

Air quality

Lead (Pb)

South Australia's

Environmental trend and condition report card 2018



STATEWIDE



Trend
Stable



Condition
Very good



Reliability
Very good

Trend

Airborne lead is not an issue in South Australia, except in Port Pirie where annual average levels have been variable and below the national standard.

Airborne lead is generally not a concern in South Australia because of the banning of lead in petrol in 2002, with levels assumed to be very low and stable across most of the state.

An exception is Port Pirie, where emissions from the local smelter contribute to elevated levels.

This assessment is of the annual average level of airborne lead at two monitoring sites in Port Pirie (top figure).

Annual average levels have been variable since 2011 and have largely remained below the national standard (bottom figure).

In Port Pirie, the long-term trend in airborne lead is expected to improve significantly as a result of new technology being installed at the local smelter as part of the Port Pirie Smelter Transformation.

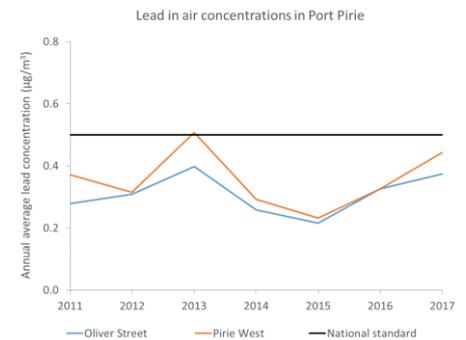
Condition

The condition of airborne lead is rated as very good across most of the state and fair in Port Pirie.

In 2017, annual average levels of airborne lead across most of South Australia were assumed to be very low. In Port Pirie, the concentration of airborne lead was 0.37 micrograms per cubic metre ($\mu\text{g}/\text{m}^3$) at Oliver Street and 0.44 $\mu\text{g}/\text{m}^3$ at Pirie West. These are less than the national standard of 0.50 $\mu\text{g}/\text{m}^3$ (bottom figure).

Blood lead levels of Port Pirie children aged under five years tested in 2017 averaged around 4.5 micrograms per decilitre ($\mu\text{g}/\text{dL}$). More than half of the tested population had blood lead levels of 5 $\mu\text{g}/\text{dL}$ or below, which is a significant improvement on the results from 2008.

Levels of airborne lead in Port Pirie are below the national standard and are expected to reduce in the future



Why is air quality important?

Exposure to lead can have harmful effects on people, and there is no safe level of exposure. This applies to people of any age, but health risks are highest for unborn babies, infants and children under five years of age because their brains are still developing, and they absorb and retain more lead in their bodies.

Children's blood lead levels are indicators of community lead exposure. The National Health and Medical Research Council has a recommended exposure investigation level of 5 $\mu\text{g}/\text{dL}$.

What are the pressures?

Port Pirie has an advanced metals recovery and refining facility, following an upgrade of the existing primary lead smelter. The smelter has been in continuous operation since 1889. It is an important contributor to the state economy and is a major employer in the region.

Over time, lead dust produced during smelter operations has deposited in the local environment. Together with ongoing emissions, this is a persistent source of lead exposure for the Port Pirie community

What is being done?

A range of actions over decades to reduce lead exposure and emissions have achieved a sustained reduction in children's blood lead levels in Port Pirie.

Elevated emissions, technology constraints and the need to further reduce community lead exposure, resulted in an agreement between the owners of the smelter and government to upgrade the facility. The Port Pirie Smelter Transformation is expected to significantly reduce airborne lead over the coming years, with subsequent reductions in community blood lead levels

For further information see: [technical information](#)



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