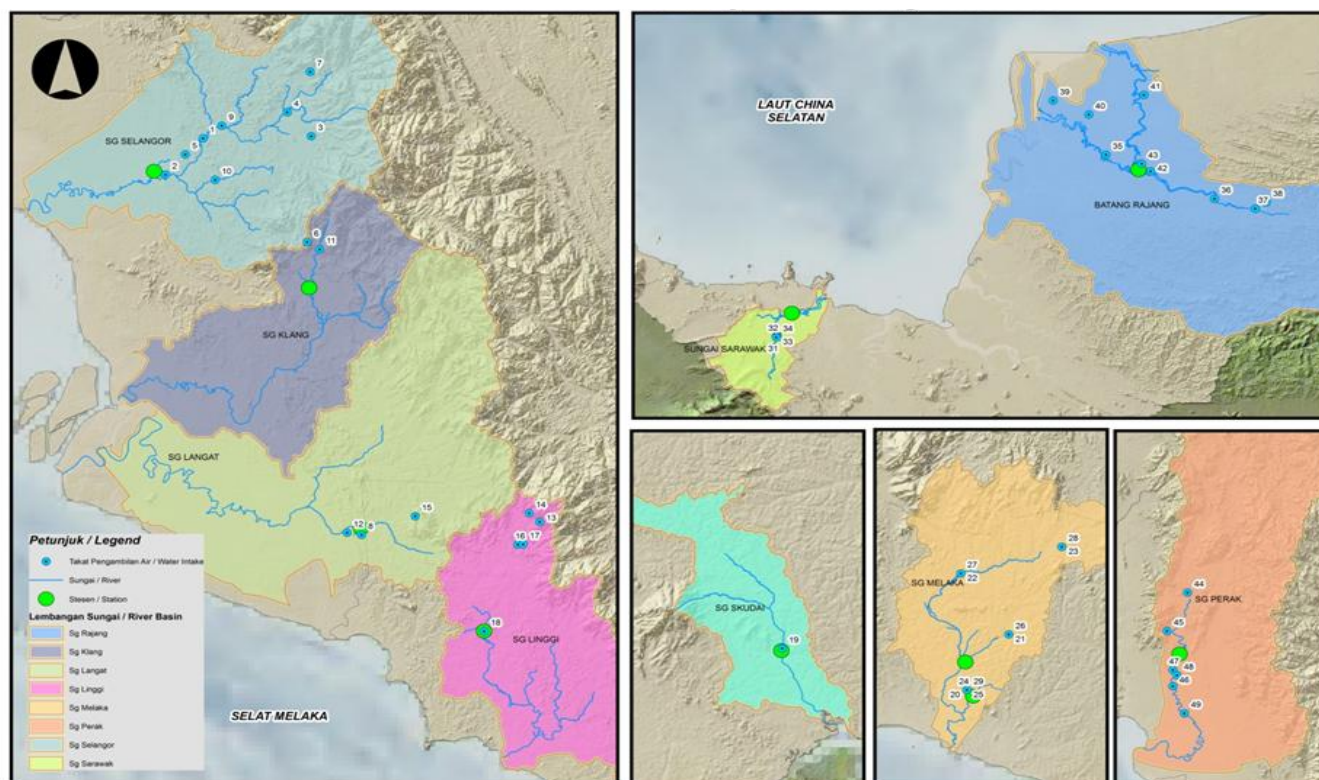
Oksigen Terlarut adalah penunjuk kepada kehadiran BOD yang disebabkan oleh bahan pencemar organik. Berdasarkan Oksigen Terlarut, 61.2% daripada bacaan yang direkodkan di stesen automatik di Sg. Perak adalah berada dalam julat Kelas II, diikuti oleh Sg. Rajang (60.1%), Sg. Semenyih (48.3%), Sg. Langat (Cheras) (38.7%), Sg. Labu (33.9%), Sg. Linggi (28.6%), Sg. Melaka (21.3%), Sg. Sarawak (16.2%), Sg. Skudai (6.3%), Sg. Selangor (6.2%), Sg. Putat (5.1%), Sg. Langat (Dengkil) (3.1%), manakala hanya 2.1% daripada data yang direkodkan di stesen automatik di Sg. Jinjang adalah berada dalam Kelas tersebut (**Rajah 3.3**).

### Continuous River Water Quality Monitoring

*In the year 2015, automatic river water quality monitoring stations at Sg. Rajang, Sg. Jinjang, and Sg. Sarawak were de-operated in May, Jun, and August respectively and were relocated at more strategic locations for the purpose of river water quality monitoring at upstream of water intakes in Sg. Langat (Batu 11, Cheras and Dengkil), and Sg. Semenyih. **Figure 3.2** shows the location of the 13 continuous river monitoring stations and subsequent water intakes as listed in **Table 3.5**.*

*The dissolved oxygen is an indicator of BOD strength exerted by organic pollutants. In terms of dissolved oxygen level, about 61.2% of the data recorded at Sg. Perak were within Class II of the NWQS, followed by Sg. Rajang (60.1%), Sg. Semenyih (48.3%), Sg. Langat (Cheras) (38.7%), Sg. Labu (33.9%), Sg. Linggi (28.6%), Sg. Melaka (21.3%), Sg. Sarawak (16.2%), Sg. Skudai (6.3%), Sg. Selangor (6.2%), Sg. Putat (5.1%), Sg. Langat (Dengkil) (3.1%) Meanwhile, only 2.1% of the data recorded at Sg. Jinjang were within the Class II limit (**Figure 3.3**).*





Rajah 3.2: Stesen Pengawasan Sungai Automatik dan Takat Pengambilan Air  
 Figure 3.2: Continuous Water Quality Stations and Water Intakes

Jadual 3.5 Senarai Takat Pengambilan Air dalam Kawasan Tadahan seperti dalam Rajah 3.2  
 Table 3.5 Water Intake List within catchments as in Figure 3.2

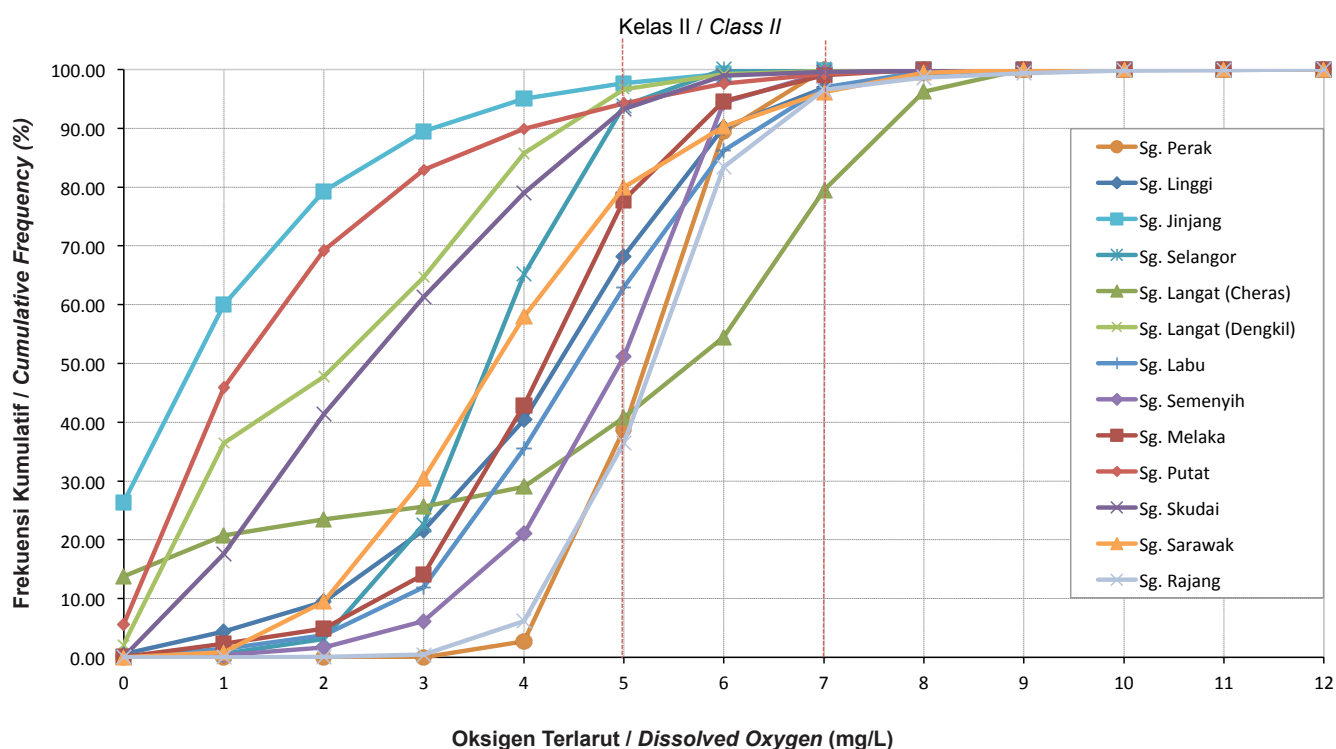
Negeri State	Sungai River	Skim Perbekalan Supply Scheme
Selangor	Sungai Selangor	SSP 2, Bukit Badong
	Sungai Selangor	Rantau Panjang
	Sungai Batang Kali	Batang Kali
	Sungai Selangor	Rasa
	Sungai Selangor	SSP 3, Bukit Badong
	Sungai Rangkap	Sungai Rangkap
	Sungai Kubu	Kuala Kubu Bharu
	Sungai Labu	Sungai Labu
	Sungai Tenggi	Sungai Tenggi
	Sungai Darah	Sungai Buaya
	Empangan Batu	Sungai Batu
	Sungai Labu	Salak Tinggi

Jadual 3.5 Senarai Takat Pengambilan Air dalam Kawasan Tadahan seperti dalam Rajah 3.2  
 Table 3.5 Water Intake List within catchments as in Figure 3.2

