

- 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);

- (j) a review of the reasons for and the implications of noncompliance including review of pollution sources and working procedures;
- (k) a description of the actions taken in the event of noncompliance and deficiency reporting and any follow-up procedures related to earlier noncompliance;
- (l) a summary record of all complaints received (written or verbal) for each media, including locations and nature of complaints, liaison and consultation undertaken, actions and follow-up procedures taken and summary of complaints; and
- (m) an account of the future key issues as reviewed from the works programme and work method statements.

### **9.3.4 Subsequent EM&A Reports**

9.3.4.1 The subsequent monthly EM&A reports should include the following:

- (a) Title Page;
- (b) Executive Summary (1-2 pages):
  - Breaches of AL levels;
  - Complaint Log;
  - Reporting Changes;
  - Future key issues;
- (c) Contents Page;
- (d) Environmental Status:
  - Drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
  - Summary of non-compliance with the environmental quality performance limits;
  - Summary of complaints;
- (e) Environmental Issues and Actions:
  - Review issues carried forward and any follow-up procedures related to earlier non-compliance (complaints and deficiencies);
  - Description of the actions taken in the event of noncompliance and deficiency reporting;
  - Recommendations (should be specific and target the appropriate party for action);
  - Implementation status of the mitigatory measures and the corresponding effectiveness of the measures;
- (f) Future Key Issues;
- (g) Appendix:
  - AL levels;
  - Graphical plots of trends of monitored parameters at key stations over the past four reporting periods for representative monitoring stations annotated against the following:
    - i) major activities being carried out on site during the period;
    - ii) weather conditions during the period;
    - iii) any other factors which might affect the monitoring results;
  - Monitoring schedule for the present and next reporting period;
  - Cumulative complaints statistics; and
  - Details of complaints, outstanding issues and deficiencies.

### **9.3.5 Quarterly EM&A Summary Reports**

9.3.5.1 The quarterly EM&A summary report which should generally be around 5 pages (including about 3 of text and tables and 2 of figures) should contain at least the following information:

- (a) up to half a page executive summary;
- (b) basic project information including a synopsis of the project organisation, programme, contacts of key management, and a synopsis of work undertaken during the quarter;
- (c) a brief summary of EM&A requirements including:

- monitoring parameters;
  - environmental quality performance limits (Action and Limit levels);
  - environmental mitigation measures, as recommended in the EIA Report;
- (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) graphical plots of the trends of monitored parameters over the past 4 months (the last month of the previous quarter and the present quarter) for representative monitoring stations annotated against;
- the major activities being carried out on site during the period;
  - weather conditions during the period;
  - any other factors which might affect the monitoring results;
- (g) advice on the solid and liquid waste management status;
- (h) a summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels);
- (i) a brief review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures;
- (j) a summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance;
- (k) a summary record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
- (l) comments (e.g. effectiveness and efficiency of the mitigation measures), recommendations (e.g. any improvement in the EM&A programme) and conclusions for the quarter; and
- (m) proponents' contacts and any hotline telephone number for the public to make enquiries.

## **9.4 Data Keeping**

- 9.4.1** The site document such as the monitoring field records, laboratory analysis records, site inspection forms, etc. are not required to be included in the monthly EM&A reports for submission. However, the document should be well kept by the ENPO Manager and be ready for inspection upon request. All relevant information shall be clearly and systematically recorded in the document. The monitoring data should also be recorded in magnetic media form, and the software copy can be available upon request. The water quality data software format should be agreed with EPD. All the documents and data should be kept for at least one year after completion of the construction contract.

## **9.5 Interim Notifications of Environmental Quality Limit Exceedances**

- 9.5.1** With reference to Event/Action Plans in Sections 2 to 5, when the environmental quality limits are exceeded, the ENPOs should immediately notify the ER & EPD, as appropriate. The notification should be followed up with advice to EPD on the results of the investigation, proposed action and success of the action taken, with any necessary follow-up proposals. A sample template for the interim notifications is shown in **Appendix B**.