Ektimo

Experts in air quality, odour and emission monitoring.

Emission Testing Report

Report: R018769

Sika Australia Pty Ltd, Wetherill Park

ilac-MRA NATA

Accredited for compliance with ISO/IEC 17025 - Testing. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration, and inspection reports.

Document Information

Client Name:	Sika Australia Pty Ltd
Report Number:	R018769
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Attention:	Tanya Ballantyne
Address:	55 Elizabeth St Wetherill Park NSW 2164
Testing Laboratory:	Ektimo Pty Ltd, ABN 86 600 381 413

Report Authorisation

Sahad Musthafa
Air Monitoring Consultant

NATA Accredited Laboratory
No. 14601

Steven Cooper
Ektimo Signatory

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Please note that only numerical results pertaining to measurements conducted directly by Ektimo are covered by Ektimo terms of NATA accreditation as described in the Test Methods table. This does not include calculations that use data supplied by third-parties, comments, conclusions, or recommendations based upon the results. Refer to Test Methods section for full details of testing covered by NATA accreditation.

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1 Executive Summary

1.1 Background

Ektimo was engaged by Sika Australia Pty Ltd to perform emission testing at their Wetherill Park plant. Testing was carried out in accordance with Environment Protection Licence (EPL) 6459.

1.2 Project Objective & Overview

The objective of the project was to conduct a monitoring programme to quantify emissions from one discharge point to determine compliance with Sika Australia Pty Ltd's Environmental Licence.

Monitoring was performed as follows:

Location	Test Date	Test Parameters*
EPA 1 – Concrete Powders Stack	28 May 2024	Solid particles

* Flow rate, velocity, temperature, and moisture were also determined.

All results are reported on a dry basis at STP.

Plant operating conditions have been noted in this report.

1.3 Licence Comparison

The following licence comparison table shows that all analytes are within the licence limit set by the NSW EPA as per licence 6459 (last amended on 9 December 2024).

EPA	Location Description	Unit of Measure	Parameter	Licence Limit	Detected Values 28-May-25
1	Concrete Powders Stack	mg/m^3 at STP dry	Solid Particles	40	<2

Please note that the measurement uncertainty associated with the test results was not considered when determining whether the results were compliant or non-compliant.

2 Results

2.1 EPA 1 – Concrete Powders Stack

Date	28/05/2025	**Client**	Sika Australia
Report	R018769	**Stack ID**	EPA 1 - Concrete Powders Stack
Licence No.	6459	**Location**	Wetherill Park
Ektimo Staff	Mohamed Trabelsi & Ahmad Ramiz	**State**	NSW
Process Conditions	Please refer to client records.		250411

Stack Parameters		
Moisture content, %v/v	0.8	
Gas molecular weight, g/g mole	28.9 (wet)	29.0 (dry)
Gas density at STP, kg/m³	1.29 (wet)	1.29 (dry)
Gas density at discharge conditions, kg/m³	1.20	
Gas Flow Parameters		
Flow measurement time(s) (hhmm)	0940 & 1050	
Temperature, °C	21	
Temperature, K	294	
Ambient pressure, kPa	101	
Stack pressure, kPa	102	
Velocity at sampling plane, m/s	24	
Volumetric flow rate, actual, m³/s	2.7	
Volumetric flow rate (wet STP), m³/s	2.5	
Volumetric flow rate (dry STP), m³/s	2.5	
Mass flow rate (wet basis), kg/h	12000	

Isokinetic Results	Results	
Sampling time	0944-1046	
	Concentration mg/m³	Mass Rate g/min
Solid particles	<2	<0.3
Isokinetic Sampling Parameters		
Sampling time, min	60	
Isokinetic rate, %	99	
Gravimetric analysis date (total particulate)	30-05-2025	

3 Sample Plane Compliance

3.1 EPA 1 – Concrete Powders Stack

Sampling Plane Details	
Source tested	Exhaust vent
Sampling plane dimensions	375 mm
Sampling plane area	0.11 m²
Sampling port size, number & depth	2" Flange (x2), 70 mm
Duct orientation & shape	Vertical Circular
Downstream disturbance	Exit 1.5 D
Upstream disturbance	Bend 2.5 D
No. traverses & points sampled	2 12
Sample plane conformance to AS 4323.1	Conforming but non-ideal

The sampling plane is deemed to be non-ideal due to the following reasons:
The sampling plane is too near to the downstream disturbance but is greater than or equal to 1D
The sampling plane is too near to the upstream disturbance but is greater than or equal to 2D

4 Plant Operating Conditions

Based on information received from Sika Australia Pty Ltd personnel, it is our understanding that samples were collected during typical plant operations.

See Sika Australia Pty Ltd records for complete process conditions.

5 Test Methods

All sampling and analysis were performed by Ektimo unless otherwise specified. Specific details of the methods are available upon request.