Negeri State	Sungai River	Skim Perbekalan Supply Scheme
N. Sembilan	Sg Batang Penar	Pantai
	Sg. Ngoi-Ngoi	Ngoi-ngoi
	Sg Mahang	Mahang
	Sg Batang Penar	Sungai Terip
	Empangan Sg. Terip	Terip
	Sg. Linggi	Sg. Linggi
Johor	Sg. Skudai	Johor Bahru
Melaka	Sg. Melaka	Jasin, Melaka Tengah dan Alor Gajah
	Empangan Durian Tunggal	Melaka Tengah, Alor Gajah dan Jasin
	Sg. Melaka (Bunded Storage)	Melaka Tengah, Alor Gajah dan Jasin
	Sg. Kesang	Jasin dan Merlimau
	Sg. Muar	Melaka Tengah, Alor Gajah dan Jasin
	Sg. Melaka	Jasin, Melaka Tengah dan Alor Gajah
	Empangan Durian Tunggal	Melaka Tengah, Alor Gajah dan Jasin
	Sg. Melaka (Bunded Storage)	Melaka Tengah, Alor Gajah dan Jasin
	Sg. Kesang	Jasin dan Merlimau
	Sg. Muar	Melaka Tengah, Alor Gajah dan Jasin
Sarawak	Sg. Sarawak Kiri	Weir Batu Kitang
	Sg. Sarawak Kiri	Sungai Sarawak (Sarawak Kiri-Intake-Takat Pengambilan No. 1)
	Sg. Sarawak Kiri	Sungai Sarawak (Sarawak Kiri-Intake-Takat Pengambilan No. 2)
	Sg. Sarawak Kiri	Sungai Sarawak (Sarawak Kiri-Intake-Takat Pengambilan No. 3)
	Sg. Sarawak Kiri	Sungai Sarawak (Sarawak Kiri-Intake-Takat Pengambilan No. 4)
	Sg.Bawang Assan	Bawang Assan
	Sg.Kanowit	Kanowit
	Batang Rajang	Ng.Dap
	Sg.Kabah	Ng.Tada
	Sg.Daro	Daro
	Sg. Nanggar	Kut
	Sg.Rasau	Rasau
	Batang Rajang	Sibu
Batang Rajang	Sibu	

Jadual 3.5 Senarai Takat Pengambilan Air dalam Kawasan Tadahan seperti dalam Rajah 3.2  
 Table 3.5 Water Intake List within catchments as in Figure 3.2

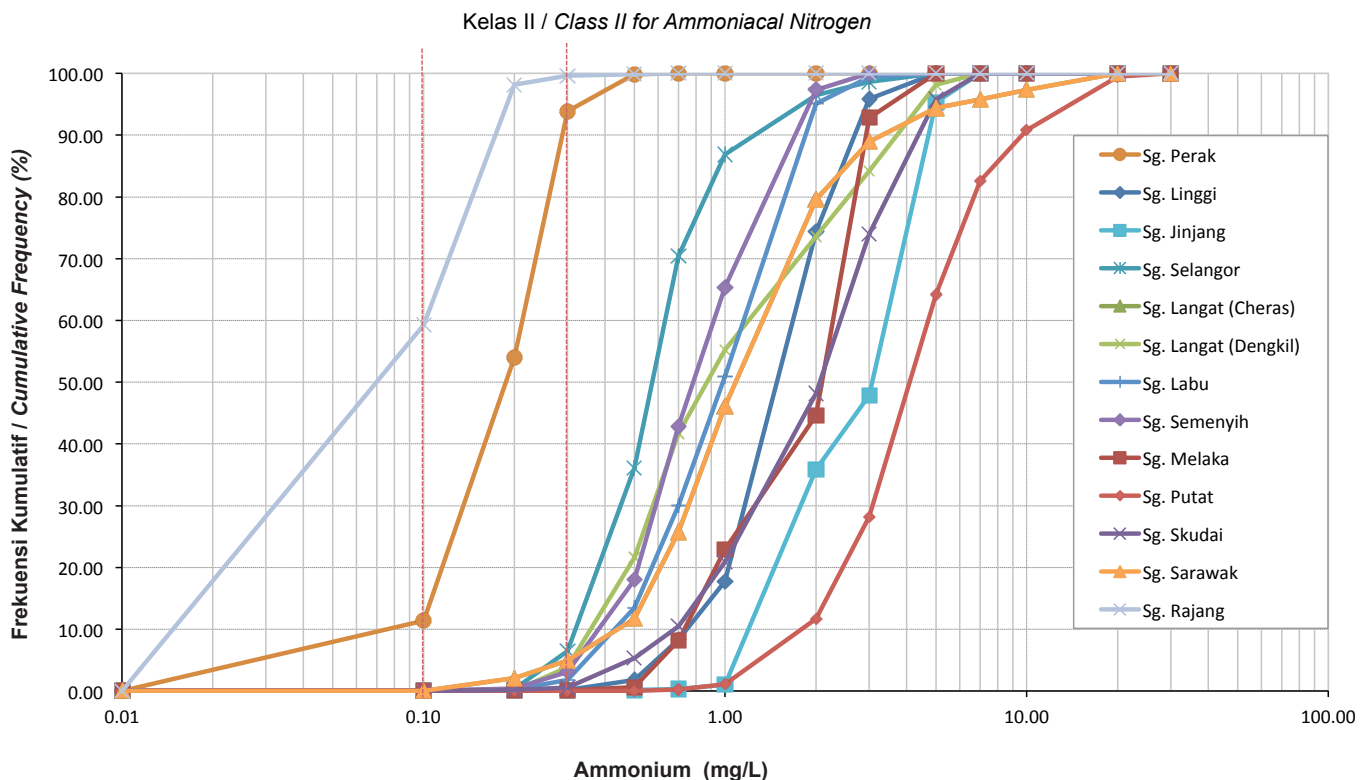
Negeri State	Sungai River	Skim Perbekalan Supply Scheme
Perak	Sg. Perak (dalam kawasan tadahan LPA Kg. Gajah)	Kota Lama Kiri
	Sg. Guar	Manong
	Sg. Perak (dalam kawasan tadahan LPA Kg. Gajah)	Teluk Kepayang
	Sg. Perak (dalam kawasan tadahan LPA Kg. Gajah)	Kampung Paloh
	Sg. Perak (dalam kawasan tadahan LPA Kg. Gajah)	BB Seri Iskandar
	Sg. Perak	Kampung Gajah



Rajah 3.3 Perbandingan Frekuensi Kumulatif bagi 13 Stesen-stesen CWQM untuk Oksigen Terlarut, 2015  
 Figure 3.3 Comparison of Cumulative Frequency for 13 CWQM Stations for Dissolved Oxygen, 2015

Ammonium adalah satu bentuk ammonia yang telah terion. Pengukuran ammonium memberi petunjuk kepada potensi kehadiran pencemar ammonia atau ammonia nitrogen dalam air sungai apabila pH dan suhu air berubah. Sebanyak 82.5% daripada bacaan ammonium yang direkodkan di Sg. Perak adalah dalam Kelas II berdasarkan julat ammonia nitrogen diikuti dengan Sg. Rajang (40.4%), Sg. Sarawak (12.2%), Sg. Selangor (6.5%), Sg. Langat (Cheras) (4.9%), Sg. Langat (Dengkil (3.9%), Sg. Semenyih (3.0%), Sg. Labu (1.8%), manakala kurang daripada 1% data ammonium daripada Sg. Skudai, Sg. Linggi, Sg. Melaka, Sg. Jinjang, dan Sg. Putat berada dalam Kelas tersebut (Rajah 3.4).

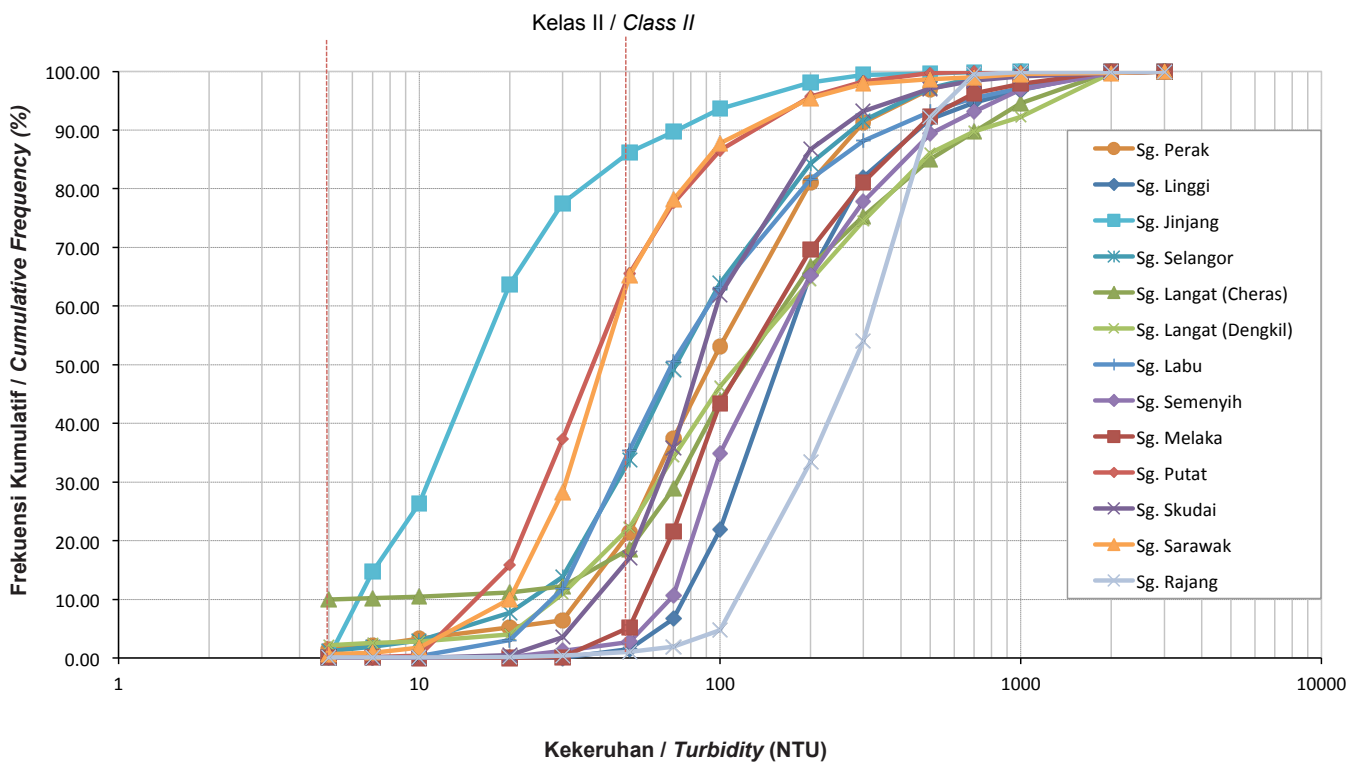
The ammonium is an ionized form of ammonia. The measurement of ammonium indicates the potential to form ammonia or ammoniacal nitrogen pollutants in rivers when the pH and temperature change. 82.5% of the ammonium levels recorded at Sg. Perak were within Class II limit based on ammoniacal nitrogen followed by Sg. Rajang (40.4%), Sg. Sarawak (12.2%), Sg. Selangor (6.5%), Sg. Langat (Cheras) (4.9%), Sg. Langat (Dengkil (3.9%), Sg. Semenyih (3.0%), Sg. Labu (1.8%) Meanwhile, less than 1 % of ammonium from Sg. Skudai, Sg. Linggi, Sg. Melaka, Sg. Jinjang, and Sg. Putat were within the Class II limits (Figure 3.4).



