



Cockburn cement

Dust and odour from Cockburn cement has been the subject of contention in the local community for a number of years. Despite the improvements in stack (chimney) emissions, dust from exposed stockpiles, graded roads and open areas may be a source of dust in the community under certain wind conditions.

The Department of Water and Environmental Regulation (DWER) has issued an updated operating licence to Cockburn Cement Ltd. (CCL) that requires tighter controls and extra monitoring so their contribution to dust in the community can be better understood. Intermittent odour emissions continue although the Cockburn Cement activity allegedly responsible for the odour has not been identified.

Community participation

The DWER carried out an intensive community participation program to investigate dust and odour sources in the community. In August 2019 CCL submitted a report on the likely sources of odour from the facility. DWER notified CCL and registered community stakeholders that it had commenced an evidence-based review of license (L4533/1967/15). This process may identify and review measures to mitigate the risk of odour impacts on the local community and if necessary, specify odour emission controls to ensure they are effective and efficient in mitigating the potential odour impacts from the facility. Stakeholders and the community will have an opportunity to comment on the amendments to the license through DWER.

DWER continues to investigate odour and dust complaints from the community through its Pollution Watch Hotline 1300 784 682 (24hours) and email: pollutionwatch@dwer.wa.gov.au. Further information is provided on DWER's webpage. [Cockburn air quality \(external link\)](#).

Cockburn Cement Ltd also operate a Community Hotline 1800 156 826 and email community@cockburncement.com.au for dust and odour complaints. A webpage publishes real-time emissions data from the facility [https://cockburncementcommunity.com.au/ \(external link\)](https://cockburncementcommunity.com.au/)

Air pollution and health

Are gaseous pollutants emitted from CCL going to damage my and my families' health?

Most industrial processes will generate gaseous air pollutants. The production of cement and quicklime is no different and a number of pollutants are emitted from CCL during their normal operations. The risk of health impacts depends on when and where pollutants are found and their concentration.

For most air pollutants standards or guideline levels have been developed to protect human health. The Department of Water and Environmental Regulation (DWER) has monitored a range of gaseous pollutants from CCL and found them to be well below national standards and guidelines.

What about burning coal?

All fuels, including coal, produce air pollutants when they are being burnt. Potentially harmful gases are produced by the burning of petrol, diesel, gas and even wood. The most important thing, however, is that air pollutants generated from these fuels do not exceed air quality standards. At present, monitoring done by DWER shows gaseous pollutants from the burning of coal at CCL does not exceed air quality standards.

In principle the Department of Health does not support coal burning. Industries that continue to rely on burning coal are required to control emissions in accordance with DWER licence conditions and to monitor and comply with air quality guidelines established to protect health.

Dust and particles are emitted from the factory, is this problem?

There are two categories of dust emitted from CCL that are monitored. These are very fine dust (particulate matter less than 10 micrometres in diameter also known as PM₁₀) and lime and cement dust.

PM₁₀ means all sizes of particles 10 micrometres and smaller such as PM_{2.5}, PM_{1.0} and nano particles. PM₁₀ is mostly produced by combustion and because particles are very small they can be breathed into your lungs. There is evidence that dust that falls into the PM₁₀ category can affect your lungs and heart, depending on how much you breathe and how sensitive you are to it. Most people will not be affected unless concentrations are at high levels and stay there for a long period.

There is a national standard for PM₁₀ levels in air and it is measured at air monitoring sites around CCL. There have been times in the past when monitored concentrations exceeded the national standard, but these are intermittent and generally are not far above the standard. Some people may be affected by these increased concentrations of PM₁₀ but most people won't be.

Cement and lime dusts, including dust larger than PM₁₀ can settle on surfaces around homes. Larger than PM₁₀ particles can cause irritation of the eyes, nose and throat but are generally not inhaled deep into the lungs. There is no evidence that these dusts cause cancer or long-term breathing problems in the general population.

Nevertheless, these dusts can cause a nuisance, may discolour or damage surfaces and interfere with residents' sense of wellbeing and enjoyment of the neighbourhood. The Department of Health is aware that nuisance dust is affecting some people in the Cockburn area and that some people are concerned that Cockburn Cement Ltd is the main source of nuisance dust.

What are the air quality standards for particle pollution?

The World Health Organisation (WHO) recommends that air quality guidelines are set as low as possible. The Australian air quality standards are among the lowest in the world and similar as those recommended by the WHO.

| Australian National Environment Protection Measures (NEPM) for particulates | | WHO for particulates | |
|---|------------------------------|-------------------------------|-------------------------------|
| PM ₁₀ | PM _{2.5} | PM ₁₀ | PM _{2.5} |
| 50 µg/m ³ (24 h) | 25 µg/m ³ (24 h) | 50 µg/m ³ (24 h) | 25 µg/m ³ (24 h) |
| 25 µg/m ³ (annual) | 8 µg/m ³ (annual) | 20 µg/m ³ (annual) | 10 µg/m ³ (annual) |

Table 1: Australian and WHO air quality standards

The current scientific understanding of the health effects of air pollution comes from studies of large populations conducted over many years. Large numbers of people are needed because only a small proportion of people will be affected by increases in air pollution. Of course, as air pollution concentrations get higher, the proportion of people affected will also increase, which is why there are standards.

