



# Abu Dhabi Environment, Health and Safety Management System Regulatory Framework (EHSMS)

## Code of Practice

AD EHSMS CoP 12 – Water Quality

Version 1.2

July 2009



الوكالة البيئية - أبوظبي  
Environment Agency - ABU DHABI

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## Code of Practice - Water Quality

### 1. ***Aims & Intent***

#### 1.1 **Aims**

- (a) The aims of the CoP are to:
- (i) ensure that the environment, health and safety quality objectives are met;
  - (ii) drive continuous improvement in water quality to achieve the best environment, health and safety outcomes while having regard to the social and economic development of the Emirate; and
  - (iii) support national measures to protect the aquatic environment.

#### 1.2 **Intent**

- (a) The intent of the CoP is as follows:
- (i) reduce EHS harm and encourage efficient use of water resources in accordance with the principles of ecologically sustainable development by preserving the quality of water resources;
  - (ii) promote the health, safety and welfare of the people of the Emirate of Abu Dhabi, and to protect the environment by establishing minimum standards for water quality;
  - (iii) encourage government and private sectors and the community to share responsibility for consuming and managing water;
  - (iv) encourage government agencies to 'lead by example' and share responsibility for consuming and managing water;
  - (v) ensure there is adequate funding for water and resource management planning programs and service delivery;
  - (vi) achieve integrated water and resource management planning, programs and service delivery on an Emirate wide basis;
  - (vii) set and specify water quality guidelines and objectives to enhance or protect EHS values; and
  - (viii) to assist in the achievement of the objectives of relevant laws.

### 2. ***Application & Implementation***

#### 2.1 **Application.**

- (a) The Competent Authority will inform the private and government sectors and the community on water quality issues by:
- (i) acquiring, analyzing and reporting information on water quality levels, and promoting increased private and government sector and community awareness and understanding of water management;
  - (ii) consulting with government and private sectors and the community to understand their expectations and priorities for water management;

- (iii) allowing the private and government sectors and the community to make submissions and comment on certain proposed policies plans and programs;
  - (iv) producing timely forecasts and bulletins on water quality levels for public information, when available;
  - (v) advising government and private sectors and the community on actions they can take to improve water management;
  - (vi) investigating complaints and concerns relating to water contamination;
  - (vii) ensuring that the investigation and remediation of water is based on international best practice;
  - (viii) ensuring consistency with relevant laws and regulations; and
  - (ix) monitor water quality by establishing a monitoring network.
- (b) The Competent Authority and/or Sector Regulatory Authorities may require a generator of pollution to waters, to undertake a risk assessment where it is believed a risk assessment will contribute to a better understanding of the impact of the pollution on the beneficial uses of the environment.

### **3. General Requirements**

#### **3.1 General Water Quality Protection Requirements**

##### **3.1.1 Releases on Land**

- (a) This section applies if the Competent Authority and/or Sector Regulatory Authorities are making an EHS management decision about an activity involving the release of pollutants to land.
- (b) The Competent Authority and/or Sector Regulatory Authorities shall consider the following:
  - (i) the existing quality of waters that may be affected by the release and the water quality objectives for the waters;
  - (ii) available land and wet weather storage;
  - (iii) the cumulative effect of the release concerned and any other releases of contaminants to waters that could be affected by the release known to the Regulatory Authority;
  - (iv) the need to protect the environment and in particular terrestrial and water ecosystems from damage; and
  - (v) the need to protect human health.
- (c) To protect an environmental value, the Competent Authority and/or Sector Regulatory Authorities may require the relevant person to release the wastewater to an artificial wetland for the removal of nutrients from the water.