Rajah 3.4 Perbandingan Frekuensi Kumulatif bagi 13 Stesen-stesen CWQM untuk Ammonium, 2015  
 Figure 3.4 Comparison of Cumulative Frequency for 13 CWQM Stations for Ammonium Concentration, 2015

Kekeruhan digunakan sebagai penunjuk kehadiran Pepejal Terampai di dalam sungai. Sebanyak 77.2% daripada keseluruhan data kekeruhan yang direkodkan di stesen automatik Sg. Jinjang adalah berada dalam julat Kelas II diikuti oleh Sg. Putat (65.5%), Sg. Sarawak (64.5%), Sg. Sarawak (64.5%), Sg. Labu (35.4%), Sg. Selangor (32.6%), Sg. Langat (Dengkil) (20.1%), Sg. Perak (19.8%), dan Sg. Skudai (17.0%) manakala kurang daripada 10% daripada bacaan kekeruhan di Sg. Langat (Cheras), Sg. Melaka, Sg. Semenyih, Sg. Linggi, dan Sg. Rajang berada dalam julat tersebut (**Rajah 3.5**).

*Turbidity is used to indicate the presence of suspended solids in a river. Of all data recorded at automatic river water quality monitoring stations, 77.2% of turbidity data for Sg. Jinjang were within Class II followed by Sg. Putat (65.5%), Sg. Sarawak (64.5%), Sg. Sarawak (64.5%), Sg. Labu (35.4%), Sg. Selangor (32.6%), Sg. Langat (Dengkil) (20.1%), Sg. Perak (19.8%), dan Sg. Skudai (17.0%). Meanwhile, less than 10% of turbidity data for Sg. Langat (Cheras), Sg. Melaka, Sg. Semenyih, Sg. Linggi, and Sg. Rajang were within Class II limit (**Figure 3.5**).*



Rajah 3.5 Perbandingan Frekuensi Kumulatif bagi 13 Stesen-stesen CWQM untuk Kekeruhan, 2015  
 Figure 3.5 Comparison of Cumulative Frequency for 13 CWQM Stations for Turbidity, 2015



pH adalah ukuran bagi keasidan dan kealkalian mengikut skala pH. Semua bacaan pH yang direkodkan oleh stesen automatik di Sg. Jinjang, Sg. Langat (Dengkil), dan Sg. Rajang adalah dalam julat Kelas II diikuti Langat (Cheras) (99.9%), Sg. Labu (98.6%), Sg. Skudai (97.1%), Sg. Linggi (95.2%), Sg. Perak (93.3%), Sg. Semenyih (93.2%), Sg. Sarawak (91.9%), Sg. Melaka (86.9%), Sg. Putat (82.1%) manakala, 76.6% daripada data pH yang direkodkan di stesen automatik di Sg. Selangor berada dalam Kelas tersebut (Rajah 3.6).

*pH is a measurement of acidity and alkalinity based on pH scale. All of pH data recorded by automatic water quality monitoring stations at Sg. Jinjang, Sg. Langat (Dengkil), and Sg. Rajang were within Class II followed by Sg. Langat (Cheras) (99.9%), Sg. Labu (98.6%), Sg. Skudai (97.1%), Sg. Linggi (95.2%), Sg. Perak (93.3%), Sg. Semenyih (93.2%), Sg. Sarawak (91.9%), Sg. Melaka (86.9%), Sg. Putat (82.1%). Meanwhile, only 76.6% of pH data from automatic station at Sg. Selangor were within the limit of Class II (Figure 3.6).*

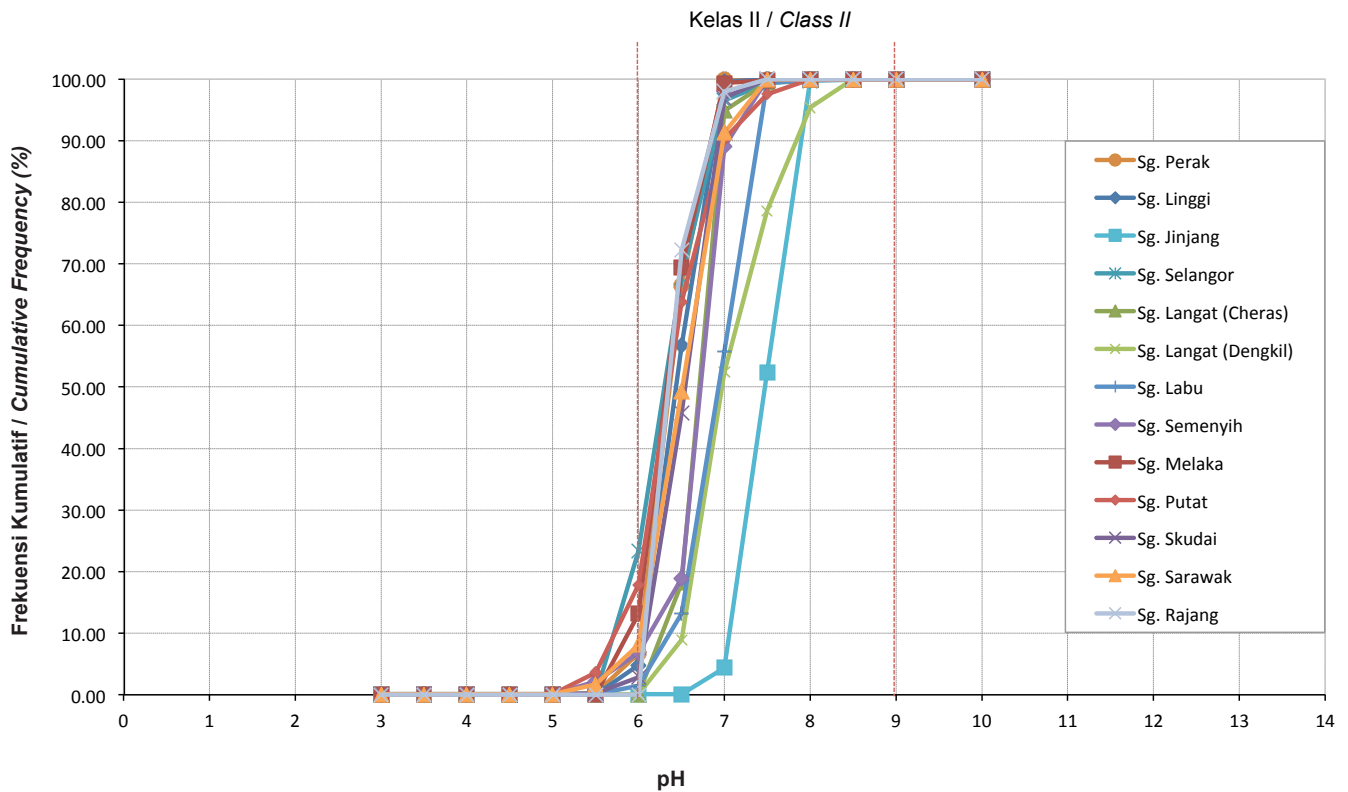


Figure 3.6 Comparison of Cumulative Frequency for 10 CWQM Stations for pH, 2015  
 Rajah 3.6 Perbandingan Frekuensi Kumulatif bagi 10 Stesen-stesen CWQM untuk pH, 2015

## TREN PENCEMARAN AIR SUNGAI

### TREND IN RIVER WATER POLLUTION

Kualiti air sungai yang ditentukan dari segi IKA telah menunjukkan peningkatan pada tahun 2015. Peratus bilangan sungai yang dikategorikan sebagai bersih telah meningkat kepada 58% pada tahun 2015 berbanding 52% tahun sebelumnya. Peratus bilangan sungai yang dikategorikan sebagai tercemar telah menurun daripada 9% kepada 7% pada tahun 2015. Trend ini adalah ditunjukkan oleh **Rajah 3.1**.

Berdasarkan sub-indeks BOD, tiada sungai yang dikategorikan sebagai bersih pada tahun 2015 (**Rajah 3.7**). Walau bagaimanapun, bilangan sungai yang tercemar dari segi sub-indeks BOD telah menurun daripada 366 pada tahun 2014 kepada 349 sungai pada tahun 2015. Kemerosotan kualiti air sungai dari segi BOD ini adalah disebabkan oleh pelepasan bahan buangan yang bersifat organik daripada pelbagai punca seperti air sisa industri, serta aktiviti komersil dan domestik.

Dari segi sub-indeks  $\text{NH}_3\text{-N}$  pula, bilangan sungai bersih telah menurun daripada 155 pada tahun 2014 kepada 139 pada tahun 2015 (**Rajah 3.8**). Walau bagaimanapun, bilangan sungai yang tercemar dari segi sub-indeks  $\text{NH}_3\text{-N}$  telah menurun daripada 151 pada tahun 2014 kepada 136 sungai pada tahun 2015. Kemerosotan kualiti air sungai yang disebabkan oleh  $\text{NH}_3\text{-N}$  boleh dikaitkan dengan pelepasan air sisa kumbahan manusia dan haiwan yang tidak diolah dan diolah ke dalam air sungai secara berterusan.

