

TECHNICAL GUIDELINE (Additional Information)



DEPARTMENT OF ENVIRONMENT
AND CONSERVATION

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DEC Publication: *IB-ENV/02/2004*.

1st January 2004.

AIR DISCHARGES

In addition to the requirements set out in the DEC Information Guideline for *Submission of an Application for an Environment Permit to Discharge Waste*, the following information, where applicable, should be provided as part of an application for an Environment (Waste Discharge) Permit where AIR emissions may be generated.

OUTLINE OF PROPOSAL

Describe the nature and extent of activities to be carried out on the premises including:

- process description.
- treatment plant description.
- proposed source, nature, composition and rate of waste input and/or discharge.
- impact of the proposal on the environment.

SITE PLANS & LOCATION

In addition to the A4 site plan (requested in Information Guideline), please provide two (2) A3-size drawings. All plans should be drawn to scale and indicate the following:

- dimensions of boundaries and site features.
- scale and direction of north.
- exact location of proposed discharge points to the environment (on A4 site plan as indicated above). Please number all discharge points.
- elevations of buildings and discharge points.
- name and exact location of equipment used in the processing, treatment and/or discharge of waste.
- name and exact location of equipment giving rise to such waste.
- land use within 2000 metres of the site boundary.
- location of nearest residences.

PROCESS DETAILS

Describe the manufacturing processes to be employed including:

- flowsheet.
- process and instrumentation diagrams.

- material balance.
- material safety data sheets for all chemicals used or manufactured.
- contingency procedures to avoid discharges resulting from process failure and shutdown.
- chemical storage and handling.

WASTE MINIMISATION

Provide information on waste minimisation practices that will be employed including:

- a preferred waste management plan by which the proponent will minimize the production of waste.
- information on different process options applicable to the industry and details of the options examined.
- details of proposed waste reclamation and recycling.

RISK ASSESSMENT

Provide description of risk assessment that covers:

- an assessment of the likely risk of plan failure causing an environmental hazard.
- description of plant safety measures to avoid an environmental hazard.

STACK EMISSION DETAILS

For each discharge point being applied for, please complete the table attached.

Please note - all discharge points on premises for prescribed activities require an Environment Permit. Refer to the *Environment (Prescribed Activities) Regulation 2002* for further definitions.

ENVIRONMENTAL IMPACT OF THE PROPOSAL

Provide details of:

- calculated ground level concentration of every waste proposed to be discharged to air under normal and maximum operating conditions and start up and shutdown conditions.

- (b) ground level concentrations are to be calculated using the 'Ausplume Gaussian Plume Dispersion Model' (computer package) or other DEC approved mathematical model.

A consultant who has experience in the use of the model may be engaged to do the calculations.

The data should be presented for each discharge point and for a multistack arrangement, which would lead to maximum potential emission characteristics at the boundary of the premises.

- (c) data should be presented for each discharge and for a multi-stack arrangement which would lead to maximum potential emission characteristics at the boundary of the premises.
- (d) results must be presented with all relevant input data, including any assumptions made in establishing model conditions, effects of existing on-site discharges and existing loadings from neighbouring industries
- (e) summary of the environmental impact of the proposal, e.g. what effects will emissions have on the receiving environment.

POLLUTION CONTROL EQUIPMENT

Provide details of control equipment with discharges to the environment:

- (a) for pollution control equipment, provide details on:
 - type and manufacturer.
 - performance: destruction or removal efficiency.
 - design basis: calculations, empirical data from similar applications.
 - engineering drawings and manufacturer's brochures.
 - instrumentation to monitor performance (i.e., emissions and satisfactory operation of unit).
 - any pre or post treatment needed to supplement main control device, e.g., condensers, cyclones, mist eliminators.

Please note - specific information for fabric filters, afterburners and wet scrubbers is listed later.

- (b) the disposal of any collected material (i.e. what happens to bag filter dust or scrubbing liquor from a wet scrubber etc).
- (c) arrangements for the operation and management of the systems, training of plant

operators and the ongoing involvement of consultants and equipment suppliers (if any).

- (d) maintenance procedures, in particular, precautions to avoid occasional additional discharges to the environment resulting from plant breakdowns, power failures, accidental discharges and other reasonably foreseeable situations.

(Include details of process instrumentation, alarms and interlocks to control or stop processes).

CONTROL EQUIPMENT

Specific details for commonly used pollution control devices.

Fabric Filter

Additional information to be provided for the device should include:

- (a) model number
- (b) cleaning mechanism: dust collection and disposal.
- (c) air to cloth ratio
- (d) bag material
- (e) air flow rate
- (f) inlet gas temperature
- (g) moisture content of air/dew point
- (h) mass loading
- (i) particle size distribution
- (j) opacity/pressure drop monitoring
- (k) type/nature of particles to be filtered
- (l) noise level (particularly during cleaning)

Afterburner

Provide additional information on:

- (a) foul air flow and quality (calorific value if any)
- (b) dimensions of combustion chamber (primary and secondary)
- (c) inlet temperature
- (d) temperature and residence time
- (e) calculated gas flow rate
- (f) burner size
- (g) instrumentation and interlock specifications
- (h) excess air requirement
- (i) will solid or liquid particles be incinerated
- (j) details of waste heat recovery, including gas temperatures
- (k) fan specifications
- (l) ducting design

Scrubber

Additional information to be provided for the device should include:

- (a) gas stream:
 - flow rate
 - wastes to be scrubbed including dust loading
 - temperature

- (b) scrubbing liquor:
 - flow rate
 - pH
 - temperature
 - quality (concentration of scrubbing liquid)
 - means of disposal

- (c) scrubber:
 - material of construction
 - dimensions
 - spray mechanism
 - mist elimination mechanism
 - packing: type, size, material, depth

- (d) design basis:
 - calculation for H_{tu} and N_{tu} equilibrium data
 - empirical data results from units operating elsewhere
 - throat velocity if venturi

Where an application contains insufficient information, the Director will request further information. The application cannot be acted upon until the further information sought is received and accepted as adequate.

DETAILS OF DISCHARGE POINTS (DP) AS NUMBERED ON SITE PLAN

This table is an attachment to the Technical Guideline for Air Discharge.

Details	DP1	DP2	DP3	DP4, etc.
Fuel used and alternative fuel (if any)				
Maximum sulfur content of fuels, as %by weight				
Maximum fuel mass rates in kilograms per hour				
Incinerator – maximum rate of disposal in kilograms per hour				
Aggregate number of hours of discharge per week				
Height of discharge point above ground level in meters				
Temperature of exhaust gases at the outlet in °C				
Volume flow of water vapour in m ³ per minute at discharge temperature				
Volume flow of dry gas in m ³ per minute at discharge temperature				
Geometric shape of outlet cross-section (circular, rectangle or square)				
Cross-sectional area of outlet in m ²				
Velocity of discharge at point of discharge in metres per second				
Provide details of wastes which are not discharged freely and vertically				
Describe odorous waste, e.g. 'phenolic'				