### 3.1.2 Releases to Surface Water

- (a) This section applies if the Competent Authority and/or Sector Regulatory Authorities are making an environmental management decision about an activity involving the release of pollutants (other than contaminated stormwater) to surface water.
- (b) The Competent Authority and/or Sector Regulatory Authorities shall consider the following:
- (i) whether a mixing zone may be allowed for discharges into a surface water in which certain beneficial uses of the water are not protected;
  - (ii) whether the size of the initial mixing zone will adversely affect an EHS value, especially biological integrity and suitability for recreational use;
  - (iii) whether concentrations of contaminants in the initial mixing zone are acutely toxic to the biota;
  - (iv) the existing quality of the surface water;
  - (v) the cumulative effect of the release concerned and any other releases of contaminants to the surface water known to the Competent Authority and/or Sector Regulatory Authorities;
  - (vi) future releases to the surface water known to the Competent Authority; and
  - (vii) the water quality objectives for waters outside the initial mixing zone.
- (c) The Competent Authority and/or Sector Regulatory Authorities may require the relevant person to submerge an outfall to the surface water if it will help to:
- (i) protect the aesthetic and recreational use of the water; or
  - (ii) better achieve the water quality objectives for the water.
- (d) To protect an EHS value, the Competent Authority and/or Sector Regulatory Authorities may:
- (i) require the relevant person to meet a minimum initial dilution level under stated tidal or flow conditions by:
    - (1) increasing the depth of submergence of an outfall; or
    - (2) using diffusers; or
    - (3) applying a limit to the size of the initial mixing zone; or
    - (4) requiring the relevant person to use an alternative outfall location; or
    - (5) requiring the relevant person to restrict a discharge into coastal waters to stated parts of the tide.

### 3.1.3 Releases to Groundwater

- (a) This section applies if the Competent Authority and/or Sector Regulatory Authorities are making an EHS management decision about an activity involving the direct release of pollutants to groundwater.

- (b) The Competent Authority and/or Sector Regulatory Authorities shall consider:
- (i) whether an attenuation zone may be allowed for discharges into groundwater in which certain beneficial uses of the groundwater are not protected;
  - (ii) whether the size of the attenuation zone will adversely affect an EHS value, especially in the draw-down zones of any bores used to obtain water for agriculture, stock or potable water for drinking;
  - (iii) the existing quality of the groundwater;
  - (iv) the cumulative effect of the release concerned and any other releases to the groundwater known to the Regulatory Authority; and
  - (v) the water quality objectives for waters outside the attenuation zone.
- (c) The Competent Authority and/or Sector Regulatory Authorities may decide to authorize the release of pollutants to groundwater that results in the water quality objectives for waters outside the attenuation zone not being met only if:
- (i) the release is to a confined aquifer; and
  - (ii) the existing quality of the groundwater is not suitable for use; and
  - (iii) the groundwater does not discharge to a surface water or affect the ecology of another water body;
  - (iv) the groundwater does not affect the use of the land such as may occur through volatilisation of contaminants or impacts on the integrity of buildings and structures; and
  - (v) there is no foreseeable EHS value for, or commercial use of, the groundwater.
- (d) To protect an EHS value, the Competent Authority and/or Sector Regulatory Authorities may require a limit to the size of the attenuation zone.

#### **3.1.4 Incidental Releases to Groundwater**

- (a) This section applies if a Competent Authority and/or Sector Regulatory Authorities is making an EHS management decision about an activity involving, or likely to involve, the incidental release of pollutants to groundwater.
- (b) The Competent Authority and/or Sector Regulatory Authorities shall consider the following:
- (i) the existing quality of, and the water quality objectives for, the groundwater or surface water likely to be affected by the release;
  - (ii) the cumulative effect of the release concerned and any other releases of pollutants to the groundwater known to the Regulatory Authority; and
  - (iii) requiring the relevant person to minimise or prevent infiltration of pollutants to the groundwater.

### 3.2 Responsibility

- (a) A person shall not cause any of the following, by discharging or depositing a pollutant into any waters, or any other action:
- (i) loss of sea grass or other native aquatic vegetation;
  - (ii) a reduction in numbers of any native species of aquatic animal or insect;
  - (iii) an increase in numbers of any non-native species of aquatic animals or insects;
  - (iv) a reduction in numbers of aquatic organisms necessary to a healthy aquatic ecosystem;
  - (v) an increase in algal or aquatic plant growth;
  - (vi) the water to become toxic to vegetation on land;
  - (vii) the water to become harmful or offensive to humans, livestock or native animals; or
  - (viii) an increase in turbidity or sediment levels.
- (b) A person shall not, by discharging or depositing a pollutant into any waters, or any other action, cause any of the water quality criteria applicable (see Water Quality Standards) to those waters:
- (i) to be exceeded or, if already exceeded (whether through natural causes, the discharge or deposit of a pollutant or a combination of both), further exceeded; or
  - (ii) in the case of a minimum level specified in Water Quality Standards in relation to a characteristic of water - to be decreased or, if already decreased (whether through natural causes, the discharge or deposit of a pollutant or a combination of both), further decreased.