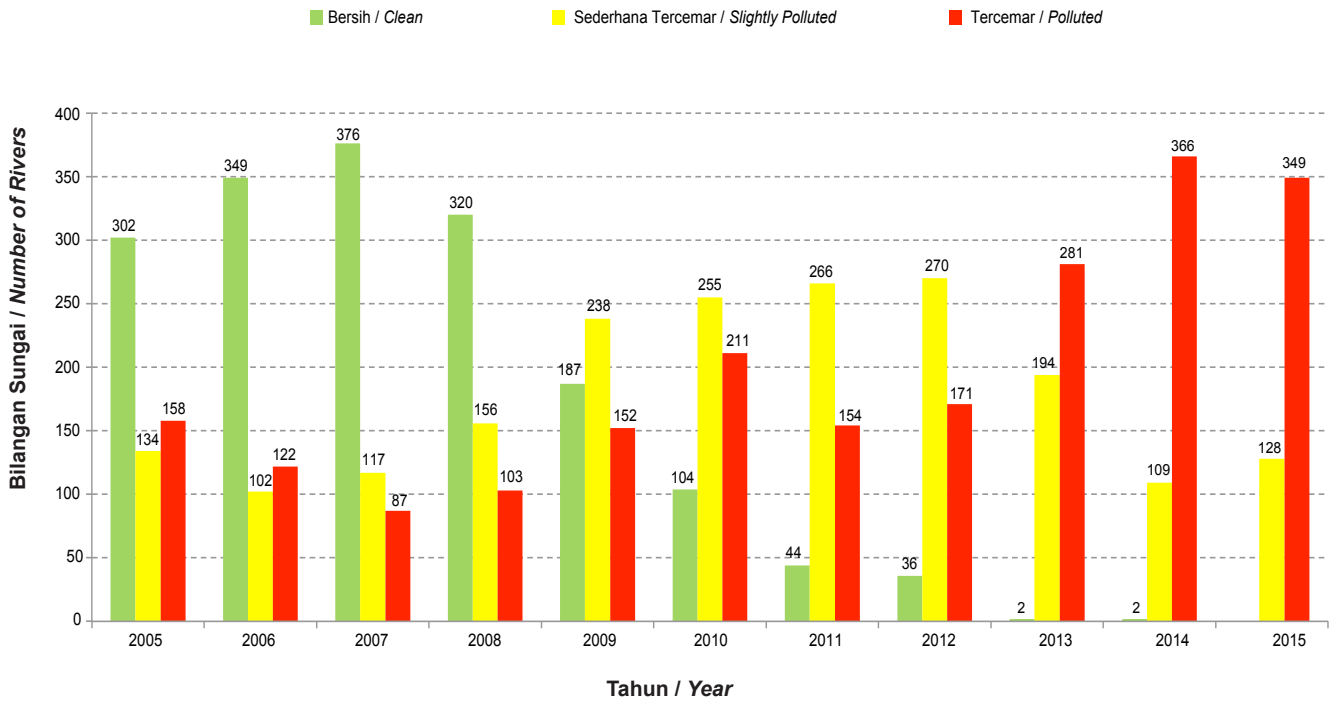
Dari segi sub-indeks SS pula, bilangan sungai yang dikategorikan bersih telah meningkat daripada 371 pada tahun 2014 kepada 379 pada tahun 2015 (**Rajah 3.9**). Bilangan sungai yang dikategorikan sebagai tercemar dari segi sub-indeks SS pula telah menurun kepada 50 berbanding 58 sungai pada tahun lepas. Peningkatan kualiti air sungai dari segi SS tersebut telah disebabkan oleh kawalan berterusan ke atas aktiviti kerja tanah dan pembukaan tanah.

*The river water quality in terms of WQI had shown an improvement in 2015. The percentage of clean rivers has increased to 58% in 2015 compared to the 52% in the previous year. The percentage of polluted river has decreased from 9% to 7% in 2015. These trends are shown in **Figure 3.1**.*

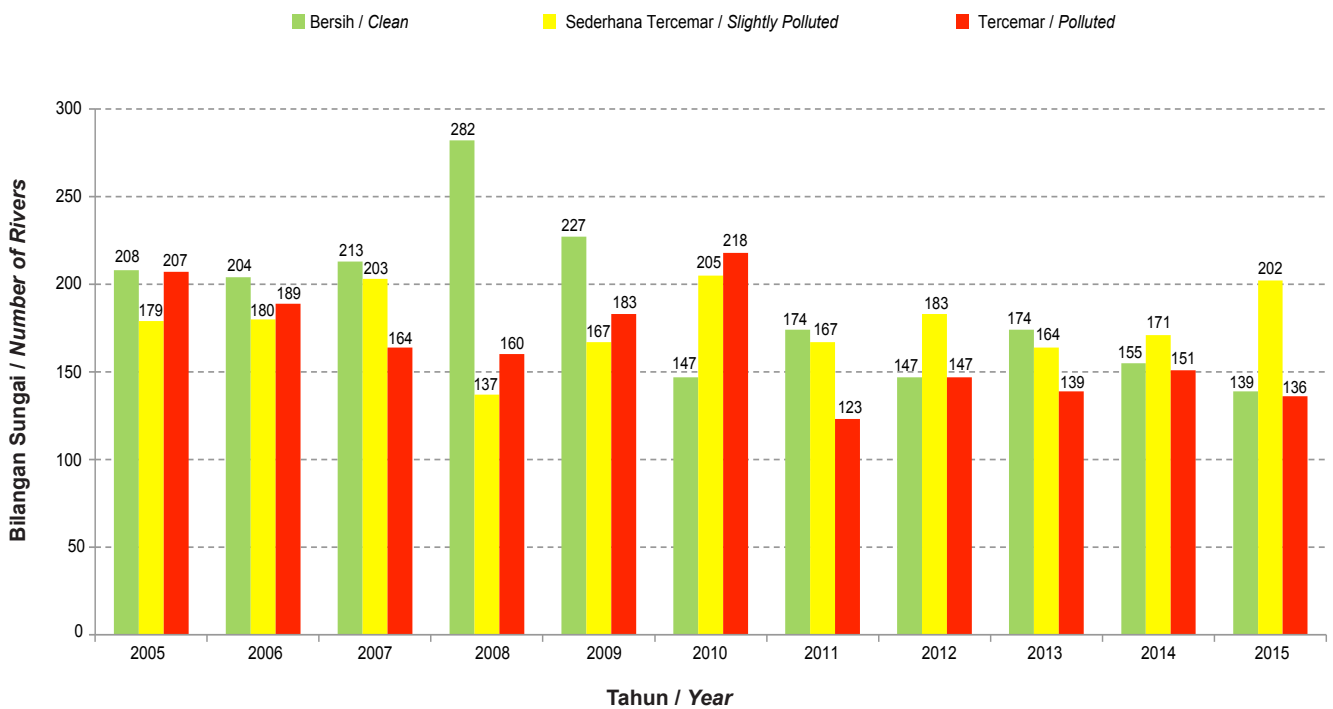
*In terms of BOD sub-index, none of the monitored rivers has been categorized as clean in 2015 (**Figure 3.7**). However, the number of polluted rivers in terms of BOD sub-index has decreased from 366 in 2014 to 349 rivers in 2015. The degradation of river water quality in terms of BOD may have been continuously attributed to various sources of organic pollutants including wastewater from industrial, domestic and commercial activities.*

*In term of  $\text{NH}_3\text{-N}$  sub-index, the number of clean rivers has decreased from 155 in 2014 to 139 rivers in 2015 (**Figure 3.8**). However, the number of polluted rivers in terms of  $\text{NH}_3\text{-N}$  has decreased from 151 in 2014 to 136 rivers in 2015. The degradation of river water quality caused by  $\text{NH}_3\text{-N}$  can be associated with the continuous discharge of treated and untreated sewage into the rivers.*

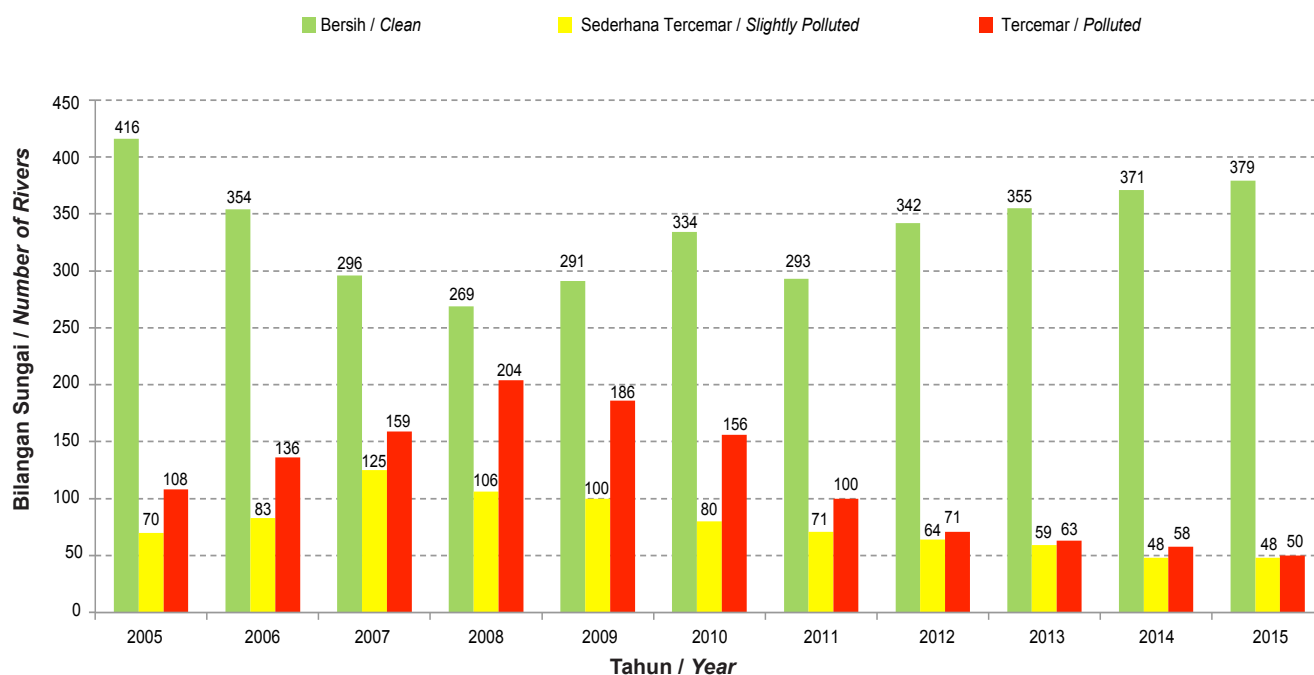
*In term of SS sub-index, the number of clean rivers has increased from 371 in 2014 to 379 in 2015 (**Figure 3.9**). The number of polluted rivers in terms of SS sub-index has decreased to 50 compared to 58 rivers in the previous year. The improvement in river water quality can be attributed to the continuous control against improper earthworks and land clearing activities.*



