PM10 EXCEEDANCE REPORT

MONITORING PERIOD

MIDDAY TO MIDDAY

22ND - 23RD FEBRUARY 2011

Revision	Prepared	Reviewed	Approved	Date	Description
1	M Tarusello	A Leonard			First Draft for Review

CONTENTS

FRONT PAGE
CONTENTS

Page No.

Figure

Table

1. PURPOSE

A daily check undertaken by the Esperance Port Sea and Land (ESPL) indicated PM_{10} concentration in excess of ambient concentration targets (stipulated by L5099/1974/12). The targets are replicated in **Table 1** below. The exceedance was recorded at Site 1 for the ***monitoring period of 1200hrs 22nd of February 2011 to 1200hrs on 23rd of February 2011***.

EPSL became technically aware of the exceedance at site 1 on the 24th of February 2011. This report is being submitted to DEC (on 08th of March 2011) seven working days after becoming technically aware of the exceedance, and is in compliance with Condition 9 of Licence L5099/1974/12.

Table 1: Emission Concentration Targets from DEC Licence Number L5099/1974/12 issued to EPSL on 6 January 2009

Emission	**Ambient concentration target**
Nickel in air	0.14 µg/m^3
Dust as PM_{10}	50 µg/m^3
Dust as TSP	90 µg/m^3

2. INVESTIGATION

2.1 Date, time and location of exceedance

The recorded PM_{10} concentration above the emission concentration target ***(Table 1)*** according to the Licence L5099/1974/12 for the monitoring period of **1200 hours 22nd February 2011 to 1200 hours 23rd January** is as follows:

- Site 1: 61.7 µg/m^3

Figure 1: Location of air quality monitoring stations.

2.2 Port Activities

The following shipping activities were occurring at the Port during the exceedance period:

- Marine Vessel (MV) Agios Konst was alongside Berth 1 loading with canola between 0800 hours 22nd of February 2011 to 2300 hours 23rd of February 2011.

Other activities include:

- 35,888 tonnes of iron ore averaged across 4 trains delivered to the Port.
- 121 tonnes of Nickel concentrate across 2 trucks delivered to the Port.

2.3 Meteorological Activities

The wind directions for the 24 hour period are in the wind arc from NE to SSE with predominant winds from the ENE (48%), E (15%), ESE (20%) and SE (8%) ***(Refer to Figure 2)***. These wind directions mean that berth 3 was upwind of site 1 in the easterly winds. Berth 2 was not upwind of site 1 since it is in a more southerly direction (refer to ***Figure 1***)***.***

The maximum hourly average wind speed of 13.2 m/s (47.5 km/hr) was recorded from the ESE at 1800 on the 22nd of February, and approximately 25% of the winds got above 10 m/s. The 'Beaufort Wind Force Scale' is a measure of understanding wind speeds in descriptive terminology. A wind speed of 13.2 m/s is described as a 'strong winds' (BOM, 2011).

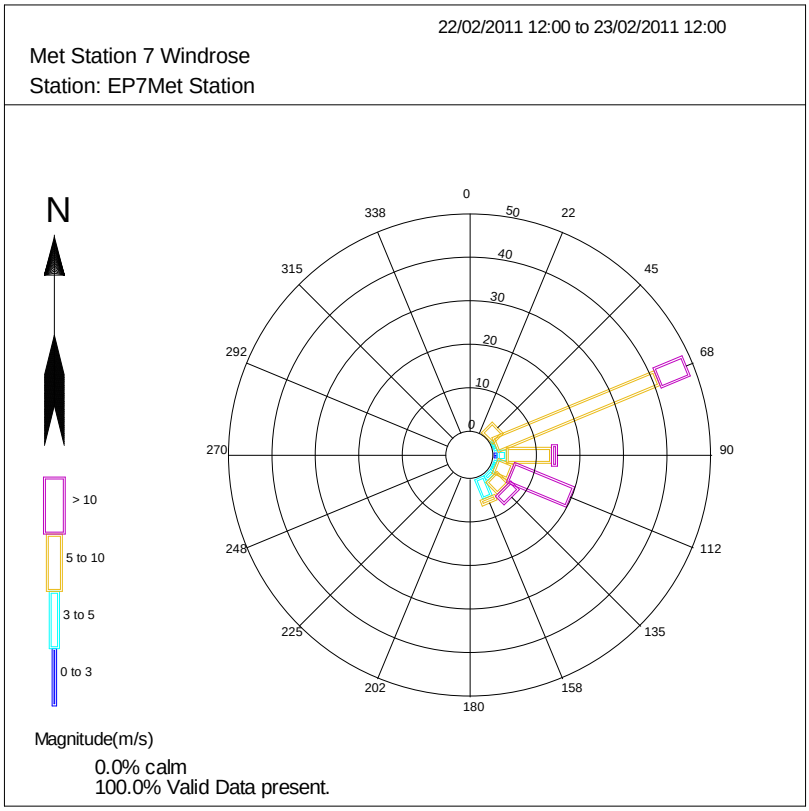

Figure 2 Windrose for the monitoring period 1200 hrs 22/02/2011 to 1200 hrs 23/02/2011. Raw data source: EP7 monitoring station, Berth 3.

2.4 PM_{10} Dust Levels (24hour period)

The 24 hour PM10 exceedance was due to the peak PM10 dust levels between 1200 to 1700 hours on the 22nd of February (***Figure 3***). The peak levels coincided with the strongest winds reaching >10 m/s wind from the ESE direction. For the rest of the monitoring period, the PM10 was below the 50ug/m^3 ambient concentration target (***Figure 3***). The dust levels at site 1 were influenced by 'strong winds' mobilising sand and sea spray from the Esperance foreshore beach directly ESE (20% of the time) and the beach ENE to E (63% of the time) from the direction of the Tearooms to the Yacht Club. These winds potentially carried iron ore dust from berth 3 but this is unlikely since iron ore has a minor PM10 component and no loading activity of iron ore were carried on berth 3 during the monitoring period.

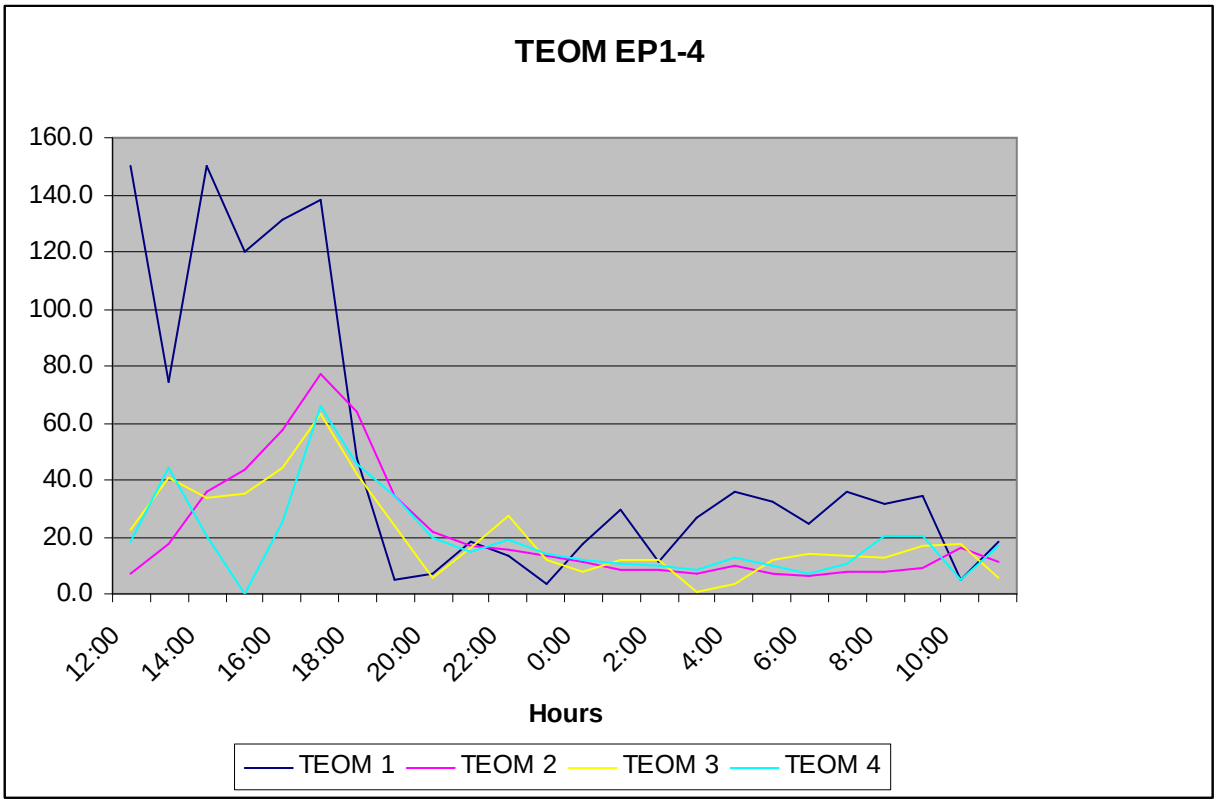

Figure 3 Line graph for the monitoring period 1200 hrs 22/02/2011 to 1200 hrs 23/02/2011. Raw data source: TEOM monitoring stations 1, 2, 3 and 4.

3. CONCLUSIONS

The investigation of the PM10 exceedance of sites 1 1200hr 22/02/2011 to 23/01/2011 cannot be attributed to the Port. The proximity to the Esperance foreshore beach and the meteorological conditions favoured the mobilisation of dust (sand and sea spray) towards Site 1. This is further supported by the fact that even though the wind conditions were in the red zone (45 to 180 degrees) sites 2, 3 and 4 where not as affected and the only difference being that they are further from the beach and that the Ports dust suppression measures are working.

3.1 Corrective Action

The cause of the exceedance was due to meteorological conditions and proximity to the Esperance Port Beach and the Port is not the source of the PM10 exceedance so no corrective action is offered.