2023

Air quality and dust management Port Hedland

Port Hedland Industries Council

PHIC members are committed to continuing to implement leading dust mitigation practices in Port Hedland.

DUST MONITORING AND MANAGEMENT

The Department of Water and Environmental Regulation manages the ambient air quality monitoring network in Port Hedland.

It assumed this responsibility on 1 January 2022, fulfilling a recommendation of the Port Hedland Dust Management Taskforce accepted by the State Government in 2018.

The network was established by port users in 2009 as part of developing an integrated approach to air quality monitoring in Port Hedland.

It provided data and informed the work of the Dust Management Taskforce, supported the work of the regulator, provided the community with real-time information and assisted industry in the development of strategies and evaluation of dust impacts from the Port of Port Hedland.

The transfer project forms part of a whole-of-government approach to supporting positive outcomes for the environment, public health, and industrial development in Port Hedland.

The network will continue to be funded by industry and operated by a third-party dust specialist consultant with oversight from DWER.

CONTROLLING DUST

Port users have long recognised community concerns around dust. They have invested heavily in the implementation of leading dust mitigation practices at port operations for the past decade and this will continue.

Port users including PHIC members handling or exporting bulk commodities through the port operate under Part V environmental licences issued under the Environmental Protection Act, which set out requirements to manage, monitor and report on dust emission levels.

The licence conditions vary between individual operators, but all port users have a range of dust control measures in place and employ leading dust mitigation measures.

This is in addition to a range of existing dust control measures and leading dust management practices. These include, but are not limited to:

- Dust elimination – which focuses on the control of dust being generated, such as moisture control of the product for storage and handling, and water spray systems at key operational areas.
- Engineering or infrastructure controls such as enclosed conveyors and ship loader chutes, wind fences, vegetation barriers, and sealing major traffic areas to reduce dust emissions.
- Administrative controls including policies, plans, procedures, and work instructions used by personnel to ensure effective management of materials.

PHIC and its members have committed to achieving a zero-net increase in emissions even if iron ore exports increase and are spending millions of dollars on dust mitigation to support this commitment.

Through PHIC, industry continues to work collaboratively to continuously improve overall dust performance outcomes in Port Hedland.

REPORTING

Dust exceedances are investigated and reported to DWER by port operators in accordance with their individual licence provisions.

Land use planning also plays an important role in dust management in Port Hedland.

With the work of the Port Hedland Dust Management Taskforce completed, the State Government has implemented the Port Hedland West End Improvement Scheme No. 1.

The Hedland Maritime Initiative will manage the Port Hedland Voluntary Buyback Scheme for the area and lead the work to develop a West End Maritime Precinct.

Sources of dust in Port Hedland

The Pilbara region of Western Australia is classified, according to the Koppen-Geiger system, as BWh (hot desert) and has two primary seasons – wet and dry.

The wet season: (October to April), is dominated by high temperatures and evaporation rates with isolated intense rainfall and cyclonic activity. The dry season: (May to September), is relatively dry with mild temperatures.

According to air quality specialist Environmental Technologies and Analytics (ETA), the Pilbara region is a naturally dusty environment with wind-blown dust being a significant contributor to the particulate loading.

Sources of particulates within the Port Hedland airshed can be divided into four broad categories:

1. **Industrial:** Includes all material handling processes at the port
2. **Commercial:** Sources within this classification include all non-industrial sources particularly those contained within the Wedgefield light industrial estate and commercial areas within the airshed including along Redbank and within the west end of Porth Hedland itself.
3. **Residential:** Although not a major contributor to particulates in the Port Hedland airshed, emissions from vehicle traffic from both sealed and unsealed roads (inclusive of emissions from the exhaust, brakes and tyres), wood fires (barbeques), recreational boating and lawnmowing are sources of dust.
4. **Biogenic:** Emissions from biogenic sources can be highly variable (spatially and temporal) including sea salt, wind erosion of exposed surfaces, and wildfires.

It is important to consider that both wind erosion and wildfire can, and do, result in some of the highest daily ground level concentrations of particulates recorded in the region (SKM, 2000).

Continued improvement

Industry remains committed to implementing leading dust mitigation practices in Port Hedland and continues to work with DWER to develop best-practice dust management guidelines for port operators.

Port users have invested heavily over the past decade to reduce dust emissions and continuous improvement is a focus for all PHIC members.

They use real-time operations monitoring and meteorological data, and information from the DWER network, to inform operational decisions and alter on-site activities to minimise dust.

PHIC will continue to use third-party, independent scientific experts to analyse data from the DWER network and to provide transparent, easy-to-access information to stakeholders.

Use of LiDAR in Port Hedland

There is no Australian Standard for the operation of LiDAR equipment.

Three trials have applied LiDAR to assess dust in Port Hedland. These trials have been carried out by researchers, government and industry for varying purposes between 2011 and 2017.

The Port Hedland LiDAR trials to date highlight specific limitations, which appear to be exacerbated where there are multiple dust sources, as is the case in Port Hedland. This position is supported by DWER in its Industry Regulation fact sheet Managing dust in Port Hedland — 2018.

Please see PHIC LiDAR Fact Sheet for further details. A copy of an independent report on LiDAR trials in Port Hedland is also available here.

PHIC Members

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