Rajah 3.7 Malaysia: Tren Kualiti Air Sungai Berdasarkan Sub-Indeks BOD (2005- 2015)  
 Figure 3.7 Malaysia: River Water Quality Trend Based on BOD Sub-Index (2005-2015)



Rajah 3.8 Malaysia: Tren Kualiti Air Sungai Berdasarkan Sub-Indeks AN (2005- 2015)  
 Figure 3.8 Malaysia: River Water Quality Trend Based on AN Sub-Index (2005-2015)



Rajah 3.9 Malaysia: Tren Kualiti Air Sungai Berdasarkan Sub-Indeks SS (2005- 2015)  
 Figure 3.9 Malaysia: River Water Quality Trend Based on SS Sub-Index (2005-2015)

## Logam Berat dalam Sungai

Analisis kandungan beberapa jenis logam berat dalam air sungai telah dilakukan ke atas Raksa (Hg), Arsenik (As), Kadmium (Cd), Kromium (Cr), Plumbum (Pb), dan Zink (Zn). Pada tahun 2015, kesemua sampel air sungai telah menunjukkan kandungan logam Cd, Pb, dan Zn pada tahap Kelas II. Sebanyak 99.87% daripada sampel air sungai yang diuji telah menunjukkan kandungan Cr dalam Kelas II, diikuti dengan Hg (99.45%) dan As (98.63%).

## Kualiti Air Sungai di Hulu Muka Sauk

Pada tahun 2015, 46 (84%) daripada 55 stesen pengawasan kualiti air di hulu muka sauik telah menunjukkan indeks kualiti air bersih sementara 9 (16%) stesen dikategorikan sebagai sederhana tercemar. Berdasarkan IKA juga, tiga (5.5%) stesen telah dikategorikan sebagai kelas I dan 48 (87.3%) adalah Kelas II manakala empat (7.2%) adalah Kelas III. **Jadual 3.6** menunjukkan status kualiti air di stesen hulu muka sauik terpilih berdasarkan IKA.

## Heavy Metals in Rivers

Heavy metals were analysed for Mercury (Hg), Arsenic (As), Cadmium (Cd), Chromium (Cr), Plumbum (Pb), and Zinc (Zn). In 2015, all of the water samples have shown that the concentration of Cd, Pb, and Zn were within Class II limit. About 99.87% of the water sample have shown the concentrations of Cr within Class II, followed by Hg (99.45%) and As (98.63%).

## River Water Quality Upstream Water Intakes

In 2015, 46 (84%) from 55 monitoring stations upstream of water intakes have shown clean water quality while 9 (16%) other stations were categorized as slightly polluted. Based on overall WQI, three (5.5%) stations were categorized as Class I, 48 (87.3%) were Class II while four (7.2%) were Class III. **Table 3.6** shows the water quality of the selected water intake stations based on WQI.

Jadual 3.6 Malaysia: Status Kualiti Air di Hulu Muka Sauk, 2015  
Table 3.6 Malaysia: Water Quality Status of Upstream Water Intakes, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					IKA WQI	KATEGORI CATEGORY	KELAS CLASS	IKA WQI	KATEGORI CATEGORY	KELAS
Perlis	Perlis	Sg. Terusan Mada	2PS13	Loji Rawatan Air Arau Fasa IV	85	B/C	II	86	B/C	II
			2PS14	Loji Rawatan Air TTPC, Sg. Baru	82	B/C	II	85	B/C	II
Kedah	Kedah	Sg. Ahning	2KD11	Padang Sanai	87	B/C	II	91	B/C	II
		Sg. Pdg Terap	2KD12	Kuala Nerang	85	B/C	II	90	B/C	II
		Sg. Temin	2KD10	Changloon	78	ST/SP	II	85	B/C	II
Kedah (Langkawi)	Melaka	Sg. Melaka	2LG05	Ulu Melaka	81	B/C	II	87	B/C	II
		Sg. Saga	2LG06	Padang Saga	89	B/C	II	82	B/C	II
Kedah/ P.Pinang	Muda	Sg. Muda	2MD16	Jeneri	86	B/C	II	84	B/C	II
			2MD17	Jeniang	82	B/C	II	89	B/C	II
			2MD18	Bukit Selambau	83	B/C	II	86	B/C	II
			2MD20	Pinang Tunggal	86	B/C	II	87	B/C	II
		Sg. Nami	2MD21	Nami	88	B/C	II	88	B/C	II
		Sg. Sedim	2MD19	Bikan	89	B/C	II	83	B/C	II
P.Pinang	Pinang	Sg. Satu	2PG12	Batu Feringgi	93	B/C	I	94	B/C	I
Perak	Kurau	Sg. Air Hitam	2KU07	Loji Rawatan Air Jelai	92	B/C	II	92	B/C	II
	Perak	Sg. Manong	2PK62	Loji Rawatan Air Manong	93	B/C	I	92	B/C	II
		Sg. Sauk	2PK61	Loji Rawatan Air Sauk	89	B/C	II	94	B/C	I
		Sg. Tesong	2PK64	Loji Rawatan Air Sg. Klah	93	B/C	I	92	B/C	II
		Sg. Woh	2PK63	Loji Rawatan Air Kuala Woh	93	B/C	I	92	B/C	II
	Sepetang	Sg. Batu Tegoh	2SP18	Loji Rawatan Air Bukit Larut	92	B/C	II	91	B/C	II
Selangor/ Perak	Bernam	Sg. Gelinting	1BM15	Loji Rawatan Air Ulu Slim	93	B/C	I	92	B/C	II
		Sg. Trolak	1BM14	Loji Rawatan Air Trolak Timur	95	B/C	I	92	B/C	II
Selangor/ Putrajaya/ N.Sembilan	Langat	Sg. Batang Labu	1L26	Loji Rawatan Air Salak Tinggi	72	ST/SP	III	78	ST/SP	II
		Sg. Semenyih	1L09	Loji Rawatan Air Semenyih	74	ST/SP	III	73	ST/SP	III
Selangor/ Wpkl	Klang	Sg. Gombak	1K53	Loji Rawatan Air Gombak	94	B/C	I	90	B/C	II
Melaka	Kesang	Sg. Chin-Chin	1KA08	Muka sauik Loji Rawatan Air Chin-chin	81	B/C	II	84	B/C	II
Johor	Batu Pahat	Sg. Semberong Dam	3BP27	Semberong Dam	70	ST/SP	III	79	ST/SP	II
	Benut	Sg. Machap Dam	3BN10	Machap Dam	83	B/C	II	87	B/C	II
	Pulai	Sg. Pulai Dam	3PU04	Pulai Dam	88	B/C	II	91	B/C	II

Jadual 3.6 Malaysia: Status Kualiti Air di Hulu Muka Sauk, 2015  
 Table 3.6 Malaysia: Water Quality Status of Upstream Water Intakes, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					IKA WQI	KATEGORI CATEGORY	KELAS CLASS	IKA WQI	KATEGORI CATEGORY	KELAS
Johor/ N. Sembilan/ Pahang	Muar	Sg. Jelai	1MN23	Loji Rawatan Air Dangi	83	B/C	II	86	B/C	II
		Sg. Jementah	3MR39	Loji Rawatan Air Jementah	90	B/C	II	93	B/C	I
		Sg. Muar	3MR38	Loji Rawatan Air Gombang	75	ST/SP	III	77	ST/SP	II
Pahang	Bertam	Sg. Bertam	2CH15	Loji Rawatan Air Habu	93	B/C	I	91	B/C	II
		Sg. Terla	2CH14	Loji Rawatan Air Kuala Terla	90	B/C	II	89	B/C	II
		Sg. Ulong	2CH16	Brinchang Dam	88	B/C	II	90	B/C	II
Pahang/ Johor	Endau	Sg. Kahang	3ED38	Jalan Felda Kahang Timur, Kluang	88	B/C	II	91	B/C	II
Pahang/ N.Sembilan	Pahang	Sg. Gapoi	4PH95	Muka sauk Loji Rawatan Air Gapoi	93	B/C	I	90	B/C	II
		Sg. Jempol	4PH96	Loji Air Sg Jerik	84	B/C	II	87	B/C	II
			4PH97	Loji Air Jengka 3	83	B/C	II	85	B/C	II
		Sg. Mentiga	4PH98	Loji Air Chini	78	ST/SP	II	80	ST/SP	II
		Sg. Triang	4PH93	Loji Rawatan Air Sg. Triang	84	B/C	II	86	B/C	II
Terengganu	Terengganu	Sg. Terengganu	4TE14	Loji Air Serada	85	B/C	II	88	B/C	II
Kelantan	Golok	Sg. Jeduk	4GL10	Syarikat Air Kelantan	85	B/C	II	86	B/C	II
	Kelantan	Sg. Chiku	4KE66	Felda Ciku 2	86	B/C	II	86	B/C	II
		Sg. Kelantan	4KE68	Loji Air Kelar, Pasir Mas	83	B/C	II	87	B/C	II
		Sg. Pehi	4KE67	Loji Air Pahi	85	B/C	II	86	B/C	II
Sabah	Padas	Sg. Padas	72PD04	Water Intake Jabatan Air Beaufort	74	ST/SP	III	77	ST/SP	II
	Papar	Sg. Papar	75PP04	Sekolah Kebangsaan Mandalipau	92	B/C	II	89	B/C	II
			75PP05	Water Intake Kogopon	92	B/C	II	89	B/C	II
Sarawak	Kerian	Sg. Selalang	55SG01	Selangang Water Intake	87	B/C	II	92	B/C	II
	Mukah	Sg. Mukah	58MH05	Mukah Water Intake	66	ST/SP	III	75	ST/SP	III
		Sg. Daro	56DR01	Daro Water Intake	68	ST/SP	III	71	ST/SP	III
	Rajang	Sg. Jemoreng	56JG01	Jemoreng Water Intake	62	ST/SP	III	71	ST/SP	III
		Sg. Pakan	56PN01	Pakan Water Intake	78	ST/SP	II	90	B/C	II
		Sg. Pila Parit	56PL01	Igan Water Intake	66	ST/SP	III	81	B/C	II

