



Overview of chemicals of potential concerns in contaminated land in Malaysia

Mohd Faizal Ab Jalil^{a,*}, Ain Nihla Kamarudzaman^b, Ahmad Anas Nagoor Gunny^c,
Norhisham Abdul Hamid^d, Novera Herdiani^e, Iswahyudi Iswahyudi^f,
Achmad Syafiuddin^{e,*}

^aKedah State Department of Environment, Level 2, Menara Zakat, Jalan Telok Wanjah, 05200, Alor Setar, Kedah, Malaysia,
email: faj@doe.gov.my

^bFaculty of Civil Engineering Technology, Universiti Malaysia Perlis, Kompleks Pusat Pengajian Jejawi 3, 02600 Arau,
Perlis, Malaysia

^cFaculty of Chemical Engineering Technology, Universiti Malaysia Perlis, Kompleks Pusat Pengajian Jejawi 3, 02600 Arau,
Perlis, Malaysia

^dDepartment of Environment, Level 1-4, Podium 2&3, Wisma Sumber Asli, No. 25, Persiaran Perdana, Precint 4, 62574,
Putrajaya, Malaysia

^eDepartment of Public Health, Universitas Nahdlatul Ulama Surabaya, 60237 Surabaya, Indonesia,
email: achmadsyafiuddin@unusa.ac.id

^fInstitute of Research and Community Service (LPPM), Universitas Islam Madura, 69317 Pamekasan, Indonesia

Received 30 December 2021; Accepted 7 October 2022

ABSTRACT

In developed countries, contamination of soil due to industrial activities and illegal toxic waste disposal has been identified as major environmental problems. Established mechanisms for identifying, prioritizing, characterizing, assessing, and improving soil conditions have been implemented to reduce risks to human health and environmental receptors. However, the Contaminated Land Management System (CLMS) and the practices for the management of this contaminated land in Malaysia, including the enforcement of legislation are ineffective. The objective of this study is to discuss an overview of potential chemical substances, especially regarding its existence in contaminated soil in Malaysia. The report also examines the parameters of several heavy metals especially arsenic and mercury found in contaminated soil areas. In addition, this study is an explanatory effort to assess the level and characteristics of illegal disposal including current enforcement practices in Malaysia after three guidelines related to contaminated land management were developed by the Department of Environment (DOE) Malaysia in 2009.

Keywords: Contaminated land management system; Potential chemical substances; Environmental Quality Act 1974

* Corresponding authors.