



Document details

< Back to results | 1 of 1

↗ Export ↓ Download 🖨 Print ✉ E-mail 📄 Save to PDF ☆ Add to List More... >

[Full Text](#) View at Publisher

Desalination and Water Treatment
Volume 191, July 2020, Pages 118-125

Environmental forensic study: Tracing of pollution sources using environmetric technique in balok and tunggak rivers near gebeng industrial area, Kuantan, Pahang, Malaysia (Article)

Wahab, S.U.K.A.^a ✉, Samah, M.A.A.^b ✉, Sabuti, A.A.^c ✉, Yunus, K.^c ✉, Chowdhury, A.J.K.^c ✉, John, A.^d ✉, Aris, M.S.M.^a ✉, Mohamad, M.A.N.^a ✉, Hamid, A.A.A.^a ✉

^aDepartment of Biotechnology, Kulliyah of Science, International Islamic University Malaysia, Kuantan, Pahang 25200, Malaysia

^bDepartment of Chemistry, Kulliyah of Science, International Islamic University Malaysia, Kuantan, Pahang 25200, Malaysia

^cDepartment of Marine Science, Kulliyah of Science, International Islamic University Malaysia, Kuantan, Pahang 25200, Malaysia

View additional affiliations ▾

Abstract

▾ View references (44)

Extensive deterioration of water quality caused by the intensive land use activities in rivers and rapid response of pollutants from different sources may harm the aquatic organisms, humans, and the environment. The water quality of the Balok River is believed has been deteriorated by anthropogenic impact as a result of the industrial activities in the Gebeng industrial area. This alarming occurrence has initiated this study to investigate the main sources of pollution in two rivers near the Gebeng industrial zone. Data collection was done from two rivers namely Balok and Tunggak Rivers from 2018–2019 near Gebeng industrial area. The physicochemical parameters measured in this study were temperature, specific conductivity, pH, turbidity, dissolved oxygen, and salinity. The water samples were collected for tracing the radioactive elements and heavy metals by using inductively coupled plasma-mass spectrometry (ICP–MS). Then, the data were compared and analyzed by using environmetric analysis (cluster analysis and principal component analysis) based on the sampling site and source point. The finding from the environmetric analysis showed that the main pollutants loading in Balok and Tunggak River were Lead (first component), specific conductivity (second component), Thorium (third component), and pH (fourth component). It can be concluded that the presence of the pollutants in these two rivers were originated from both point and non-point sources which could be disquieting for the sustainable development of fisheries resources in the near future. © 2020 Desalination Publications. All rights reserved.

SciVal Topic Prominence ⓘ

Topic: Water Quality | Source Apportionment | Nonpoint Source Pollution

Prominence percentile: 94.207 ⓘ

Chemistry database information ⓘ

Substances

Metrics ⓘ View all metrics >

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

Related documents

Evaluation of physicochemical parameters of surface water quality in Gebeng Industrial Area, Pahang, Malaysia

Salah, M.G. , Islam, M.S. , Karim, M.A.

(2018) *Bangladesh Journal of Botany*

Study of relationship between water quality parameters, selective heavy metals and radioactive elements content in Rivers at Gebeng, Kuantan, Pahang, Malaysia

Wahab, S.U.K.A. , Yunus, K. , Samah, M.A.A.

(2019) *Asian Journal of Chemistry*

Assessment of surface water quality in the Malaysian coastal waters by using multivariate analyses

Yap, C.K. , Chee, M.W. , Shamarina, S.

(2011) *Sains Malaysiana*

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

Author keywords

Balok Environmetric analysis Rivers Sources of pollution Tunggak River

Indexed keywords

GEOBASE Subject Index: forensic science nonpoint source pollution physicochemical property
point source pollution river pollution water quality

Regional Index: Kuantan Malaysia Pahang West Malaysia

Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia	19-042-0650	IIUM
International Islamic University Malaysia		IIUM

Funding text

The authors would like to acknowledge the Ministry of Education (MOE) Malaysia and Research Management Centre, International Islamic University Malaysia (IIUM) for funding this project through a grant (FRGS: 19-042-0650). The authors also indebted to Kulliyah (Faculty) of Science, IIUM for providing laboratory facilities along with Laboratory staff for supporting this research project.

ISSN: 19443994

Source Type: Journal

Original language: English

DOI: 10.5004/dwt.2020.25271

Document Type: Article

Publisher: Desalination Publications

References (44)

[View in search results format >](#)

All Export Print E-mail Save to PDF Create bibliography

- 1 Wahab, N.A., Amri Kamarudin, M.K., Toriman, M.E., Juahir, H., Md Saad, M.H., Ata, F.M., Ghazali, A., (...), Harith, H.
Sedimentation and water quality deterioration problems at Terengganu Riverbasin, Terengganu, Malaysia

(2019) *Desalination and Water Treatment*, 149, pp. 228-241. Cited 5 times.
<http://www.deswater.com/readfulltextopenaccess.php?id=RfdUX2FydGJjbGVzL3ZvbF8xNDlfcGFwZXJzLzE0OV8yMDE5XzlyOC5wZGY=>
doi: 10.5004/dwt.2019.23836

[View at Publisher](#)

- 2 Afroz, R., Rahman, A.
Health impact of river water pollution in Malaysia
(2017) *Int. J. Adv. Appl. Sci*, 4, pp. 78-85. Cited 9 times.