Environmental Guidance Notes:
Air Emission Management Plan (AEMP)

REVISION

Rev	Status	Originator	Checked	Approved	Date
A	Issued for use	Environmental Engineer	Technical Manager	PTD Sr. Manager	01/02/17

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1 PURPOSE

This guide document has been developed to assist PDC's prospective tenants in the management of emission to the air associated with operation occurring both in land and waters under PDC concession area. The purpose of this guide is to identify typical components and content of an AEMP, in order to clarify the expectations for, and facilitate development of, an effective AEMP that meets international standards. It is intended to assure that, where operations are found to warrant formal management of emissions, the management process is carried out in a consistent manner and to an appropriate standard.

This document should be used by both tenants and environmental professional who may be hired to assist with technical aspects of developing and implementing an Air Emission Management Plan. It is to be noted that this guide is not meant to be comprehensive but only base reference to establish coherent compliance with legislative framework.

2 APPLICABILITY

This document is applicable to all of PDC's Assets and Facilities and where PDC has operational control. These guidelines relate to operational air emissions only. An Air Emissions Management Plan (AEMP) may be required, but not limited:

- As an environmental condition of works authorized by SEZAD
- Through a project permit issued by SEZAD

The following the general outline presented herein is not regulated and the minimum requirements and adequacy of AEMP is determined by SEZAD through consultation and review of related activities, operations and site conditions. The tenant is ultimately responsible for the successful implementation and on-going management of the AEMP.

3 AIR EMISSION MANAGEMENT PLAN (AEMP) COMPONENTS

Committed to reducing air emissions associated with activities under PDC concession, including fugitive emissions (such as dust and volatile organic carbons (VOCs)), and greenhouse gases (GHG), in order to protect air quality and the health of PDC's tenants and surrounding communities, and mitigate climate change is utmost objective and global goal to achieve. The AEMP should be supported by a registered environmental consultant with expertise in pollution prevention management and air quality issues that presents mitigation measures and best management practices (BMPs) to be implemented to avoid or minimize adverse impacts.

The level of detail should be scaled to the size and complexity of the project and the relevant potential for operation activities to generate impacts of concern. It is expected that AEMP to be updated as process change or expand. SEZAD will make a final determination on the suitability, completeness and adequacy of an AEMP.

3.1 Scope and Objectives

The plan should address the activities associated with the site and operations that generate air emissions, geographic and meteorological factors that influence impacts to air quality. Activities on site and associated with the supply chain should be considered.

3.1.1 Contact Details and Responsible Party

It expected that the tenants to maintain a list of contacts details for responsible individuals, terminals/facility management, key staff and any relevant external parties associated with implementation and ongoing application of AEMP. Identify these details allow SEZAD and PDC to engage with tenants in an efficient and timely manner.

3.1.2 Objectives

The plan should describe objectives that are measureable, where practical, and include commitments to preventing pollution, and to continuous improvement. Consideration should be given to technological options, financial, operational, and business requirements.

The objectives should provide sufficient detail to ensure that they are clear for users of the AEMP. Objectives are expected to lead to programs which should designate responsibility and the means and time-frame by which they should be achieved. High level objectives may include, but not limited to:

- Implement specific operational controls for all air emissions occurring on-site.
- Reduce potential exposure to local residents and the general public.
- Minimize the potential for community nuisances such as fugitive dust emissions.
- Validate air quality modeling estimates through monitoring, i.e. verify whether potential impacts arising from the project are observed through monitoring.

3.1.3 Management Plan Duration

The plan duration outlines how long the management plan will be carried out and during which phases of site activity. Various phases may require different monitoring, reporting, or procedures, and should be clearly outlined within the AEMP. Typical relevant phases may include:

- **Baseline** - Establish the baseline conditions, determine measurement protocols and methods, specifying how the baseline will be determined and the timing in relation to other activities.
- **Construction** – generally established within Construction Environmental Management Plan (CEMP) framework and assist in development and scoping of the air quality aspects of CEMP
- **Operation** – define details of operation activities focusing on standard operating procedures (SOPs), type and extent of monitoring, reporting frequency and performance tracking. Regular revision of AEMP should be maintained its effectiveness and continues to meet the stated objectives.

3.2 Site Emission Inventory

The plan should describe all the sources of emissions for the operations and activities as appropriate. Even if the management plan is only for some aspects of the operations, all sources should be identified in order to provide a comprehensive overview. Consider all potential activities that could occur on site that may impact air quality.

