



In association with



Test Report: Dust Fallout Monitoring – November 2025

Prepared for

Saldanha Bay Municipality

AQ344

Test Dates: 10 October to 7 November 2025

EXECUTIVE SUMMARY

Dust fallout sampling was conducted by Argos Scientific Africa (Pty) Ltd. on behalf of Skyside South Africa (Pty) Ltd. since Sept 2024 at seven (7) sites in the Saldanha Bay Municipal area. Sampling commenced in February 2015, and samplers are exchanged and collected monthly.

There was valid data for all (7) samples collected, resulting in 100% data capture for the period under review. This report covers the period 10 October and 7 November 2025

There were **no exceedances** of the South African National Dust Control Regulations residential limit of 600mg/m²/day for the period under review.

There were **no exceedances** of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during the month for sites classed as non-residential.

Net lead masses ranged between 2µg and 17µg during the review period. These are possibly a better measure than concentration when assessing “heavy metal” levels in dust fallout.

Meteorological conditions at Saldanha for the review period were characterised by moderate to strong winds from the south (S), southwest (SW) with an occasional light to moderate bias from the northwest (NW). There was an 2.7% occurrence of calm conditions during the review period.

REPORT DETAILS

REFERENCE	AQ0344/202511
REPORT TITLE	Dust Fallout Monitoring, November 2025
DATE SUBMITTED	13 January 2026
CLIENT	René Toesie Saldanha Bay Municipality Pick and Pay Centre VREDENBURG E-mail: rene.toesie@sbm.gov.za
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SIGNED	GRR
APPROVER	G Ravenscroft Signed: 
STATUS	Final
NOTICE	

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ABBREVIATIONS

BDL	Below Detection Limit
DEAT	Department of Environment Affairs and Tourism
EPA	See US EPA
ℓ/min	Litres per minute
m.s ⁻¹	Metres per second
m ³	Cubic metres
Max	Maximum
mg/m ³	milligrams per cubic metre
Min	Minimum
PM ₁₀	Particulate matter of aerodynamic diameter less than 10mm
ppm	Parts per million
SABS	South African Bureau of Standards
SW	Southwest
US EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WHO	World Health Organisation

1 INTRODUCTION

Dust fallout sampling was conducted by Argos Scientific Africa (Pty) Ltd. on behalf of Skyside South Africa (Pty) Ltd. since November 2024 at seven (7) sites, including the monitoring and heavy metals (iron, lead, zinc, manganese and copper), in the Saldanha Bay Municipal Area.

Sampling initially commenced in 2015, and samplers are exchanged and collected monthly.

A dust fallout and metals contamination impact assessment will be performed using this data.

1.1 Scope of Work

Argos Scientific's understanding of the scope of work is as follows:

- To measure dust fallout rates at seven (7) sampling points.
- Monthly collection of samples for duration of the project.
- Monthly sample analysis of seven (7) gravimetric samples per month.
- Elemental sample analysis of samples for iron, lead, zinc, manganese and copper.
- Monthly results to be sent to the client in electronic format.
- Data interpretation and reporting to be submitted electronically.

2 METHODOLOGY

2.1 Sample Location

Dust fallout sampling was conducted the seven (7) sites detailed in Table 2.1 below.

