

## **9. REPORTING**

### **9.1 General**

**9.1.1** The use of an electronic communication and data recording system for the construction phase would facilitate the rapid and effective communication of the site environmental status, as well as serving as a management tool for the Contractors. This can achieve real-time monitoring and notify the Engineer any exceedance of the pre-set environmental quality so as to trigger immediate remedial actions, thus increasing the efficiency in resolving the environmental problems. The system will also track the actions undertaken by relevant parties. The system has the potential to interface with EPD's *Specialised Electronic Environmental Monitoring and Audit* (SEEMA) system (or another equivalent system) and so function as a database for the entry of all recorded monitoring and audit information.

**9.1.2** In addition, the system could:

- Automatically issues Notifications of Exceedances and track their completion;
- Instigate Event and Action Plans and track their completion;
- Store details of complaints;
- Store details of licenses, permits and notify of forthcoming expiry dates;
- Store construction activity details and other relevant site information and link these to the EM&A Implementation Schedule; and
- Allow retrieval of electronic versions of the EM&A Manual and other documents

**9.1.3** The following reporting requirements based upon a paper documented approach. However, the same information can be provided in an electronic medium upon agreeing the format with the ER and EPD. This would enable a transition from a paper/historic and reactive approach to an electronic/real time proactive approach.

### **9.2 Baseline Monitoring Report**

**9.2.1** The ENPO Manager in association with the EMT should prepare and submit a Baseline Environmental Monitoring Report within 10 working days of completion of the baseline monitoring. Copies of the Baseline Environmental Monitoring Report should be submitted to each of the three parties: the Contractor, the ER and the EPD. The ENPO Manager should liaise with the relevant parties on the exact number of copies they want. The format of the report and the format of the baseline monitoring data in magnetic media to be submitted to EPD should be agreed with EPD.

**9.2.2** The baseline monitoring report should include at least the following:

- (a) up to half a page executive summary;
- (b) brief project background information;
- (c) drawings showing locations of the baseline monitoring stations;
- (d) monitoring results (in both hard and diskette copies) together with the following information:
  - monitoring methodology;
  - equipment used and calibration details;
  - parameters monitored;
  - monitoring locations (and depth);
  - monitoring date, time, frequency and duration;
- (e) details on influencing factors, including:
  - major activities, if any, being carried out on the site during the period;
  - weather conditions during the period;

- other factors which might affect the results;
- (f) determination of the Action and Limit Levels for each monitoring parameter and statistical analysis of the baseline data;
- (g) revisions for inclusion in the EM&A Manual; and
- (h) comments and conclusions.

### 9.3 Monthly EM&A Reports

**9.3.1** The results and findings of all construction phase EM&A work required in this Manual should be recorded in the monthly EM&A reports prepared by the ENPO Manager in association with the EMT and EAT. The EM&A report should be prepared and submitted within 10 working days of the end of each reporting month, with the first report due in the month after construction commences. A maximum of 4 copies of each monthly EM&A report should be submitted to each of the three parties: the Contractor, the ER and the EPD. Before submission of the first EM&A report, the ENPO Manager should liaise with the parties on the exact number of copies and format of the monthly reports in both hard copy and electronic medium requirement.

**9.3.2** The ENPO Manager should review the number and location of monitoring stations and parameters to monitor every 6 months or on as needed basis in order to cater for the changes in surrounding environment and nature of works in progress.

#### 9.3.3 *First Monthly EM&A Report*

9.3.3.1 The first monthly EM&A report should include at least the following:

- (a) 1-2 pages executive summary;
- (b) basic project information including a synopsis of the project organisation, programme and management structure, and the work undertaken during the month;
- (c) a brief summary of EM&A requirements including:
  - all monitoring parameters;
  - environmental quality performance limits (Action and Limit levels);
  - Event / Action Plans;
  - environmental mitigation measures, as recommended in the EIA Report;
  - environmental requirements in contract documents;
- (d) advice on the implementation status of environmental protection and pollution control/mitigation measures, as recommended in the EIA Report, summarised in the updated implementation schedule;
- (e) drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- (f) monitoring results (in both hard and diskette copies) together with the following information:
  - monitoring methodology;
  - equipment used and calibration details;
  - parameters monitored;
  - monitoring locations (and depth);
  - monitoring date, time, frequency, and duration;
- (g) graphical plots of trends of monitored parameters over the past four reporting periods for representative monitoring stations annotated against the following:
  - major activities being carried out on site during the period;
  - weather conditions during the period;
  - any other factors which might affect the monitoring results;
- (h) advice on the solid and liquid waste management status;
- (i) a summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels);