Air quality

Report

Golden Grove air quality summary report – January to March 2015

Issued May 2015

Introduction

One of the EPA's environmental goals is clean and healthy air. To support this goal the EPA conducts ambient air quality monitoring at locations around the state.

This report contains a summary of the quarterly air quality based on data from the EPA's mobile monitoring station at Golden Grove. This station was deployed on 16 October 2014. The data, where applicable, is compared to the standards and goals set out in the National Environment Protection (Ambient Air Quality) Measure (NEPM).

Details on the NEPM, along with locations of monitoring stations and the parameters measured at each site can be found on the EPA website:

To assist in interpreting the information provided the following formats have been implemented.

- Values represented in the graphs are the maximum concentration recorded for each day for the given averaging period. Concentrations that are larger than the maximum allowed in the standard are recorded as exceedences.
- Exceedence days in BLACK provide the total number of exceedence days for the year.
- Exceedence days in RED indicate an exceedence of the NEPM standard this current month.
- Exceedence days in **BOLD** indicate the total number of exceedence days for the year and indicate a breach of the NEPM goal. Bold can be either black or red and once a site has breached the goal all subsequent results for the year will be reported this way.

Pollution from particles is the great concern with emission from industrial sources, motor vehicles and on occasions, from planned burning, bushfires and dust storms.

Total suspended particulate matters (TSP) are particles with an equivalent aerodynamic diameter of less than 50 µm. TSP consists of a mixture of large and fine particles.

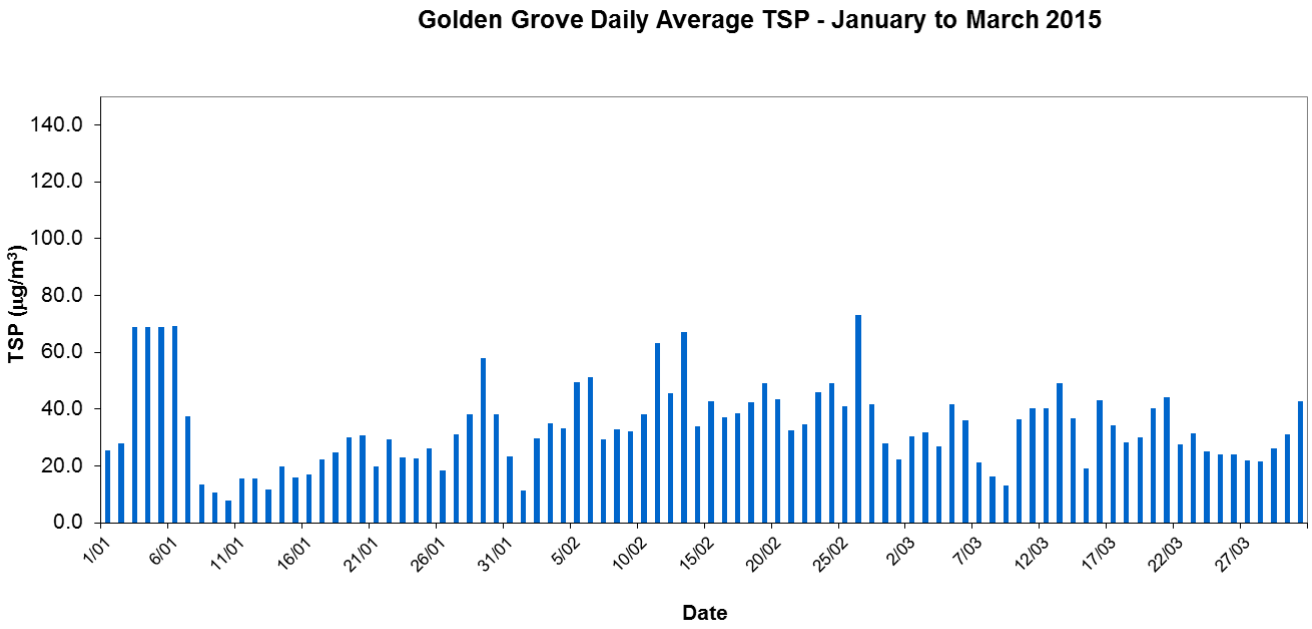
Large particle has an equivalent aerodynamic diameter of greater than 10 µm and is a source of nuisance.

Fine particles are often a complex mixture of materials arising from many sources, but are generally grouped into two categories, called PM_{10} and $PM_{2.5}$, where the number gives an idea of the range of sizes of particles. Both are able to enter the lungs and are known to have health effects (see particulate matter for further information on the nature and effects of particles).

Meteorology conditions has great effect on particulate dispersion. Specifically, wind speed and direction influent the transport and dispersion of particulate matters.

1.1 Total suspended particles (TSP)

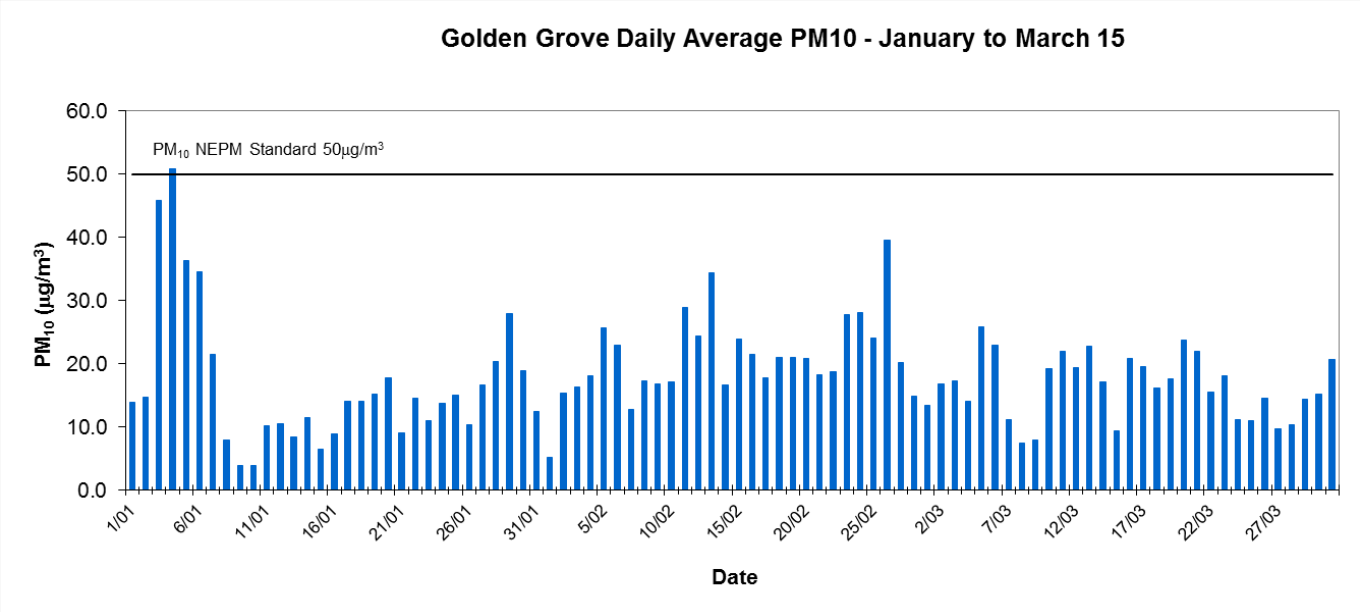
There is no 24-hour NEPM Standard for TSP particles. However, monitoring TSP can indicate the levels of visible nuisance dust in an area. TSP levels were quite moderate for this quarter, well below the WHO guideline of 120 µg/m^3.



1.2 Particles (PM_{10})

- The 24-hour NEPM Standard for PM_{10} particles is 50 µg/m^3. There was 1 exceedence at Golden Grove this quarter due to the Sampson Flat bush fire which occurred from 2 to 9 January 2015.
- Total NEPM Exceedence days for 2015

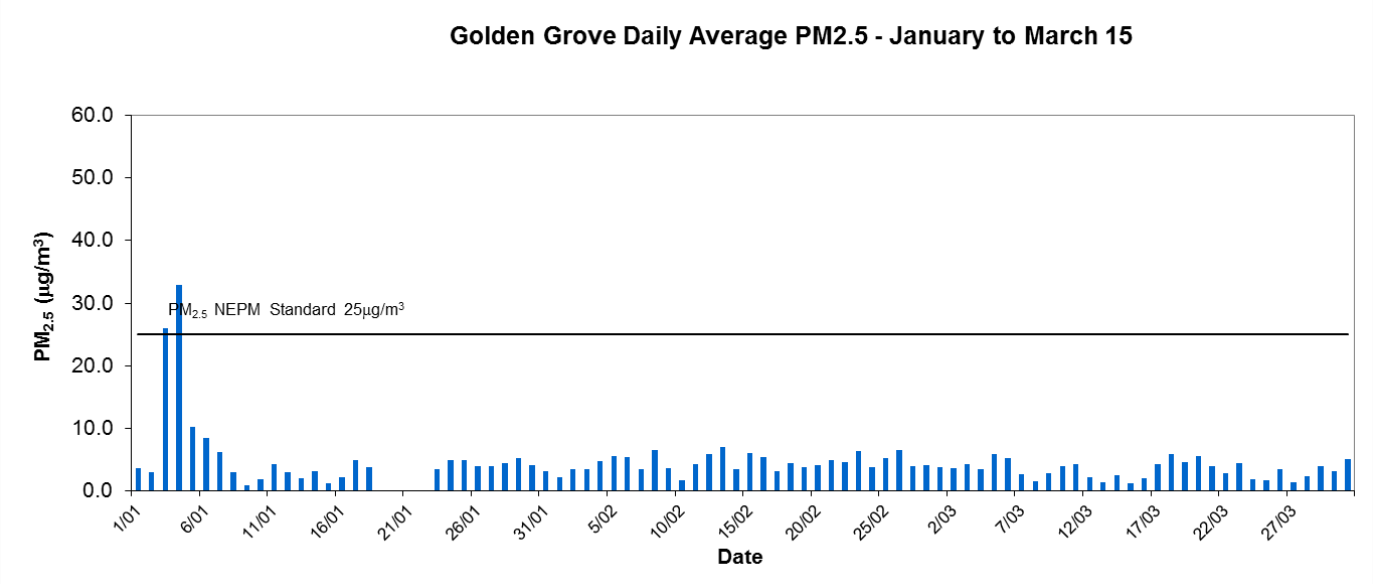
  Golden Grove: 1
- This is less than the NEPM Goal of 5 per year.



1.3 Particles ($PM_{2.5}$)

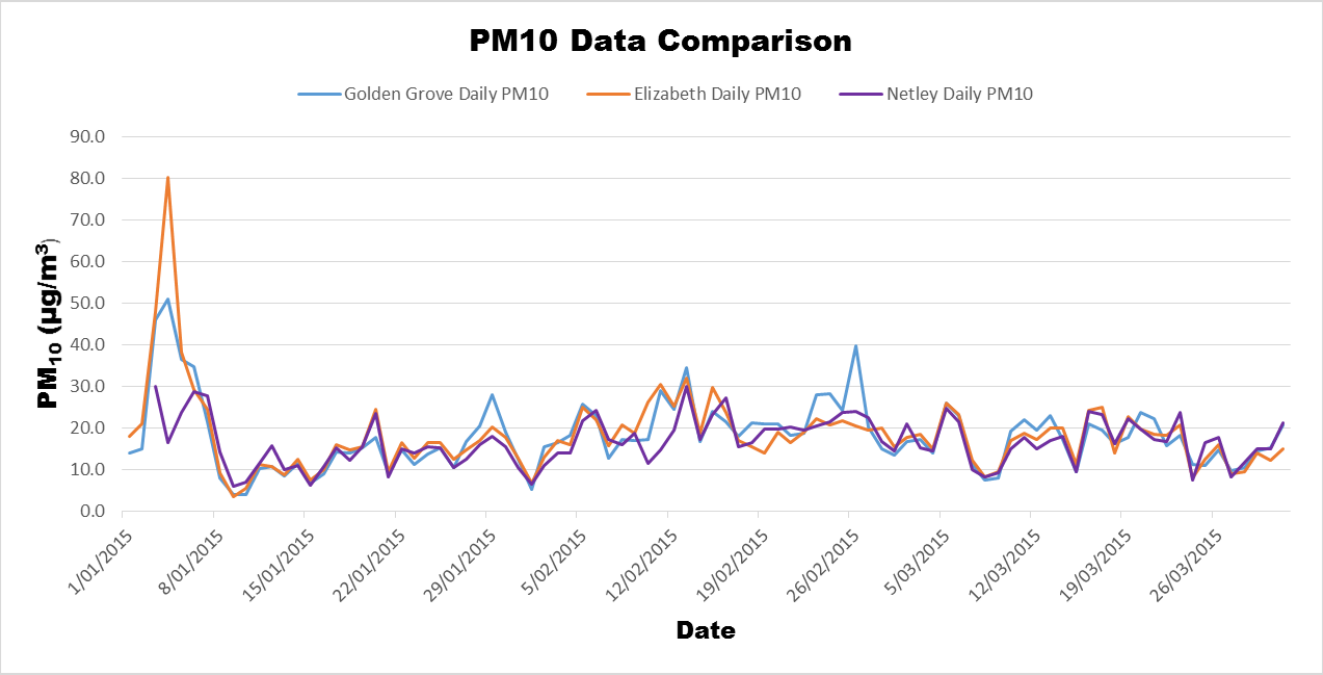
- The 24-hour NEPM Standard for $PM_{2.5}$ particles is 25 µg/m^3. There were 2 exceedences at Golden Grove this quarter due to the Sampson Flat bush fire which occurred from 2 to 9 January 2015.
- Total NEPM Exceedence days for 2015

  Golden Grove: 2
- This is less than the NEPM Goal of 5 per year.