### 3.3 Monitoring & Reporting Particular Releases

- (a) This section applies if the Competent Authority and/or Sector Regulatory Authorities are making an EHS management decision about an activity involving the release of water pollutants on land or to a water body.
- (b) The Competent Authority and/or Sector Regulatory Authorities shall consider requiring the relevant person to monitor the pollutants releases.
- (c) In making its decision, the Competent Authority and/or Sector Regulatory Authorities shall consider the following:
- (i) whether monitoring is needed in order to determine:
    - (1) that license condition(s) is being met;
    - (2) that the condition(s) of an EHS license or EHS improvement program is being met;
    - (3) if a system to prevent contamination of land by wastewater is required;
    - (4) the operational integrity of an existing system;
  - (ii) the variability of pollutants released from the activity;

- (iii) the protocols for monitoring the releases;
  - (iv) the requirement to use continuous monitoring equipment where it is reasonable and practicable;
  - (v) the protocols and technical methodologies for monitoring the land or water to which the polluted water is released; and
  - (vi) the requirement for impact monitoring. Impact monitoring is generally required:
    - (1) for large or hazardous activities with potential for causing significant EHS harm; or
    - (2) to measure the size of the initial mixing zone or attenuation zone from a large release; or
    - (3) to verify the conclusions of an EHSIA, study or report; or
    - (4) to decide future disposal strategies; or
    - (5) if there is concern over levels of a particular contaminant in water and there is known activities that release that contaminant to the water.
- (d) If the Competent Authority and/or Sector Regulatory Authorities requires the relevant person to carry out monitoring, the Competent Authority and/or Regulatory Authority shall consider the following factors in deciding the frequency of the monitoring and the indicators to be monitored:
- (i) the type of activity to be carried out;
  - (ii) the risk of harm to environmental values involved in carrying out the activity;
  - (iii) the frequency of monitoring required:
    - (1) to decide if a condition of an environmental license or environmental improvement program is being complied with;
    - (2) to decide if a system to prevent contamination of land or waters by pollution is functioning properly;
    - (3) because of the risk, and consequences, of the system failing; or
    - (4) to ascertain the variability of pollutants released from the activity.

### 3.3.1 Monitoring Plan

- (a) The Competent Authority shall prepare, or require others to prepare, a monitoring plan consistent with this section of the CoP which sets out how discharges and receiving waters will be monitored for pollution. *AD EHSMS CoP 09 - Monitoring and Reporting* provides further information on monitoring and reporting requirements.
- (b) The monitoring plan shall address the following:
  - (i) roles and responsibilities for implementing the plan;
  - (ii) a description of activities generating pollution to land or water lead to contamination and where these activities are likely to occur;
  - (iii) measures to be taken under the plan to minimize adverse impacts of pollution on the beneficial uses of water;
  - (iv) responsibilities for taking corrective actions;

- (v) data to be collected;
  - (vi) how data and information will be collected including sampling, modelling and analytical methods for obtaining information about water pollution;
  - (vii) the format and frequency of reporting; and
  - (viii) how and when the program will be reviewed.
- (c) The final monitoring plan shall be approved by the Competent Authority within 12 months of this CoP coming into force.

### **3.3.2 Reporting**

- (a) Reports shall be prepared to document and communicate the investigation and monitoring undertaken. Reports shall include risk management strategies and/or proposed measures to control water pollution. These reports shall be provided to the Competent Authority and stored in a database by the Competent Authority, and made publicly available upon request.
- (b) The Competent Authority shall ensure that a report on the Emirate of Abu Dhabi's performance and compliance status with this CoP is prepared in an approved form and provided in the annual State of Environment report for the Emirate of Abu Dhabi.
  - (i) the report shall include:
    - (1) an analysis of the extent to which the EHS quality objectives of the CoP are being met in the Emirate of Abu Dhabi; and
    - (2) the description of the circumstances which led to exceedences, including the influence of natural events;
    - (3) the extent and completeness of data available for a pollutant in the reporting period; and
    - (4) a statement of the progress made towards achieving the aim and intent of this CoP.

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**Document Status**

Rev No.	Author	Reviewer		Approved for Issue		
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