Nota/ Note: B/C: Bersih/Clean; ST/SP: Sederhana Tercemar/Slightly Polluted; T/P: Tercemar/Polluted

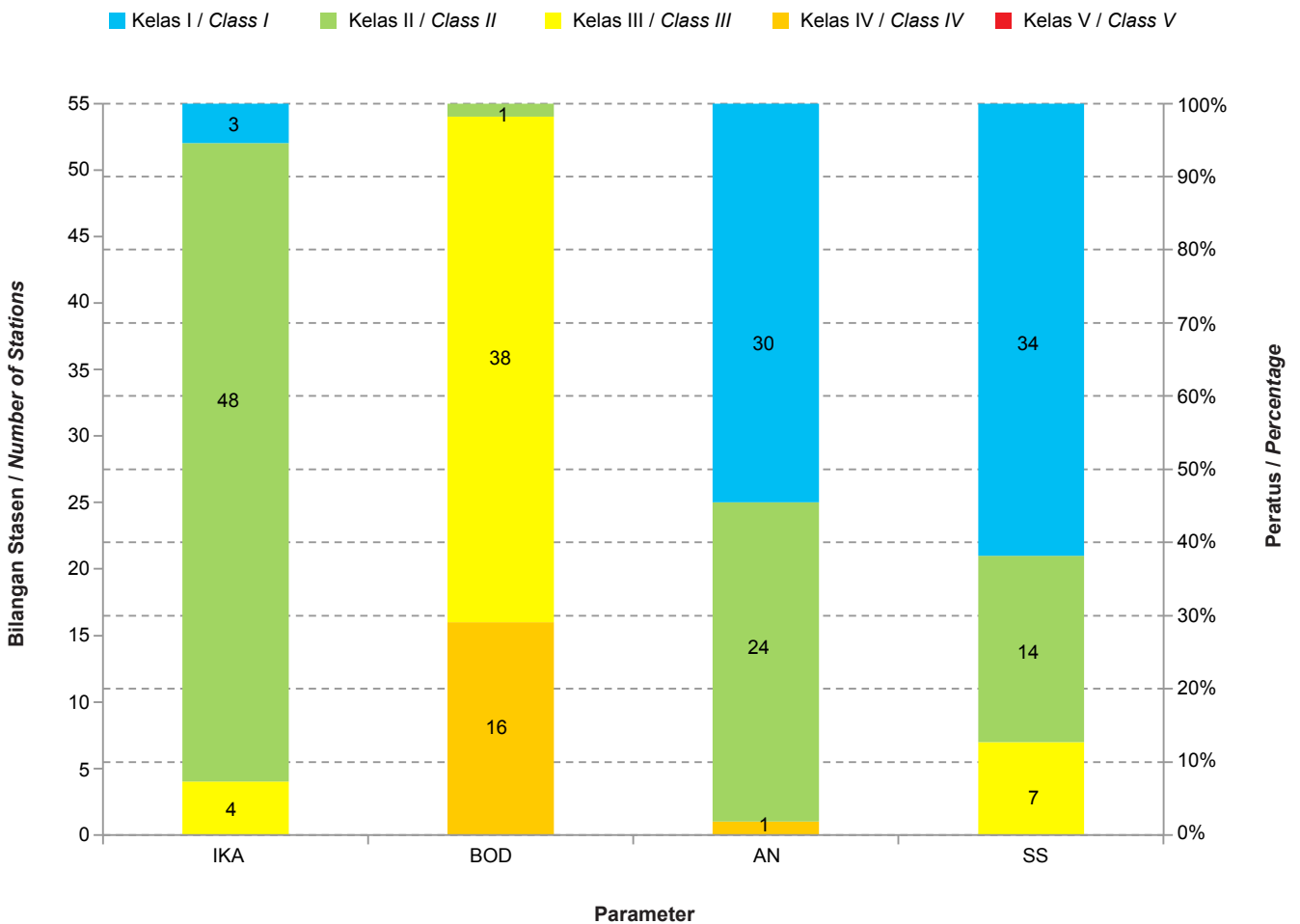


Dari segi BOD, satu stesen menunjukkan kualiti air Kelas II, 38 Kelas III, dan 16 stesen adalah Kelas IV. Berdasarkan NH<sub>3</sub>-N pula, sebanyak 30 stesen menunjukkan kualiti air Kelas I, 24 Kelas II, dan satu stesen Kelas IV sementara dari segi SS, 34 stesen telah dikategorikan sebagai Kelas I, 14 stesen Kelas II, dan tujuh stesen Kelas III.

*In terms of BOD, one station has shown Class II water quality, 38 as Class III, and 16 stations as Class IV. In terms of NH<sub>3</sub>-N, 30 stations showed water quality of Class I, 24 as Class II and one station as Class IV. Meanwhile in terms of SS, 34 stations were categorized as Class I, 14 as Class II, and seven as Class III.*

**Rajah 3.10** menunjukkan peratusan stesen hulu muka sauk berdasarkan kelas kualiti air dan parameter utama. **Jadual 3.7, Jadual 3.8 dan Jadual 3.9** menunjukkan kualiti air sungai di stesen di hulu muka sauk masing-masing berdasarkan sub-indeks BOD, AN dan SS.

*Figure 3.10 shows the percentage of water quality upstream of intake stations in term of classes based on main pollutant parameters. Table 3.7, Table 3.8 and Table 3.9 show the water quality of stations upstream of water intake points based on BOD, AN and SS sub-indexes respectively.*



Rajah 3.10 Kualiti Air Sungai di Stesen di Hulu Muka Sauk, 2015  
 Figure 3.10 River Water Quality at Stations Upstream of Water Intakes, 2015

Jadual 3.7 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks BOD, 2015  
 Table 3.7 Malaysia: Water Quality Status of Upstream Water Intakes Based on BOD Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					Sub-Indeks BOD Sub-Index	KATEGORI CATEGORY	KELAS CLASS	Sub-Indeks BOD Sub-Index	KATEGORI CATEGORY	KELAS CLASS
Perlis	Perlis	Sg. Terusan Mada	2PS13	Loji Rawatan Air Arau Fasa IV	73	P/ T	IV	79	P/ T	III
			2PS14	Loji Rawatan Air TTPC, Sg. Baru	70	P/ T	IV	82	SP/ ST	III
Kedah	Kedah	Sg. Ahning	2KD11	Padang Sanai	80	SP/ ST	III	86	SP/ ST	III
		Sg. Pdg Terap	2KD12	Kuala Nerang	72	P/ T	IV	84	SP/ ST	III
		Sg. Temin	2KD10	Changloon	78	P/ T	III	82	SP/ ST	III
Kedah (Langkawi)	Melaka	Sg. Melaka	2LG05	Ulu Melaka	80	SP/ ST	III	79	P/ T	III
		Sg. Saga	2LG06	Padang Saga	83	SP/ ST	III	73	P/ T	IV
Kedah/ P.Pinang	Muda	Sg. Muda	2MD16	Jeneri	81	SP/ ST	III	81	SP/ ST	III
			2MD17	Jeniang	63	P/ T	IV	84	SP/ ST	III
			2MD18	Bukit Selambau	78	P/ T	III	80	SP/ ST	III
			2MD20	Pinang Tunggal	81	SP/ ST	III	81	SP/ ST	III
		Sg. Nami	2MD21	Nami	85	SP/ ST	III	79	P/ T	III
		Sg. Sedim	2MD19	Bikan	85	SP/ ST	III	73	P/ T	IV
P.Pinang	Pinang	Sg. Satu	2PG12	Batu Feringgi	83	SP/ ST	III	88	SP/ ST	II
Perak	Kurau	Sg. Air Hitam	2KU07	Loji Rawatan Air Jelai	80	SP/ ST	III	80	SP/ ST	III
	Perak	Sg. Manong	2PK62	Loji Rawatan Air Manong	88	SP/ ST	II	83	SP/ ST	III
		Sg. Sauk	2PK61	Loji Rawatan Air Sauk	83	SP/ ST	III	87	SP/ ST	III
		Sg. Tesong	2PK64	Loji Rawatan Air Sg. Klah	83	SP/ ST	III	83	SP/ ST	III
		Sg. Woh	2PK63	Loji Rawatan Air Kuala Woh	85	SP/ ST	III	87	SP/ ST	III
	Seputang	Sg. Batu Tegoh	2SP18	Loji Rawatan Air Bukit Larut	80	SP/ ST	III	83	SP/ ST	III
Selangor/ Perak	Bernam	Sg. Gelinting	1BM15	Loji Rawatan Air Ulu Slim	86	SP/ ST	III	83	SP/ ST	III
		Sg. Trolak	1BM14	Loji Rawatan Air Trolak Timur	89	SP/ ST	II	84	SP/ ST	III
Selangor/ Putrajaya/ N.Sembilan	Langat	Sg. Batang Labu	1L26	Loji Rawatan Air Salak Tinggi	63	P/ T	IV	75	P/ T	IV
		Sg. Semenyih	1L09	Loji Rawatan Air Semenyih	68	P/ T	IV	76	P/ T	IV
Selangor/ Wpkl	Klang	Sg. Gombak	1K53	Loji Rawatan Air Gombak	87	SP/ ST	III	77	P/ T	III
Melaka	Kesang	Sg. Chin-Chin	1KA08	Muka sauks Loji Rawatan Air Chin-chin	75	P/ T	IV	74	P/ T	IV
Johor	Batu Pahat	Sg. Semberong Dam	3BP27	Semberong Dam	43	P/ T	V	56	P/ T	IV
	Benut	Sg. Machap Dam	3BN10	Machap Dam	67	P/ T	IV	79	P/ T	III
	Pulai	Sg. Pulai Dam	3PU04	Pulai Dam	77	P/ T	III	81	SP/ ST	III