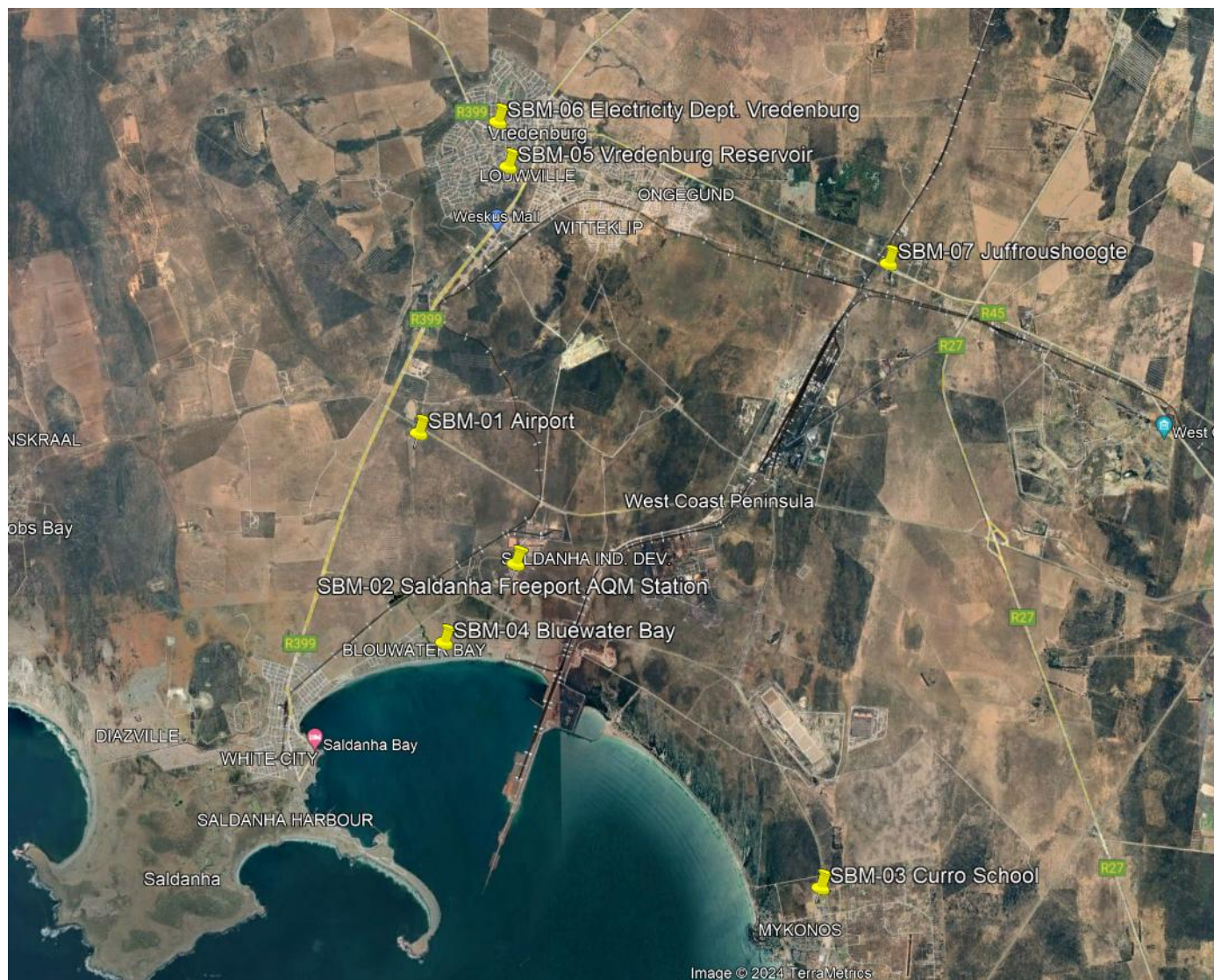
Table 2.1 Dust Fallout Monitoring Sites

Saldanha Bay Dust Fallout Monitoring Network Monitoring Site Locations		
<i>Vredenburg Electricity Dept.: SBM-06</i>	32° 54' 27.2" S	17° 59' 13.7" E
<i>Vredenburg Reservoir: SBM-05</i>	32° 54' 56.1" S	17° 59' 12.9" E
<i>Juffroushoogte: SBM-07</i>	32° 56' 13.8" S	18° 04' 33.6" E
<i>Airport: SBM-01</i>	32° 57' 34.5" S	17° 58' 12.5" E
<i>Saldanha AQM Freeport Station: SBM-02</i>	32°58'56.16"S	17°59'21.57"E
<i>Blue Water Bay: SBM-04</i>	32° 59' 43.8" S	17° 58' 24.7" E
<i>Curro School: SBM-03</i>	33° 02' 16.2" S	18° 02' 59.9" E

Sites selected had to be:

- Along the prevailing wind vector for the area.
- Distributed evenly within the Saldanha Bay Municipality Area and near areas of possible contamination.

