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CS ENERGY PROCEDURE FOR ENVIRONMENTAL MONITORING AND MEASUREMENT CS-ENV-06

Responsible Officer: Environmental Specialist
 Responsible Manager: Head of Environment
 Responsible Executive: Executive General Manager Plant Operations

DOCUMENT HISTORY

Key Changes	Prepared By	Checked By	Approved By	Date
Original Issue				27/01/1999
Updated responsibilities				17/05/2000
Added diagram				28/08/2000
Added Review and Auditable Outputs				17/11/2000
Minor editorial changes. Reference EPA methods in Section 3.3. New Section 3.5.				24/11/2000
Removal of reference to EMRO, rewording of Section 3.4 including inclusion of scope of work, minor changes to titles, minor editing.				18/11/2002
Updated procedure to reflect current practice with respect to programs and schedules.				25/11/2003
Document owner; minor editing; updated Reference Documentation including reference to CPM Environmental Management Implementation Plan.				06/06/2005
Clarification and amendment of processes detailed in Sections 3.1 and 5.1; responsibility to review monitoring programs added to Section 4.2; update organisational titles; minor editing.				19/04/2006
EPA replaced with DERM; references to site-specific documentation removed; references to 'licence' or 'authority' changed to 'approval'; update organisational titles; Section 3.5 & 8 deletion of reference to CS-QR-1 Business Records and Section 3.5 new reference to Public Records Act; minor editing.				6/07/2009
Updated to reflect current business processes and address internal EMS audit recommendations	S Harabasz	R Hartigan	T Wiltshire	22/01/2016
Inclusion of calibration reference under 3.3 for consistency of information.	L Dingley		B Monckton	23/02/2018
Updated to reflect current business processes and address internal EMS audit recommendations and findings	S Harabasz	S Verano	B Monckton	15/02/2019



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1 PURPOSE

This procedure aims to ensure that monitoring is carried out in a consistent manner and in accordance with relevant standards, and that all monitoring requirements are collated as monitoring programs.

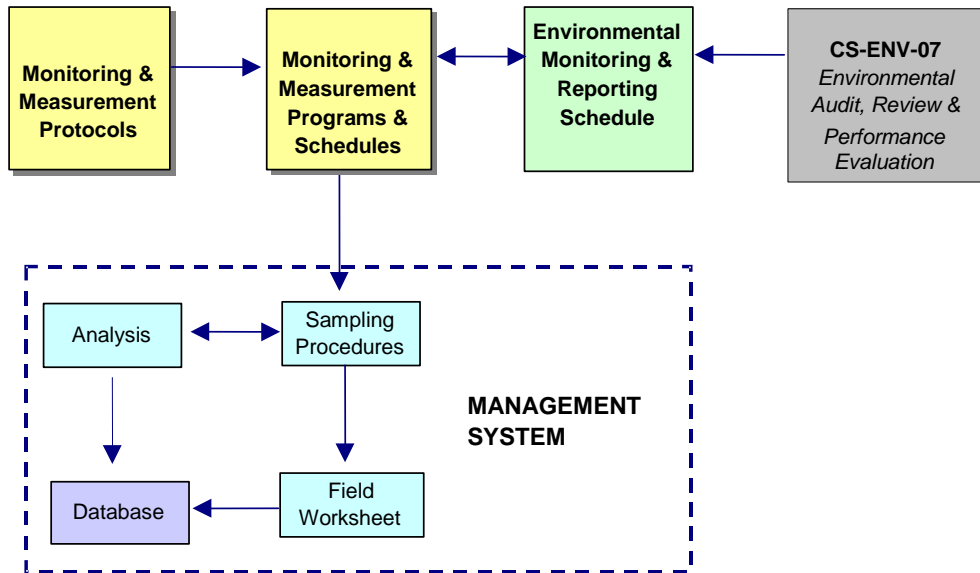


Figure CS-EMSP-06: Environmental Monitoring and Measurement Flow Diagram

2 SCOPE

This procedure applies to any environmental monitoring associated with CS Energy environmental performance reporting.

3 ACTIONS

3.1 Monitoring Programs

Monitoring programs are formulated from environmental approval requirements, emerging issues, due diligence considerations and issues where monitoring is identified as an operational control through the Enterprise Risk Management System (see CS-ENV-02 - Developing Environmental Planning).