Parameter	Sampling method	Analysis method	Uncertainty*	NATA accredited Sampling	NATA accredited Analysis
Sampling points - Selection	NSW EPA TM-1 (AS 4323.1)	NA	NA	✓	NA
Flow rate, temperature & velocity	NSW EPA TM-2 (USEPA Method 2)	NSW EPA TM-2 (USEPA Method 2)	8%, 2%, 7%	NA	✓
Moisture content	NSW EPA TM-22 (USEPA Method 4)	NSW EPA TM-22 (USEPA Method 4)	8%	✓	✓
Solid particles (total)	NSW EPA TM-15 (AS 4323.2)	NSW EPA TM-15 (AS 4323.2)	3%	✓	✓††

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* Uncertainties cited in this table are estimated using typical values and are calculated at the 95% confidence level (coverage factor = 2).

†† Gravimetric analysis conducted at the Ektimo NSW laboratory.

6 Quality Assurance/Quality Control Information

Ektimo is accredited by the National Association of Testing Authorities (NATA) for the sampling and analysis of air pollutants from industrial sources. Unless otherwise stated test methods used are accredited with the National Association of Testing Authorities. For full details, search for Ektimo at NATA's website www.nata.com.au.

Ektimo is accredited by NATA to ISO/IEC 17025 - Testing. ISO/IEC 17025 - Testing requires that a laboratory have adequate equipment to perform the testing, as well as laboratory personnel with the competence to perform the testing. This quality assurance system is administered and maintained by the Quality Director.

NATA is a member of APAC (Asia Pacific Accreditation Co-operation) and of ILAC (International Laboratory Accreditation Co-operation). Through mutual recognition arrangements with these organisations, NATA accreditation is recognised worldwide.

Unless specifically noted, all samples were collected and handled in accordance with Ektimo's QA/QC standards.

7 Definitions

The following symbols and abbreviations may be used in this test report:

% v/v	Volume to volume ratio, dry basis
~	Approximately
<	Less than
>	Greater than
≥	Greater than or equal to
AS	Australian Standard
CEM/CEMS	Continuous emission monitoring/Continuous emission monitoring system
CTM	Conditional test method
D	Duct diameter or equivalent duct diameter for rectangular ducts
D_{50}	'Cut size' of a cyclone is defined as the particle diameter at which the cyclone achieves a 50% collection efficiency i.e. half of the particles are retained by the cyclone and half pass through it. The D_{50} method simplifies the capture efficiency distribution by assuming that a given cyclone stage captures all of the particles with a diameter equal to or greater than the D_{50} of that cyclone and less than the D_{50} of the preceding cyclone.
DECC	Department of Environment & Climate Change (NSW)
Disturbance	A flow obstruction or instability in the direction of the flow which may impede accurate flow determination. This includes centrifugal fans, axial fans, partially closed or closed dampers, louvres, bends, connections, junctions, direction changes or changes in pipe diameter.
EPA	Environment Protection Authority
FTIR	Fourier transform infra-red
ISC	Intersociety Committee, Methods of Air Sampling and Analysis
ISO	International Organisation for Standardisation
ITE	Individual threshold estimate
I-TEQ	International toxic equivalents
Lower bound	When an analyte is not present above the detection limit, the result is assumed to be equal to zero.
Medium bound	When an analyte is not present above the detection limit, the result is assumed to be equal to half of the detection limit.
NA	Not applicable
NATA	National Association of Testing Authorities
NIOSH	National Institute of Occupational Safety and Health
NT	Not tested or results not required
OM	Other approved method
STP	Standard temperature and pressure. Gas volumes and concentrations are expressed on a dry basis at 0 °C, at discharge oxygen concentration and an absolute pressure of 101.325 kPa.
TM	Test method
TOC	Total organic carbon. This is the sum of all compounds of carbon which contain at least one carbon-to-carbon bond, plus methane and its derivatives.
USEPA	United States Environmental Protection Agency
Velocity difference	The percentage difference between the average of initial flows and after flows.
Vic EPA	Victorian Environment Protection Authority
VOC	Volatile organic compound. A carbon-based chemical compound with a vapour pressure of at least 0.010 kPa at 25°C or having a corresponding volatility under the given conditions of use. VOCs may contain oxygen, nitrogen and other elements. VOCs do not include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonate salts.
Upper bound	When an analyte is not present above the detection limit, the result is assumed to be equal to the detection limit.
95% confidence interval	Range of values that contains the true result with 95% certainty. This means there is a 5% risk that the true result is outside this range

8 Appendices

Appendix A: Site Image

Image 1. EPA 1 – Concrete Powders Stack

Ektimo

Experts in air quality, odour and emission monitoring.

Melbourne
(Head Office)
26 Redland Dr
Mitcham, VIC 3132

Wollongong
1/10 Doyle Ave
Unanderra
NSW 2526

Brisbane
3/109 Riverside Pl
Morningside
QLD 4170

Perth
52 Cooper Rd
Cockburn Central
WA 6164

1300 364 005

ektimo.com.au