Jadual 3.7 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks BOD, 2015  
 Table 3.7 Malaysia: Water Quality Status of Upstream Water Intakes Based on BOD Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015			
					Sub- Indeks BOD BOD Sub- Index	KATEGORI CATEGORY	KELAS CLASS	Sub- Indeks BOD BOD Sub- Index	KATEGORI CATEGORY	KELAS	
Johor/ N.Sembilan/ Pahang	Muar	Sg. Jelai	1MN23	Loji Rawatan Air Dangi	69	P/ T	IV	81	SP/ ST	III	
		Sg. Jementah	3MR39	Loji Rawatan Air Jementah	80	SP/ ST	III	85	SP/ ST	III	
		Sg. Muar	3MR38	Loji Rawatan Air Gombang	66	P/ T	IV	80	SP/ ST	III	
Pahang	Bertam	Sg. Bertam	2CH15	Loji Rawatan Air Habu	83	SP/ ST	III	77	P/ T	IV	
		Sg. Terla	2CH14	Loji Rawatan Air Kuala Terla	81	SP/ ST	III	77	P/ T	III	
		Sg. Ulong	2CH16	Brinchang Dam	70	P/ T	IV	75	P/ T	IV	
Pahang/ Johor	Endau	Sg. Kahang	3ED38	Jalan Felda Kahang Timur, Kluang	84	SP/ ST	III	85	SP/ ST	III	
Pahang/ N.Sembilan	Pahang	Sg. Gapoi	4PH95	Muka sauik Loji Rawatan Air Gapoi	81	SP/ ST	III	79	P/ T	III	
		Sg. Jempol	4PH96	Loji Air Sg Jerik	76	P/ T	IV	75	P/ T	IV	
			4PH97	Loji Air Jengka 3	80	SP/ ST	III	72	P/ T	IV	
		Sg. Mentiga	4PH98	Loji Air Chini	67	P/ T	IV	75	P/ T	IV	
		Sg. Triang	4PH93	Loji Rawatan Air Sg. Triang	76	P/ T	IV	85	SP/ ST	III	
Terengganu	Terengganu	Sg. Terengganu	4TE14	Loji Air Serada	83	SP/ ST	III	82	SP/ ST	III	
Kelantan	Golok	Sg. Jeduk	4GL10	Syarikat Air Kelantan	80	SP/ ST	III	84	SP/ ST	III	
	Kelantan	Sg. Chiku	4KE66	Felda Ciku 2	86	SP/ ST	III	81	SP/ ST	III	
		Sg. Kelantan	4KE68	Loji Air Kelar, Pasir Mas	83	SP/ ST	III	86	SP/ ST	III	
		Sg. Pehi	4KE67	Loji Air Pahi	75	P/ T	IV	73	P/ T	IV	
Sabah	Padas	Sg. Padas	72PD04	Water Intake Jabatan Air Beaufort	48	P/ T	V	62	P/ T	IV	
	Papar	Sg. Papar	75PP04	Sekolah Kebangsaan Mandalipau	87	SP/ ST	III	84	SP/ ST	III	
			75PP05	Water Intake Kogopon	88	SP/ ST	II	84	SP/ ST	III	
Sarawak	Kerian	Sg. Selalang	55SG01	Selalang Water Intake	80	SP/ ST	III	87	SP/ ST	III	
	Rajang	Mukah	Sg. Mukah	58MH05	Mukah Water Intake	48	P/ T	V	63	P/ T	IV
		Sg. Daro	56DR01	Daro Water Intake	38	P/ T	V	61	P/ T	IV	
		Sg. Jemoreng	56JG01	Jemoreng Water Intake	37	P/ T	V	63	P/ T	IV	
		Sg. Pakan	56PN01	Pakan Water Intake	77	P/ T	III	85	SP/ ST	III	
		Sg. Pila Parit	56PL01	Igan Water Intake	44	P/ T	V	78	P/ T	III	

Nota/ Note: B/C: Bersih/Clean; ST/SP: Sederhana Tercemar/Slightly Polluted; T/P: Tercemar/Polluted

Jadual 3.8 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks AN, 2015  
 Table 3.8 Malaysia: Water Quality Status of Upstream Water Intakes Based on AN Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015			
					Sub- Indeks AN AN Sub- Index	KATEGORI CATEGORY	KELAS CLASS	Sub- Indeks AN AN Sub- Index	KATEGORI CATEGORY	KELAS	
Perlis	Perlis	Sg. Terusan Mada	2PS13	Loji Rawatan Air Arau Fasa IV	92	C/ B	I	95	C/ B	I	
			2PS14	Loji Rawatan Air TTPC, Sg. Baru	86	SP/ ST	II	81	SP/ ST	II	
Kedah	Kedah	Sg. Ahning	2KD11	Padang Sanai	74	SP/ ST	II	86	SP/ ST	II	
		Sg. Pdg Terap	2KD12	Kuala Nerang	79	SP/ ST	II	97	C/ B	I	
		Sg. Temin	2KD10	Changloon	68	P/ T	III	74	SP/ ST	II	
Kedah (Langkawi)	Melaka	Sg. Melaka	2LG05	Ulu Melaka	73	SP/ ST	II	78	SP/ ST	II	
		Sg. Saga	2LG06	Padang Saga	83	SP/ ST	II	81	SP/ ST	II	
Kedah/ P.Pinang	Muda	Sg. Muda	2MD16	Jeneri	98	C/ B	I	84	SP/ ST	II	
			2MD17	Jeniang	98	C/ B	I	95	C/ B	I	
			2MD18	Bukit Selambau	80	SP/ ST	II	97	C/ B	I	
			2MD20	Pinang Tunggal	88	SP/ ST	II	98	C/ B	I	
		Sg. Nami	2MD21	Nami	99	C/ B	I	99	C/ B	I	
		Sg. Sedim	2MD19	Bikan	95	C/ B	I	93	C/ B	I	
P.Pinang	Pinang	Sg. Satu	2PG12	Batu Feringgi	98	C/ B	I	95	C/ B	I	
Perak	Kurau	Sg. Air Hitam	2KU07	Loji Rawatan Air Jelai	100	C/ B	I	99	C/ B	I	
			2PK62	Loji Rawatan Air Manong	88	SP/ ST	II	96	C/ B	I	
	Perak	Perak	Sg. Sauk	2PK61	Loji Rawatan Air Sauk	75	SP/ ST	II	95	C/ B	I
			Sg. Tesong	2PK64	Loji Rawatan Air Sg. Klah	99	C/ B	I	97	C/ B	I
			Sg. Woh	2PK63	Loji Rawatan Air Kuala Woh	97	C/ B	I	87	SP/ ST	II
	Seputang	Sg. Batu Tegoh	2SP18	Loji Rawatan Air Bukit Larut	101	C/ B	I	99	C/ B	I	
Selangor/ Perak	Bernam	Sg. Gelinting	1BM15	Loji Rawatan Air Ulu Slim	96	C/ B	I	99	C/ B	I	
		Sg. Trolak	1BM14	Loji Rawatan Air Trolak Timur	102	C/ B	I	99	C/ B	I	
Selangor/ Putrajaya/ N.Sembilan	Langat	Sg. Batang Labu	1L26	Loji Rawatan Air Salak Tinggi	48	P/ T	IV	49	P/ T	IV	
		Sg. Semenyih	1L09	Loji Rawatan Air Semenyih	69	P/ T	II	72	SP/ ST	II	
Selangor/ Wpkl	Klang	Sg. Gombak	1K53	Loji Rawatan Air Gombak	98	C/ B	I	97	C/ B	I	
Melaka	Kesang	Sg. Chin-Chin	1KA08	Muka sauk Loji Rawatan Air Chin-chin	67	P/ T	III	86	SP/ ST	II	
Johor	Batu Pahat	Sg. Semberong Dam	3BP27	Semberong Dam	72	SP/ ST	II	84	SP/ ST	II	
	Benut	Sg. Machap Dam	3BN10	Machap Dam	89	SP/ ST	II	85	SP/ ST	II	
	Pulai	Sg. Pulai Dam	3PU04	Pulai Dam	83	SP/ ST	II	91	SP/ ST	I	

