



Kwinana Background Air Quality Study Phase 4

Phase 4 of the Kwinana Background Air Quality Study was conducted over an 18-month period from 2013 to 2014.

The **Kwinana Background Air Quality Study – Phase 4 report** is available on the Department of Environment Regulation (DER) website at www.der.wa.gov.au under Air quality publications.

For information on the Study, please email info@der.wa.gov.au.

The Study

Phase 4 of the Study used a new and improved measurement instrument called a Fourier Transform Infrared Spectrometer (FTIR) to measure air quality averaged over one-hour periods. Previous phases of the Study, conducted in 2005–2006, 2007–2008 and 2009–2010, took samples over longer time periods of up to several days.



FTIR setup—light source in the distance aligned with the detector

The aim of Phase 4 was to identify any short-term air quality issues that may be experienced within the community.

Phase 4 measured air quality at 10 sites, as shown on the map below.



Map of the sampling sites

Ammonia and a suite of volatile organic compounds (VOCs), such as benzene, toluene, acetone, ethylbenzene, carbon disulfide, xylenes, total aldehydes were measured.

Measurements were taken between 9am and 3pm. Sixty-nine measurement sessions were conducted.

Continuous measurements over February and March were also conducted at the Kwinana BP Cogeneration facility to assess diurnal variations in air quality.

Kwinana Airshed Study Advisory Group

The Kwinana Airshed Study Advisory Group comprises representatives from industry, local and State Government, and community groups. The advisory group designed the Study with input from the community through a consultation process involving an online survey and two community forums.

Summary of Results

The Study confirmed the results from the previous Phases 1 to 3 Studies, which found the levels of detected target pollutants to be low and below the air quality criteria. Results from the majority of sites located in residential areas did not show any significant VOCs or ammonia levels, even when odours were observed. Odours were detected at six of the 10 sites, with Wattleup and Beeliam Oval recording the most odour events during monitoring. The continuous measurement data showed that levels of ammonia and VOCs peaked from early evening to the early hours of the morning, but the levels were still low.

The Study confirmed the major source of many of the target compounds and odours detected were from commercial and industrial activities in the Kwinana Industrial Area. Contributions from vehicle emissions at sites located close to the Kwinana Freeway were also observed.

Conclusion

The FTIR was found to be an excellent instrument for the measurement of short-term air quality (one-hour averages).

The results are representative of what might be expected around a major industrial area. All compounds measured were found to be lower than health limit criteria set by the Department of Health.

More Information

For advice on any other Air Quality matter, please contact DER on +61 8 6467 5000.

This document is available in alternative formats and other languages on request.

Related Documents

Additional publications about Air Quality are available online on DER's website at www.der.wa.gov.au or by contacting the Department on +61 8 6467 5000.

Legislation

This document is provided for guidance only. It should not be relied upon to address every aspect of the relevant legislation.

Please refer to the *Environmental Protection Act 1986* available from the State Law Publisher. Free electronic copies are available from State Law Publisher website at www.slp.wa.gov.au.

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