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**DEPARTMENT OF ENVIRONMENTAL AFFAIRS**  
**DEPARTEMENT VAN OMGEWINGSAKE**

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**NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT, 2008**  
**(ACT NO. 24 OF 2008)**

**NATIONAL ACTION LIST FOR THE SCREENING OF DREDGED MATERIAL PROPOSED FOR MARINE DISPOSAL IN TERMS OF SECTION 73 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT, 2008 (ACT NO. 24 OF 2008)**

I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby, under section 73 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008), publish the National Action List for the Screening of Dredged Material Proposed for Marine Disposal, as set out in the Schedule hereto.

Copies of the technical review report which informed the official National Action List are available on the Department's website at [www.environment.gov.za](http://www.environment.gov.za) or at the offices of the Branch: Oceans and Coasts located at East Pier Building, East Pier Road, V and A Waterfront, Cape Town. All enquiries related to the National Action List can be forwarded to:

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**MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS**

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## 1. Introduction

The South African Government is a signatory to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972) (the London Convention) and to the 1996 Protocol to the London Convention (the London Protocol). The London Convention and London Protocol regulate the deliberate disposal of waste materials in the marine environment. In South Africa, the Integrated Coastal Management Act 2008 (Act 24 of 2008) (ICM Act) gives effect to the provisions of the London Convention and London Protocol. There are seven categories of waste and other material that are regulated under the ICM Act. Of these, the largest volume of material that requires disposal in offshore waters of South Africa is dredged material, derived predominantly from maintenance and capital dredging in ports.

The Branch: Oceans and Coasts of the Department of Environmental Affairs is mandated with the responsibility for regulating the disposal of materials in the marine environment off South Africa. As per the conditions of the London Convention and the London Protocol, Oceans and Coasts uses a National Action List to make decisions on whether sediment proposed for dredging is of a suitable quality for unconfined, open water disposal.

## 2. What is an Action List?

An Action List is a mechanism that allows managers and regulatory authorities to reach an informed decision on the suitability of material proposed for disposal in the marine environment. An Action List is comprised of one or more Action Levels. In the context of the disposal of dredged material, the Action Levels provide the decision criteria for determining whether the material:

1. Is suitable for unconfined, open water disposal without further testing,
2. must undergo detailed testing before a decision can be made, or
3. is unacceptable for unconfined, open water disposal and requires special management.

Action Levels may comprise one or more criteria that are used to identify whether the environmental concern is low or high for a particular characteristic

of concern. The characteristics of concern in dredged material might include the concentrations of chemicals, a biological response, or other characteristics that provide insight into the potential for the sediment to cause adverse biological effects in the marine environment. An Action Level may thus comprise criteria for a combination of physical, chemical and biological characteristics.

An upper Action Level is intended to provide a definitive decision point where the waste material under consideration may not be disposed unless further managed.

## 3. The National Action List

At this time the South African National Action List (Table 1) that will be used to identify management options for sediment proposed for dredging is comprised only of sediment quality guidelines.

There is presently insufficient matching sediment chemistry, toxicity and benthic invertebrate community data for South African coastal waters to allow for the derivation of empirical sediment quality guidelines. The sediment quality guidelines of the National Action List were consequently adopted from sediment quality guidelines derived for application in certain jurisdictions of the United States of America and Canada.

Candidate sediment quality guidelines were identified using baseline concentrations for metals in sediment from South African coastal waters. The baseline

**Table 1:** National Action List for the identification of management options for material identified for dredging in South African coastal waters. Two Warning Level concentrations are included for chromium and nickel to account for differences in the baseline concentrations for these metals between Eastern Cape and KwaZulu-Natal coastal waters.