3.2.1 Site Overview

Provide an overview of the facility through the use of a site plan, process description, flow schematic, or other appropriate diagrams/figures that clearly identify the emission sources spatially. Those sources that are captured within the AEMP should be clearly indicated.

3.2.2 Emission Sources

Emission details of each source should be provided. The source information should reference the site plan and process description as appropriate. For each source provide the estimated annual emissions of relevant pollutants as tonnes per year, or other applicable measures.

3.3 Site Emission Assessment

A risk-based approach should be used to assess the potential impacts to air quality and the surrounding community from the various emission sources. A systematic process should be applied that identifies the most significant issues. For example, frequently occurring events with significant impacts should be given a higher priority than occasional events with nominal impacts.

Assessment of the potential risks should rely on the professional judgment of tenant operational staff and qualified environmental professionals supporting the development of the AEMP.

3.3.1 Issues of Concern Identification

The identification of potential impacts from air emissions should incorporate a review of:

- **Emission Sources** - Activities and associated emissions as identified in the site emissions inventory, to determine if any of the emitted pollutants are of particular health, nuisance or other concern (including diesel particulate matter, GHG, fugitive dust).
- **Receivers** - Locations on-site and in the surrounding community (residential, industrial, commercial, habitat, etc.) that may be impacted by the emission sources.

3.3.2 Emission Risk Assessment

Classify and prioritize the air emission risks arising from operations and consequential activities based on the site emissions review and relationship to the receivers. Identify which emissions are anticipated, and how frequently these emissions will be transported through the air, and consider the conditions under which the emissions would be mobilized (operational activities, meteorological conditions, wind speed, wind direction, etc.). A ranking matrix could be developed to assist in the prioritization of sources in order to identify those that require formal management and tracking through the AEMP.

3.4 Mitigation Measures

The plan should describe effective control and mitigation measures following approaches as such:

- **Prevention** - Control the presence of potentially polluting materials within the site through optimize the site layout, process and equipment design, and operational decisions.
- **Containment/Reduction** - Sources that are part of operations and activities on site should have suitable controls to minimize and where possible reduce the release of emissions. Site management activities, such as good housekeeping and equipment maintenance schedules, should minimize and reduce the potential interaction between emission sources and meteorological events.
- **Response** - The type of response to an impact to air quality or community complaint should be documented, clearly communicated, and integrated into standard operating procedures.

The AEMP strategy should address the following key points as related to the controls and mitigations measures:

- Designate a responsible person to act as the AEMP Manager to oversee implementation of the AEMP and ensure compliance with its requirements.
- Identify training requirements for personnel; who should be trained, when training should occur, their level of responsibility, and their roles in air emission pollution prevention.
- Define required maintenance activities, frequency and documentation.
- Define response and adaptive actions in the event of a failure in the implementation of the AEMP or of a recommended mitigation measure.
- Define triggers for adaptation or modification of the AEMP in the face of changing conditions, activities or pollution risks.
- Define regular review intervals to ensure that the AEMP is working as intended and to support a culture of continuous improvement.

3.5 Monitoring Methodology

An effective AEMP should define a monitoring process to track both environmental and management plan performance. Monitoring how well the risk is being controlled (i.e. tracking performance) is an integral part of managing and controlling air emissions. Monitoring should

consider, but not be limited to, visual inspections, audits, checklists, continuous and spot measurements, and recording of meteorological conditions. The methodology for tracking performance should be informed by the emissions risk assessment (section 3.3.2).

The monitoring methodology should consider and describe, as appropriate, the following:

- Location or site for continuous and spot measurements
- Key emissions/pollutants that are tracked
- Key meteorological conditions that are tracked
- Type of monitoring, e.g. equipment selection, audit procedure, checklist, etc.
- Frequency of monitoring or checks
- Methodology supporting the monitoring type and technique, e.g. analysis
- How monitoring equipment is maintained and serviced
- Who is responsible for monitoring

3.6 Reporting

Provide details on the AEMP reporting which should relate directly to the plan objectives and SEZAD requirements. Reporting should consider, but not be limited to:

- Type of information to be reported
- The format (refer to Environmental Performance Reporting Guidance Note)
- Real time results
- Frequency of reporting
- Effectiveness of the plan in meeting objectives
- Changes to operations such as throughput levels, products handled, expansions, etc.

4 ABBREVIATIONS

Term	Definition
AEMP	Air Emission Management Plan
BMPs	Best Management Practices
CEMP	Construction Environmental Management Plan
MECA	Ministry of Environment and Climate Affairs
PDC	Port of Duqm Company SAOC
SEZAD	Special Economic Zone Authority At Duqm
SOPs	Standard Operating Procedures