Jadual 3.8 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks AN, 2015  
Table 3.8 Malaysia: Water Quality Status of Upstream Water Intakes Based on AN Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					Sub- Indeks AN AN Sub- Index	KATEGORI CATEGORY	KELAS CLASS	Sub- Indeks AN AN Sub- Index	KATEGORI CATEGORY	KELAS
Johor/ N. Sembilan/ Pahang	Muar	Sg. Jelai	1MN23	Loji Rawatan Air Dangi	89	SP/ ST	II	89	SP/ ST	II
		Sg. Jementah	3MR39	Loji Rawatan Air Jementah	93	C/ B	I	98	C/ B	I
		Sg. Muar	3MR38	Loji Rawatan Air Gombang	94	C/ B	I	80	SP/ ST	II
Pahang	Bertam	Sg. Bertam	2CH15	Loji Rawatan Air Habu	98	C/ B	I	100	C/ B	I
		Sg. Terla	2CH14	Loji Rawatan Air Kuala Terla	83	SP/ ST	II	99	C/ B	I
		Sg. Ulong	2CH16	Brinchang Dam	94	C/ B	I	99	C/ B	I
Pahang/ Johor	Endau	Sg. Kahang	3ED38	Jalan Felde Kahang Timur, Kluang	88	SP/ ST	II	99	C/ B	I
Pahang/ N.Sembilan	Pahang	Sg. Gapoi	4PH95	Muka sauik Loji Rawatan Air Gapoi	100	C/ B	I	75	SP/ ST	II
		Sg. Jempol	4PH96	Loji Air Sg Jerik	84	SP/ ST	II	94	C/ B	I
			4PH97	Loji Air Jengka 3	88	SP/ ST	II	98	C/ B	I
		Sg. Mentiga	4PH98	Loji Air Chini	90	SP/ ST	II	81	SP/ ST	II
		Sg. Triang	4PH93	Loji Rawatan Air Sg. Triang	96	C/ B	I	99	C/ B	I
Terengganu	Terengganu	Sg. Terengganu	4TE14	Loji Air Serada	84	SP/ ST	II	90	SP/ ST	II
Kelantan	Golok	Sg. Jeduk	4GL10	Syarikat Air Kelantan	94	C/ B	I	94	C/ B	I
	Kelantan	Sg. Chiku	4KE66	Felda Ciku 2	88	SP/ ST	II	89	SP/ ST	II
		Sg. Kelantan	4KE68	Loji Air Kelar, Pasir Mas	81	SP/ ST	II	97	C/ B	I
		Sg. Pehi	4KE67	Loji Air Pahi	90	SP/ ST	II	97	C/ B	I
Sabah	Padas	Sg. Padas	72PD04	Water Intake Jabatan Air Beaufort	94	C/ B	I	85	SP/ ST	II
	Papar	Sg. Papar	75PP04	Sekolah Kebangsaan Mandalipau	99	C/ B	I	86	SP/ ST	II
			75PP05	Water Intake Kogopon	99	C/ B	I	82	SP/ ST	II
Sarawak	Kerian	Sg. Selalang	55SG01	Selalang Water Intake	94	C/ B	I	100	C/ B	I
	Mukah	Sg. Mukah	58MH05	Mukah Water Intake	92	C/ B	I	89	SP/ ST	II
	Rajang	Sg. Daro	56DR01	Daro Water Intake	90	SP/ ST	II	87	SP/ ST	II
		Sg. Jemoreng	56JG01	Jemoreng Water Intake	87	SP/ ST	II	71	SP/ ST	II
		Sg. Pakan	56PN01	Pakan Water Intake	96	C/ B	I	100	C/ B	I
		Sg. Pila Parit	56PL01	Igan Water Intake	77	SP/ ST	II	85	SP/ ST	II

Nota/ Note: B/C: Bersih/Clean; ST/SP: Sederhana Tercemar/Slightly Polluted; T/P: Tercemar/Polluted

Jadual 3.9 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks SS, 2015  
 Table 3.9 Malaysia: Water Quality Status of Upstream Water Intakes Based on SS Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					Sub- Indeks SS Sub- Index	KATEGORI CATEGORY	KELAS CLASS	Sub- Indeks SS Sub- Index	KATEGORI CATEGORY	KELAS
Perlis	Perlis	Sg. Terusan Mada	2PS13	Loji Rawatan Air Arau Fasa IV	85	C/ B	I	80	C/ B	II
			2PS14	Loji Rawatan Air TTPC, Sg. Baru	86	C/ B	I	80	C/ B	II
Kedah	Kedah	Sg. Ahning	2KD11	Padang Sanai	91	C/ B	I	93	C/ B	I
		Sg. Pdg Terap	2KD12	Kuala Nerang	92	C/ B	I	80	C/ B	II
		Sg. Temin	2KD10	Changloon	74	SP/ ST	II	79	C/ B	II
Kedah (Langkawi)	Melaka	Sg. Melaka	2LG05	Ulu Melaka	81	C/ B	II	87	C/ B	I
		Sg. Saga	2LG06	Padang Saga	94	C/ B	I	82	C/ B	II
Kedah/ P.Pinang	Muda	Sg. Muda	2MD16	Jeneri	71	SP/ ST	III	62	P/ T	III
			2MD17	Jeniang	74	SP/ ST	II	78	C/ B	II
			2MD18	Bukit Selambau	72	SP/ ST	II	65	P/ T	III
			2MD20	Pinang Tunggal	76	C/ B	II	73	SP/ ST	II
		Sg. Nami	2MD21	Nami	82	C/ B	II	77	C/ B	II
		Sg. Sedim	2MD19	Bikan	79	C/ B	II	75	SP/ ST	II
P.Pinang	Pinang	Sg. Satu	2PG12	Batu Feringgi	98	C/ B	I	98	C/ B	I
Perak	Kurau	Sg. Air Hitam	2KU07	Loji Rawatan Air Jelai	99	C/ B	I	98	C/ B	I
	Perak	Sg. Manong	2PK62	Loji Rawatan Air Manong	97	C/ B	I	97	C/ B	I
		Sg. Sauk	2PK61	Loji Rawatan Air Sauk	99	C/ B	I	99	C/ B	I
		Sg. Tesong	2PK64	Loji Rawatan Air Sg. Klah	98	C/ B	I	97	C/ B	I
		Sg. Woh	2PK63	Loji Rawatan Air Kuala Woh	98	C/ B	I	96	C/ B	I
	Seputang	Sg. Batu Tegoh	2SP18	Loji Rawatan Air Bukit Larut	99	C/ B	I	98	C/ B	I
Selangor/ Perak	Bernam	Sg. Gelinting	1BM15	Loji Rawatan Air Ulu Slim	93	C/ B	I	93	C/ B	I
		Sg. Trolak	1BM14	Loji Rawatan Air Trolak Timur	97	C/ B	I	96	C/ B	I
Selangor/ Putrajaya/ N.Sembilan	Langat	Sg. Batang Labu	1L26	Loji Rawatan Air Salak Tinggi	81	C/ B	II	88	C/ B	I
		Sg. Semenyih	1L09	Loji Rawatan Air Semenyih	70	SP/ ST	III	60	P/ T	III
Selangor/ Wpkl	Klang	Sg. Gombak	1K53	Loji Rawatan Air Gombak	97	C/ B	I	95	C/ B	I
Melaka	Kesang	Sg. Chin-Chin	1KA08	Muka sauk Loji Rawatan Air Chin-chin	80	C/ B	II	83	C/ B	II
Johor	Batu Pahat	Sg. Semberong Dam	3BP27	Semberong Dam	89	C/ B	I	87	C/ B	I
	Benut	Sg. Machap Dam	3BN10	Machap Dam	91	C/ B	I	89	C/ B	I
	Pulai	Sg. Pulai Dam	3PU04	Pulai Dam	95	C/ B	I	97	C/ B	I

Jadual 3.9 Malaysia: Status Kualiti Air di Hulu Muka Sauk Berdasarkan Sub-Indeks SS, 2015  
 Table 3.9 Malaysia: Water Quality Status of Upstream Water Intakes Based on SS Sub-Index, 2015

NEGERI STATE	LEMBANGAN SUNGAI RIVER BASIN	SUNGAI RIVER	ID STESEN STESEN ID	MUKA SAUK WATER INTAKE	KUALITI AIR, 2014 WATER QUALITY 2014			KUALITI AIR, 2015 WATER QUALITY 2015		
					Sub- Indeks SS Sub- Index	KATEGORI CATEGORY	KELAS CLASS	Sub- Indeks SS Sub- Index	KATEGORI CATEGORY	KELAS
Johor/ N. Sembilan/ Pahang	Muar	Sg. Jelai	1MN23	Loji Rawatan Air Dangi	79	C/ B	II	78	C/ B	II
		Sg. Jementah	3MR39	Loji Rawatan Air Jementah	95	C/ B	I	96	C/ B	I
		Sg. Muar	3MR38	Loji Rawatan Air Gombang	75	SP/ ST	II	67	P/ T	III
Pahang	Bertam	Sg. Bertam	2CH15	Loji Rawatan Air Habu	97	C/ B	I	98	C/ B	I
		Sg. Terla	2CH14	Loji Rawatan Air Kuala Terla	96	C/ B	I	84	C/ B	I
		Sg. Ulong	2CH16	Brinchang Dam	95	C/ B	I	96	C/ B	I
Pahang/ Johor	Endau	Sg. Kahang	3ED38	Jalan Felde Kahang Timur, Kluang	92	C/ B	I	88	C/ B	I
Pahang/ N.Sembilan	Pahang	Sg. Gapoi	4PH95	Muka sauik Loji Rawatan Air Gapoi	98	C/ B	I	96	C/ B	I
		Sg. Jempol	4PH96	Loji Air Sg Jerik	87	C/ B	I	92	C/ B	I
			4PH97	Loji Air Jengka 3	78	C/ B	II	88	C/ B	I
		Sg. Mentiga	4PH98	Loji Air Chini	86	C/ B	I	89	C/ B	I
		Sg. Triang	4PH93	Loji Rawatan Air Sg. Triang	67	P/ T	III	69	P/ T	III
Terengganu	Terengganu	Sg. Terengganu	4TE14	Loji Air Serada	86	C/ B	I	83	C/ B	II
Kelantan	Golok	Sg. Jeduk	4GL10	Syarikat Air Kelantan	84	C/ B	II	84	C/ B	II
	Kelantan	Sg. Chiku	4KE66	Felda Ciku 2	71	SP/ ST	III	87	C/ B	I
		Sg. Kelantan	4KE68	Loji Air Kelar, Pasir Mas	59	P/ T	III	67	P/ T	III
		Sg. Pehi	4KE67	Loji Air Pahi	80	C/ B	II	85	C/ B	I
Sabah	Padas	Sg. Padas	72PD04	Water Intake Jabatan Air Beaufort	59	P/ T	III	57	P/ T	III
	Papar	Sg. Papar	75PP04	Sekolah Kebangsaan Mandalipau	87	C/ B	I	86	C/ B	I
			75PP05	Water Intake Kogopon	86	C/ B	I	87	C/ B	I
Sarawak	Kerian	Sg. Selalang	55SG01	Selalang Water Intake	96	C/ B	I	92	C/ B	I
	Mukah	Sg. Mukah	58MH05	Mukah Water Intake	86	C/ B	I	89	C/ B	I
	Rajang	Sg. Daro	56DR01	Daro Water Intake	93	C/ B	I	90	C/ B	I
		Sg. Jemoreng	56JG01	Jemoreng Water Intake	92	C/ B	I	88	C/ B	I
		Sg. Pakan	56PN01	Pakan Water Intake	83	C/ B	II	81	C/ B	II
		Sg. Pila Parit	56PL01	Igan Water Intake	82	C/ B	II	88	C/ B	I

Nota/ Note: B/C: Bersih/Clean; ST/SP: Sederhana Tercemar/Slightly Polluted; T/P: Tercemar/Polluted