Metal	Warning Level ( $\mu\text{g}\cdot\text{g}^{-1}$ )	Level I ( $\mu\text{g}\cdot\text{g}^{-1}$ )	Level II ( $\mu\text{g}\cdot\text{g}^{-1}$ )
Arsenic	42 <sup>a</sup>	57 <sup>b</sup>	93 <sup>b</sup>
Cadmium	1.2 <sup>c</sup>	5.1 <sup>b</sup>	9.6 <sup>c</sup>
Chromium	135 <sup>d</sup> /250 <sup>e</sup>	260 <sup>b</sup>	370 <sup>c</sup>
Copper	110 <sup>a</sup>	230 <sup>a</sup>	390 <sup>b</sup>
Mercury	0.43 <sup>b</sup>	0.84 <sup>b</sup>	1.5 <sup>c</sup>
Nickel	62 <sup>d</sup> /88 <sup>e</sup>	140 <sup>b</sup>	370 <sup>b</sup>
Lead	110 <sup>a</sup>	218 <sup>c</sup>	530 <sup>b</sup>
Zinc	270 <sup>a</sup>	410 <sup>b</sup>	960 <sup>b</sup>

<sup>a</sup> - Environment Canada and MDDEP (2007), <sup>b</sup> - USACE (2006), <sup>c</sup> - Long et al. (1995), <sup>d</sup> - for Eastern Cape, <sup>e</sup> - for KwaZulu-Natal

concentrations were used to screen sediment quality guidelines that are not suitable as they prescribe concentrations that are lower than the baseline concentrations. Four candidate sediment quality guidelines were identified through this process, namely guidelines derived for application in Quebec, Canada (EC and MDDEP 2007), British Columbia, Canada (MacDonald et al. 2003), and the Pacific Northwest of the United States of America (USACE 2006, USACE 2008).

Most of the Level I and Level II guidelines of the National Action List were taken from USACE (2006). Since USACE (2006) Level I and Level II guidelines for copper are identical, the Level I guideline was substituted with the Level II guideline of the Quebec sediment quality guidelines (EC and MDDEP 2007). The USACE (2006) Level I guideline for lead is high and was replaced with the more protective Level II guideline from the Long et al. (1995) sediment quality guidelines. The USACE (2006) Level II guidelines for cadmium and chromium are not much higher than the Level I guidelines and were also replaced by the Level II guidelines from the Long et al. (1995) sediment quality guidelines.

The Warning Level for most metals correspond to the Probable Effects Level of the Quebec sediment quality guidelines (EC and MDDEP 2007), but guidelines were also taken from the USACE (2006) and Long et al. (1995) sediment quality guidelines. The guidelines for chromium and nickel in the latter sediment quality guidelines were limited from some perspective and the Warning Level for these metals was consequently derived using the Sediment Background approach, as 1.5 times the baseline concentration at a co-occurring aluminium concentration of 60 mg.g<sup>-1</sup>.

Three guidelines were identified, namely a Warning Level and Level I and Level II guidelines. The Warning Level is intended to provide a warning of incipient contamination, but will not be used for decision-making in the National Action List. The Level I and Level II guidelines will comprise the Action Levels of the National Action List, and decision will be made using these guidelines.

#### 4. Scope of application

The National Action List should only be used to identify management options for sediment proposed for dredging in South African ports. The National Action List should not be used to assess sediment quality in aquatic ecosystems outside of ports for the reason that the guidelines are relatively high and may not be sufficiently protective for less anthropogenically disturbed systems.

The National Action List *per se* does not consider impacts associated with dredging and spoil disposal activities. These impacts include, for example, the physical disturbance of sediment habitat and the impairment of water quality through increased levels of turbidity.

The sediment quality guidelines of the National Action List should not be viewed as 'pollute up to' lines for port environments. The concentrations of metals specified by the guidelines are higher than baseline concentrations in sediment from South African coastal waters and contamination will already have occurred by the time that the concentrations exceed the lowest guideline.

#### 5. Decision-making criteria

At this time there are no decision-making criteria associated with the National Action List. Decision-making criteria will be developed in due course.