

13. REPORTING

13.1 General

13.1.1.1 The EM&A reporting shall be carried out in paper based plus electronic submission upon agreeing the format with the ER and EPD. All the monitoring data (baseline and impact) shall also be submitted in CD-ROM.

13.1.1.2 Types of reports that the ET Leader should prepare and submit include baseline monitoring report, monthly EM&A report, quarterly EM&A summary report and final EM&A review report. In accordance with Annex 21 of the EIAO-TM, a copy of the monthly, quarterly summary and final review EM&A reports should be made available to the Director of Environmental Protection.

13.2 Baseline Monitoring Report

13.2.1.1 The ET Leader 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 the Contractor, the IEC, the ER and the EPD. The ET Leader should liaise with the relevant parties on the exact number of copies they require. The report format and baseline monitoring data format should be agreed with the EPD prior to submission.

13.2.1.2 The baseline monitoring report should include at least the followings:

- i. up to half a page executive summary;
- ii. brief project background information;
- iii. drawings showing locations of the baseline monitoring stations;
- iv. monitoring results (in both hard and soft copies) together with the following information:
 - monitoring methodology;
 - types of equipment used and calibration details;
 - parameters monitored;
 - monitoring locations;
 - monitoring date, time, frequency and duration; and
 - quality assurance (QA) / quality control (QC) results and detection limits;
- v. details of influencing factors, including:
 - major activities, if any, being carried out on the site during the period;
 - weather conditions during the period; and
 - other factors which might affect results;
- vi. determination of the action and limit levels for each monitoring parameter and statistical analysis of the baseline data, the analysis should conclude if there is any significant difference between control and impact stations for the parameters monitored;

- vii. revisions for inclusion in the EM&A Manual; and
- viii. comments, recommendations and conclusions.

13.3 Monthly EM&A Reports

13.3.1 Introduction

- 13.3.1.1 The results and findings of all EM&A work required in the Manual should be recorded in the monthly EM&A reports prepared by the ET Leader. 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 the month after construction commences. Each monthly EM&A report should be submitted to the following parties: the Contractor, the IEC, the ER and the EPD. Before submission of the first EM&A report, the ET Leader should liaise with the parties on the required number of copies and format of the monthly reports in both hard copy and electronic medium.
- 13.3.1.2 The ET leader should review the number and location of monitoring stations and parameters every six months, or on as needed basis, in order to cater for any changes in the surrounding environment and the nature of works in progress.

13.3.2 First Monthly EM&A Report

- 13.3.2.1 The first monthly EM&A report should include at least the following:
- i. executive summary (1-2 pages):
 - breaches of Action and Limit levels;
 - complaint log;
 - notifications of any summons and successful prosecutions;
 - reporting changes; and
 - future key issues.
 - ii. basic project information:
 - project organisation including key personnel contact names and telephone numbers;
 - construction programme;
 - management structure; and
 - works undertaken during the month.
 - iii. environmental status:
 - works undertaken during the month with illustrations (such as location of works); and
 - drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations (with co-ordinates of the monitoring locations).
 - iv. 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 project EIA Final Report; and
 - environmental requirements in contract documents.
- v. implementation status:
- advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA Final Report.
- vi. monitoring results (in both hard and soft copies) together with the following information:
- monitoring methodology;
 - name of types of equipment used and calibration details;
 - parameters monitored;
 - monitoring locations;
 - monitoring date, time, frequency, and duration;
 - weather conditions during the period;
 - any other factors which might affect the monitoring results; and
 - QA/QC results and detection limits.
- vii. report on non-compliance, complaints, and notifications of summons and successful prosecutions:
- record of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit levels);
 - record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
 - record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislation, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
 - review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and
 - description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.
- viii. others
- an account of the future key issues as reviewed from the works programme and work method statements;
 - advice on the solid and liquid waste management status; and

- comments (for examples, effectiveness and efficiency of the mitigation measures), recommendations (for example, any improvement in the EM&A programme) and conclusions.

ix. Subsequent Monthly EM&A Reports

13.3.2.2 Subsequent monthly EM&A reports should include the following:

- i. executive summary (1 - 2 pages):
 - breaches of Action and Limit levels;
 - complaints log;
 - notifications of any summons and successful prosecutions;
 - reporting changes; and
 - future key issues.
- ii. environmental status:
 - works undertaken during the month with illustrations (such as location of works etc.); and
 - drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations.
- iii. implementation status:
 - advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA.
- iv. monitoring results (in both hard and soft copies) together with the following information:
 - monitoring methodology;
 - name of types of equipment used and calibration details;
 - parameters monitored;
 - monitoring locations;
 - monitoring date, time, frequency, and duration;
 - weather conditions during the period;
 - any other factors which might affect the monitoring results; and
 - QA / QC results and detection limits.
- v. report on non-compliance, complaints, and notifications of summons and successful prosecutions:
 - record of all non-compliance (exceedances) of the environmental quality performance limits (action and limit levels);