1.4 PM_{10} concentration comparison

PM_{10} data from Golden Grove, Elizabeth and Netley stations was presented in the below graph. With the exception of the time of the Sampson Flat bush fire period, the PM_{10} concentration is very similar, differing only in two spikes from Golden Grove site on 29 January and 26 February 2015, this might be due to local activities.



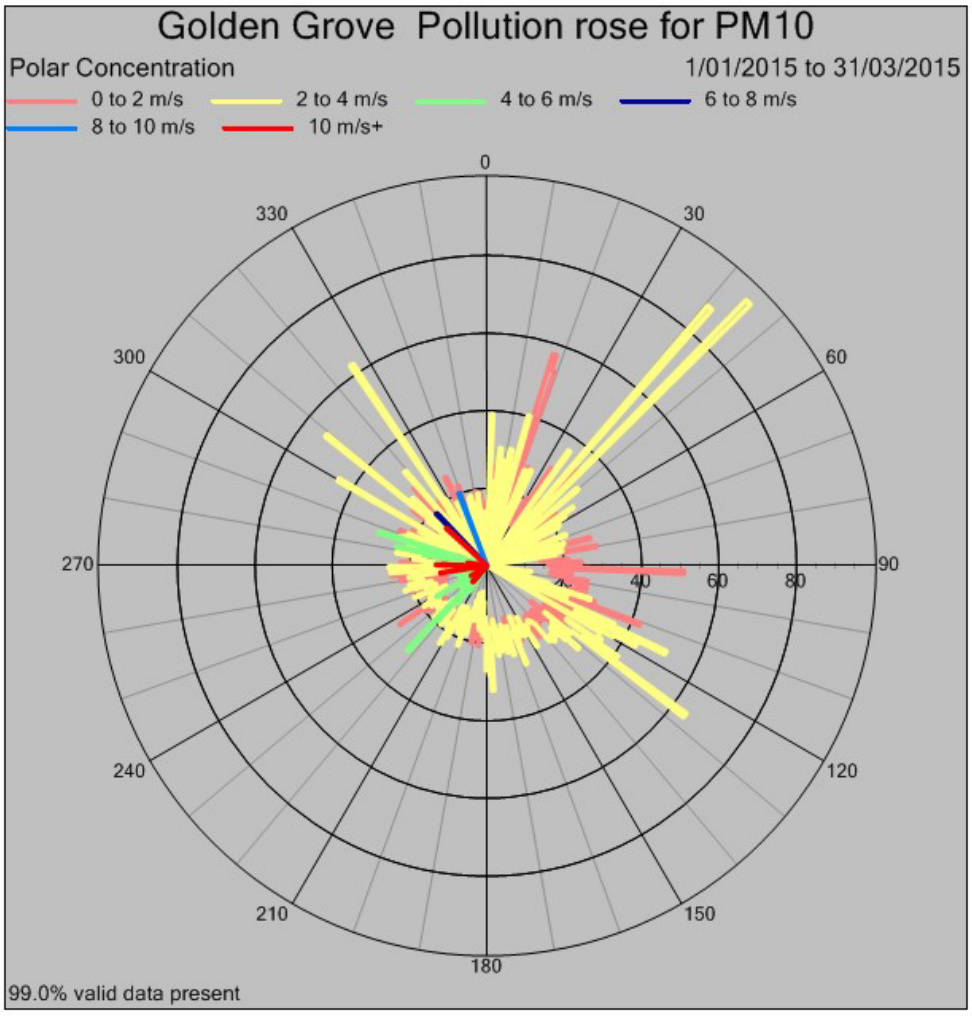
1.5 Meteorology and pollution rose

10-minute wind speed and direction data and PM_{10} concentration were used for plotting pollution rose.

- In January, the wind direction was predominantly from south east with maximum wind speed at 16.4 m/s on 13/01/2015 at 7:50 AM. High PM_{10} concentration was seen when the wind blew from south east direction at the speed between 2 to 4 m/s. Except the spike from the bush fire, at some period PM_{10} concentration has exceeded the 50µg/m^3 NEPM limit.

- In February, the wind direction was predominantly from south east with maximum wind speed at 3.8 m/s on 28/02/2015 at 11:40 AM. High PM_{10} concentration was seen when the wind blew from south east and north east direction at the speed between 2 to 4 m/s.

- In March, the wind direction was predominantly from south west with maximum wind speed at 14.5 m/s on 18/03/2015 at 3:40 AM. High PM_{10} concentration was seen when the wind blew from south east and north west direction at the speed between 2 to 4 m/s.



Further information

Legislation

Online legislation is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
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