Figure 2.1.: Location of Dust Fallout samplers for Saldanha Bay Municipality



2.2 Dust Fallout

Dust fallout samplers were initially deployed in Nov 2015, and samples are collected and analysed monthly at a SANS 17025 accredited facility for insoluble matter content using a gravimetric methodology, in accordance with ASTM D1739: 1970, or demonstrable equivalent, a requirement in terms of the SA National Standards (SANS 1929:2005 - Edition 1.1) and Dust Fallout Regulations.

The insoluble matter contest is then analysed for heavy metals using ICP (OES) by a SANAS Accredited Laboratory for Iron (Fe), Lead (Pb), Manganese (Mn), Copper (Cu) and Zinc (Zn).

3 GUIDELINES AND AIR QUALITY STANDARDS

3.1 Dust Fallout

In terms of the *Government Gazette* Volume 476, No. 27318, the South African Air Quality Act 39 of 2004 was promulgated in 2005. The South African National Dust Control Regulations describes the proposed guidelines for dust fallout, an extract of which is discussed briefly below.

A standard for the acceptable dustfall rate is set out in Table 3.1. The target, action and alert thresholds are shown in Table 3.2.

Table 3.1: Evaluation criteria for Dust Fallout

Restriction Areas	Dust Fall rate (D) mg/m ² /day. (30-day average)	Comment
Residential	D < 600	Permissible for residential and light commercial
Non-Residential	600 < D < 1200	Permissible for heavy commercial and industrial

For heavy commercial and industrial regions, the new guidelines state that monthly average dust fallout concentrations below 1200mg/m²/day “are permissible”. For residential regions, monthly average dust fallout concentrations not exceeding 600mg/m²/day “are permissible”.

Table 3.2: Acceptable Dust Fall Rates

Restriction Areas	Dust fallout rate (D) mg/m ² /day (30-day average)	Averaging period	Permitted frequency of exceeding dust fall rate
residential	D<600	30 days	2 within a year, not sequential months
Non-residential	600<D<1200	30 days	2 within a year, not sequential months

The target annual average dust fallout concentration is 300mg/m²/day. This is an ultimate goal set to achieve “ongoing improvement”, even in areas where compliance with all other guidelines can be demonstrated. The monthly average “action level” for residential regions is 600mg/m²/day and for industrial regions 1200mg/m²/day. Exceptions are granted where elevated concentrations arise on a regional scale from adverse meteorological conditions. Background dust monitoring sites can be used to identify and monitor impacts of such exceptions. Access to historical and

current meteorological information, particularly wind conditions, can be used to distinguish between “adverse” and “normal” meteorological conditions.

4 RESULTS

4.1 Dust fallout and heavy metal results:

Table 4.1 Dust fallout and Heavy Metal Results for review period. Exceedance of Dust Fallout Industrial Standards in **Red**