- record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
 - record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislation, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
 - review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and
 - description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.
- vi. others
- an account of the future key issues as reviewed from the works programme and work method statements;
 - advice on the solid and liquid waste management status; and
 - comments (for examples, effectiveness and efficiency of the mitigation measures), recommendations (for example, any improvement in the EM&A programme) and conclusions.
- vii. appendix
- action and limit 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:
 - major activities being carried out on site during the period;
 - weather conditions during the period; and
 - any other factors that might affect the monitoring results.
 - monitoring schedule for the present and next reporting period;
 - cumulative statistics on complaints, notifications of summons and successful prosecutions; and
 - outstanding issues and deficiencies.

13.4 Quarterly EM&A Summary Reports

13.4.1.1 A quarterly EM&A summary report of around five pages should be produced and should contain at least the following information.

- i. up to half a page executive summary;
- ii. basic project information including a synopsis of the project organisation, programme, contacts of key management, and a synopsis of works undertaken during the quarter;
- iii. a brief summary of EM&A requirements including:

- monitoring parameters;
 - environmental quality performance limits (action and limit levels); and
 - environmental mitigation measures, as recommended in the project EIA Final Report;
- iv. advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA Final Report, summarised in the updated implementation schedule;
- v. drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- vi. graphical plots of any trends in monitored parameters over the past four 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; and
 - any other factors which might affect the monitoring results;
- vii. advice on the solid and liquid waste management status;
- viii. a summary of non-compliance (exceedances) of the environmental quality performance limits (action and limit levels);
- ix. a brief review of the reasons for and the implications of any non-compliance, including a review of pollution sources and working procedures;
- x. a summary description of actions taken in the event of non-compliance and any follow-up procedures related to any earlier non-compliance;
- xi. a summarised record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
- xii. comments (for examples, a review of the effectiveness and efficiency of the mitigation measures); recommendations (for example, any improvement in the EM&A programme) and conclusions for the quarter; and
- xiii. proponents' contacts and any hotline telephone number for the public to make enquiries.

13.5 Final EM&A Review Report

13.5.1.1 The final EM&A report should include, inter alia, the following information:

- i. an executive summary;
- ii. drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- iii. basic project information including a synopsis of the project organisation, contacts of key management, and a synopsis of work undertaken during the entire construction period;
- iv. a brief summary of EM&A requirements including:
 - monitoring parameters;
 - environmental quality performance limits (action and limit levels); and

- environmental mitigation measures, as recommended in the project EIA Final Report;
 - Event-Action Plans.
- v. a summary of the implementation status of environmental protection and pollution control/mitigation measures, as recommended in the project EIA Report, summarised in the updated implementation schedule;
 - vi. graphical plots of the trends of monitored parameters over the construction period for representative monitoring stations, including the post-project monitoring annotated against:
 - the major activities being carried out on site during the period;
 - weather conditions during the period; and
 - any other factors which might affect the monitoring results.
 - vii. a summary of non-compliance (exceedances) of the environmental quality performance limits (action and limit levels);
 - viii. a brief review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures as appropriate;
 - ix. a summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance;
 - x. a summary record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
 - xi. a summary record of notifications of summons and successful prosecutions for breaches of the current environmental protection/pollution control legislations, locations and nature of the breaches, investigation, follow-up actions taken and results;
 - xii. a review of the validity of EIA predictions and identification of shortcomings in EIA recommendations;
 - xiii. comments (for examples, a review of the effectiveness and efficiency of the mitigation measures and of the performance of the environmental management system, that is, of the overall EM&A programme); and
 - xiv. recommendations and conclusions (for example, a review of success of the overall EM&A programme to cost-effectively identify deterioration and to initiate prompt effective mitigation action when necessary).

13.6 Data Keeping

- 13.6.1.1 No site-based documents (such as monitoring field records, laboratory analysis records, site inspection forms, etc.) are required to be included in the monthly EM&A reports. However, any such document should be well kept by the ET Leader and be ready for inspection upon request. All relevant information should be clearly and systematically recorded in the document. Monitoring data should also be recorded in magnetic media form, and the software copy must be available upon request. Data format should be agreed with EPD. All documents and data should be kept for at least one year following completion of the construction contract.

13.7 Interim Notifications of Environmental Quality Limit Exceedances

- 13.7.1.1 With reference to the Event and Action Plan, when the environmental quality performance limits are exceeded, the ET Leader should immediately notify the IEC and EPD, as appropriate. The notification should be followed up with advice to IEC and EPD on the results of the investigation, proposed actions and success of the actions taken, with any necessary follow-up proposals. A sample template for the interim notifications is presented in **Appendix 13.1**.