A monitoring and measurement program is a document which details the site specific monitoring to be performed to provide detailed information on the environmental indicators listed in the Environmental Monitoring and Reporting Schedule (refer CS-ENV-07 - Environmental Audit Review and Performance

Evaluation). Monitoring and measurement programs shall contain:

- Basis for and scope of monitoring program;
- Description of impact being monitored;
- Parameters to be measured based on environmental approval(s), policy, National Pollutant Inventory (NPI), etc.
- Monitoring site locations and relevant information for carrying out monitoring.
- Sampling procedures or defined provider (Sections 3.3 and 4.4).
- Analysis procedures or defined provider (Section 3.4).
- Reporting requirements including relevant Environmental Monitoring and Reporting Schedule requirements, timing, recipient (who requires the report), circulation, file for storage, electronic or hard copy monitoring record storage and description of specific environmental approval or other requirements.
- References.

3.2 Develop Monitoring Schedule

Monitoring schedules applicable to programs are to be developed. These will contain information on:

- Applicable program title/name;
- Sampling point & location;
- Limits according to environmental approval(s);
- Parameter to be measured (based on program requirements);
- Frequency of measurement;
- Required measurement units; and
- Date schedule last reviewed/updated.

Monitoring schedules are usually held within the monitoring program.

3.3 Sampling Work Instructions

These are to be prepared if a service provider is not used, or if it is agreed that these are to be supplied to the service provider.

In most cases, sampling would be carried out in accordance with the Department of Environment and Science (DES) Sampling and Analysis Manuals published for water quality, air quality and noise

measurements, particularly where this is an environmental approval requirement.

Work instructions are to contain at least the following information:

- Calibration requirements such as frequency of calibration tests and reference/standards used;
- Parameter(s) being sampled;
- Reference standard or protocol on which it is based;
- Sample preparation and preservation technique;
- Sample storage, handling and labelling requirements; and
- Instructions regarding observations, abnormal conditions, etc.

3.4 External Providers - Monitoring and Measurement Requirements

External providers of monitoring and measurement services are to be supplied with the appropriate monitoring program(s) and additional information to reflect the requirements including:

- Scope of work in terms of sites, parameters, frequency.
- Analysis and sampling methodology i.e. preferred methods to be suggested. These methods can be from Australian Standards, government authorities or company developed. In most cases, sampling would be carried out in accordance with DES Sampling and Analysis Manuals published for water quality, air quality and noise measurements, particularly where this was an environmental approval requirement.
- Calibration requirements such as frequency of calibration tests and reference/standards used.
- Third party certification required for analysis.
- Any requirements for prior approval (e.g. DES) of specific methodologies.
- Specified units for reporting.
- Notification requirements e.g. reporting exceedances within designated time period and supplying other information such as method used confidence limits, etc.

3.5 Monitoring and Measurement Records

Retention times for monitoring records shall be established to be consistent with the Public Records Act 2002 and the associated retention and disposal schedules. Legal requirements for environmental record

storage and retention are also specified in site environmental approval(s).

4 RESPONSIBILITIES

4.1 General Managers and Site Managers

- Responsible for ensuring that resources are available for carrying out the environmental monitoring and measurement programs.

4.2 Site Environmental Business Partner

- Responsible for collating information and the preparation of protocols, monitoring and measurement programs.
- Review of site monitoring and measurement programs.

5 REVIEW

5.1 Monitoring and Measurement Program

These programs will be reviewed periodically but generally at least once per year by the Site Environmental Business Partner as to their suitability to CS Energy operations. The review will assess:

- Quality of data and suitability of programs at sites.
- Legal requirements, Policy requirements and ability to determine environmental performance.

All of the above must be updated as required, for example after environmental approval changes etc.

Recommendations from reviews should be documented.

The EMS Audit Program (refer CS-ENV-07 – Environmental Audit, Review and Performance Evaluation) encompasses the checking of this document.

6 AUDITABLE OUTPUTS

- Environmental monitoring programs and schedules.
- Environmental monitoring records.

7 DEFINITIONS

Term	Definition

8 REFERENCES

Reference No	Reference Title	Author
"B/D/11/31090"	Procedure - CS-ENV-02 - Developing Environmental Planning	CS Energy
"B/D/11/31095"	Procedure - CS-ENV-07 - Environmental Audit Review and Performance Evaluation	CS Energy

9 RECORDS MANAGEMENT

In order to maintain continual improvement, suitability, safety and effectiveness of the organisation, CS Energy's registered documents will be reviewed on a two-yearly basis or at intervals specified by legislative or regulatory requirements. Review of controlled documents should occur where it has been identified that there are changes in technology, legislation, standards, regulation or where experience identifies the need for alteration to the content. Registered documents should also be reviewed following an incident, change management process, modification or where directed as part of a risk assessment process. A 'review' can simply mean that it has been identified, confirmed and appropriately recorded that no changes are required and that the existing process remains the same.

CS Energy must ensure that records are retained according to accountability, legal, administrative, financial, commercial and operational requirements and expectations. In compliance with records retention and disposal, all documentation created in relation to CS Energy business must be retained in line with minimum retention periods as detailed in legal retention and disposal schedules.