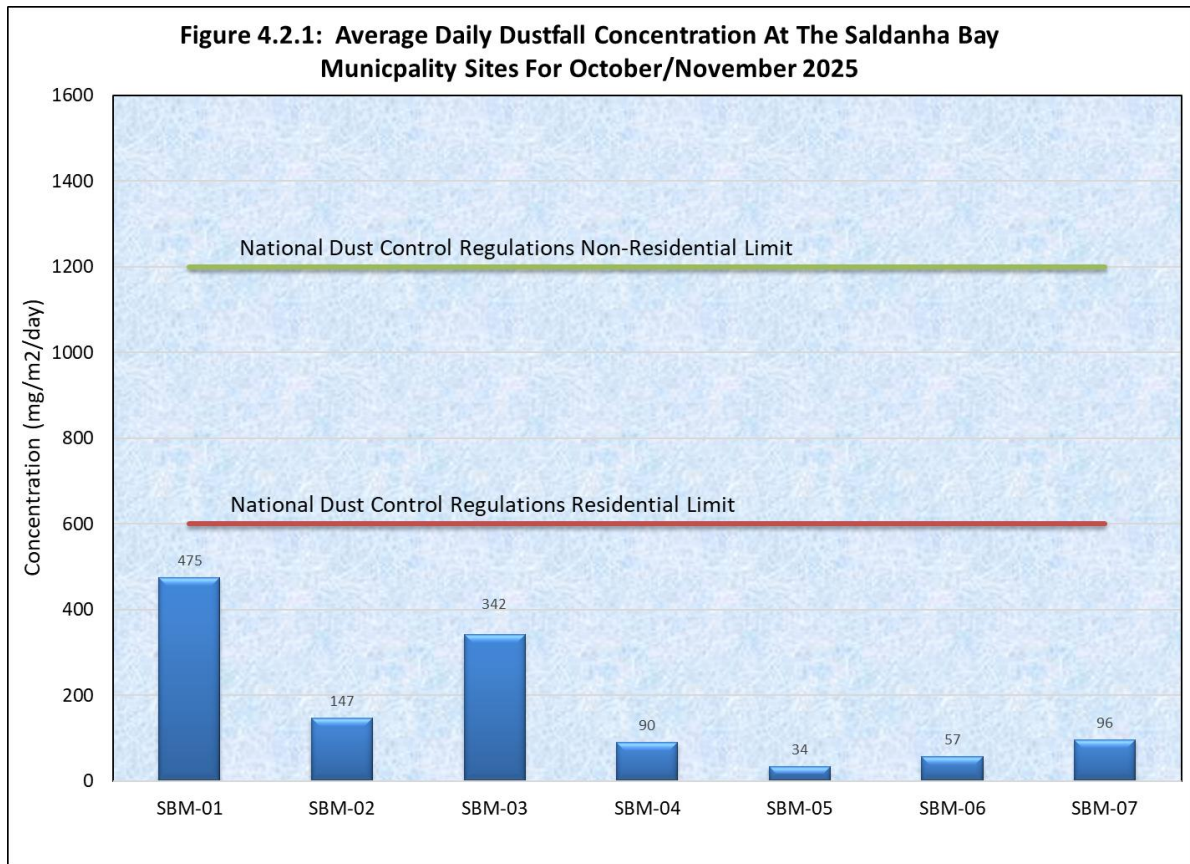
Sampling Site	Sampling Start Date	Sampling End Date	Net Mass (g)	No. of Days	Dust Fall rate (mg/m ² /day)	Lead (ppm)	Copper (ppm)	Zinc (ppm)	Iron (ppm)	Manganese (ppm)
SBM-01	10-Oct-25	07-Nov-25	0.316	28	475	6	35	114	1930	117
SBM-02	10-Oct-25	07-Nov-25	0.098	28	147	153	102	837	33673	4082
SBM-03	10-Oct-25	07-Nov-25	0.228	28	342	9	39	88	3684	101
SBM-04	10-Oct-25	07-Nov-25	0.060	28	90	33	100	383	18333	533
SBM-05	10-Oct-25	07-Nov-25	0.023	28	34	739	522	5217	69565	7391
SBM-06	10-Oct-25	07-Nov-25	0.038	28	57	316	526	2237	36842	3684
SBM-07	10-Oct-25	07-Nov-25	0.064	28	96	31	359	344	25000	9063

-* Flagged due to unusual amount of bird activity.