Why can't particulate levels be set to zero?

It would be impossible to have zero particle levels in air. Particulates are generated from soil erosion, sea spray, volcanoes, plants and bush fires, through everyday activities such as gardening, cleaning, animal dander, agriculture, industrial and manufacturing processes and traffic, to name a few. Standards are set to be as low as possible without making low levels impossible to achieve.

What happens when standards are not met?

DWER monitors air quality across the metropolitan and regional areas and may condition prescribed operations to undertake their own monitoring. Every time a standard is breached the DWER investigates the breach and in some cases reports the breach to the Department of Health. Breaches from the broader air monitoring network occur every year as a result of bushfires and occasionally from prescribed burns. DWER compiles an air quality report every year and submits it to National Environment Protection Council. All this information is available on the DWER website.

Is National Pollutant Inventory (NPI) data a good indicator of air quality?

NPI data is very useful for industry to understand and manage the efficiency of their processes. It is also very useful for the public to learn about emission sources in their local area. It does not provide information on air quality standards within a specific area.

Metals

Are there high levels of metals in the dust from CCL?

Metals have been detected in the cement dust but at levels well below what is considered dangerous to human health. In 2012, the DOH measured metals in dusts collected in specialised collection gauges, designed to ensure that only the dust which has settled from the air is collected.

Odour

Odour from CCL is an ongoing problem. The specific cause of the odour is still uncertain and DWER continue to investigate odour complaints. Gaseous pollutants that may cause the odours have not been found to be elevated above health standards. Odours can have indirect health impacts because they are a nuisance and may make you feel sick or stressed.

Can the government do a health study?

The decision for undertaking a health study is based on how well data can be collected and used to interpret whether there may be an association between what people are experiencing and a specific source. There is no doubt that exposure to air pollution must be managed to prevent negative effects on health. Studies that have been undertaken generally involve large populations and are conducted over many years. There are three reasons why large numbers and long time periods are required.

The first is that the total amount of serious disease caused by pollution across a population is low. That means that out of all the people who are breathing the air pollutants only a very small number are affected. The number affected increases as the air pollution gets worse but very high levels are required before higher numbers of us will experience symptoms. This is the reason that the focus is on managing air quality levels so that they remain low and health is protected. The second reason is that air pollution is only one of many causes of the diseases/symptoms we are concerned about. Therefore, researcher need large numbers of people and very high air pollution to separate air pollution effects as the potential reason for those diseases after accounting for all other potential causes. Finally, some of the diseases take many years to develop so populations have to be studied over a long period.

Doing studies in a small population, like the surrounding suburbs of CCL, is difficult because in the small numbers of people in the area it is highly unlikely that, on average, the health study would conclusively show any effects are from the pollution, even if there are individuals with diseases normally associated with pollution. This 'lack of evidence' as a result of study limitations may then cause more uncertainty and hinder further attempts to control emissions – that is, a claim can be made that the lack of evidence proves that there are no health effects. As such it is best to apply air pollution standards/guidelines which have been developed from knowledge gathered from more robust large scale international and national studies and that the government ensures industries comply with their license conditions to keep pollution below the health standards to protect health.

What can I do if I'm concerned about my health and the health of my family?

The Department of Health strongly encourages people who feel unwell to visit their GP and request the GP report any symptoms to the Department of Health Public Health Physician if the GP feels the symptoms could be caused by exposures. By doing this the Department of Health can better monitor health complaints and determine if these are increasing. The Department of Health considers that the dust and odour impacts on the amenity of some residents is unacceptable and must be addressed by the company. The evidence to date suggests that emissions from CCL are not causing major health concerns.

I have had my hair tested and harmful metal pollutants have been found. Should I be concerned?

Hair testing is relatively inexpensive however; it is not a reliable indicator of exposure and is not diagnostic for metal toxicity. If hair testing has been undertaken, then a clinical toxicologist should assess the results based on medical and exposure history. For more information about hair testing see [Measuring heavy metals in human hair \(external link\)](#).

What is the Health Department doing?

The Department of Health is concerned about keeping people healthy and triggered the investigation that led to the Legislative Council enquiry on CCL in 2010. As a result of the inquiry, CCL was required to improve its emission controls and implement monitoring to demonstrate that it is compliant with the air quality conditions in its licence. The license was updated to tighten monitoring. The current license is designed to ensure that pollutants released by CCL are managed to the extent that they do not cause the air quality guidelines to be exceeded where people live. The monitoring plan, CCL licence and air quality programs are publicly available on DWER's webpage: [Cockburn air quality \(external link\)](#).

The Department of Health through its Environmental Health Directorate (EHD) provides information and advice to individuals in the community, the local council and DWER. The Department of Health has invited school principals and parents of school children in

the area to discuss their concerns with the EHD and has invited GPs to contact the Department of Health when they are concerned a patient is being affected by air pollution.

What is happening now?

DWER has taken action against CCL for alleged unreasonable emissions (odour) between January and April 2019 under section 49(5) of the EP Act. Further information is provided on DWER's webpage: [Cockburn air quality \(external link\)](#).

More information

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