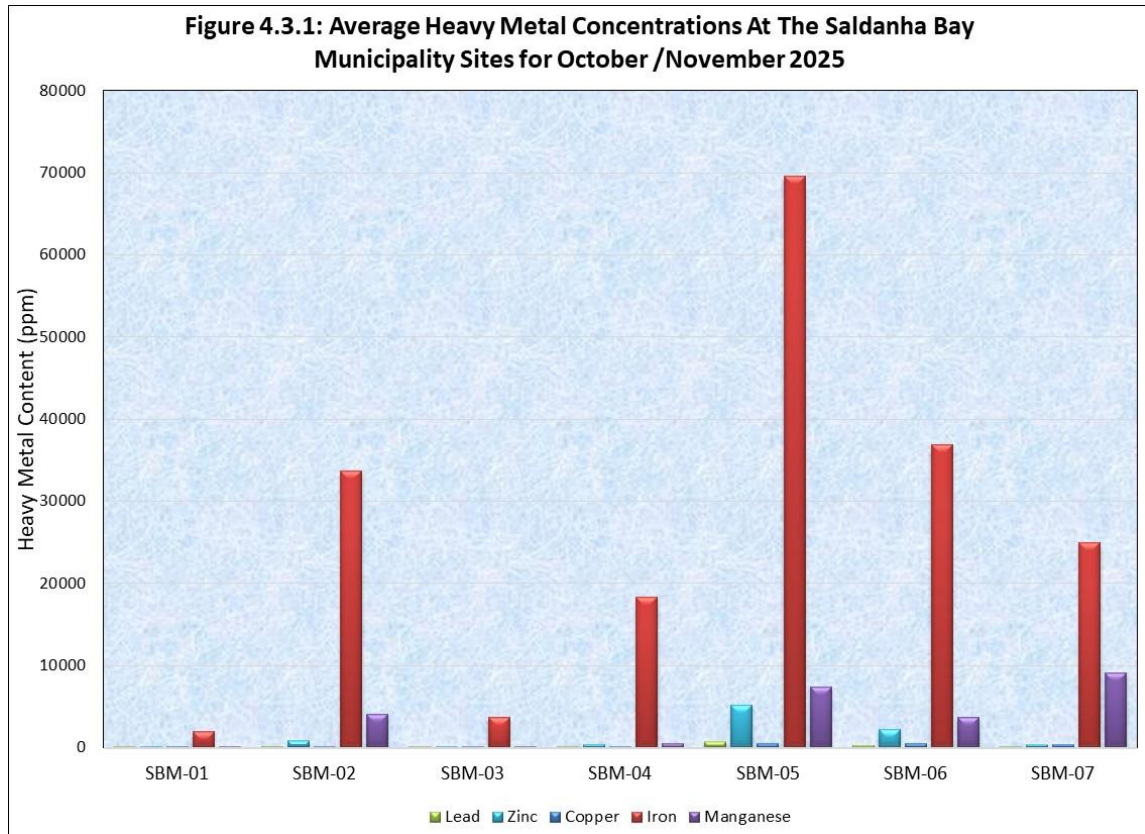
Table 4.2 Lead content (net mass, mg) in dust fallout, past 18 months: Sep/Oct – Sep/Oct 25

Site/Period	Sep - Oct 24	Oct - Nov 24	Nov - Dec 24	Dec 24 - Jan 25	Jan - Feb 25	Feb - Mar 25	Mar - Apr 25	Apr - May 25	May - Jun 25	Jun - Jul 25	Jul - Aug 25	Aug - Sep 25	Sep - Oct 25	Oct - Nov 25
SBM-01	0.006	0.007	0.003	0.001	0.001	0.001	0.003	0.008	0.004	0.001	0.001	0.003	0.004	0.002
SBM-02	0.025	0.019	0.006	0.006	0.012	0.017	0.029	0.023	0.055	0.007	0.043	0.010	0.044	0.015
SBM-03	0.004	0.005	N/A	0.003	0.001	0.001	0.002	0.001	0.005	0.001	0.001	0.001	0.002	0.002
SBM-04	0.016	0.001	0.003	0.003	0.001	0.001	0.007	0.003	0.006	0.002	0.003	0.001	0.005	0.002
SBM-05	0.005	0.013	0.009	0.005	0.016	0.013	0.010	0.004	0.003	0.004	0.003	0.004	0.011	0.017
SBM-06	0.011	0.015	0.010	0.008	0.016	0.016	0.009	0.013	0.003	0.003	0.003	0.005	0.013	0.012
SBM-07	0.002	0.003	0.002	0.001	0.001	0.001	0.003	0.002	0.002	0.001	0.001	0.001	0.002	0.002

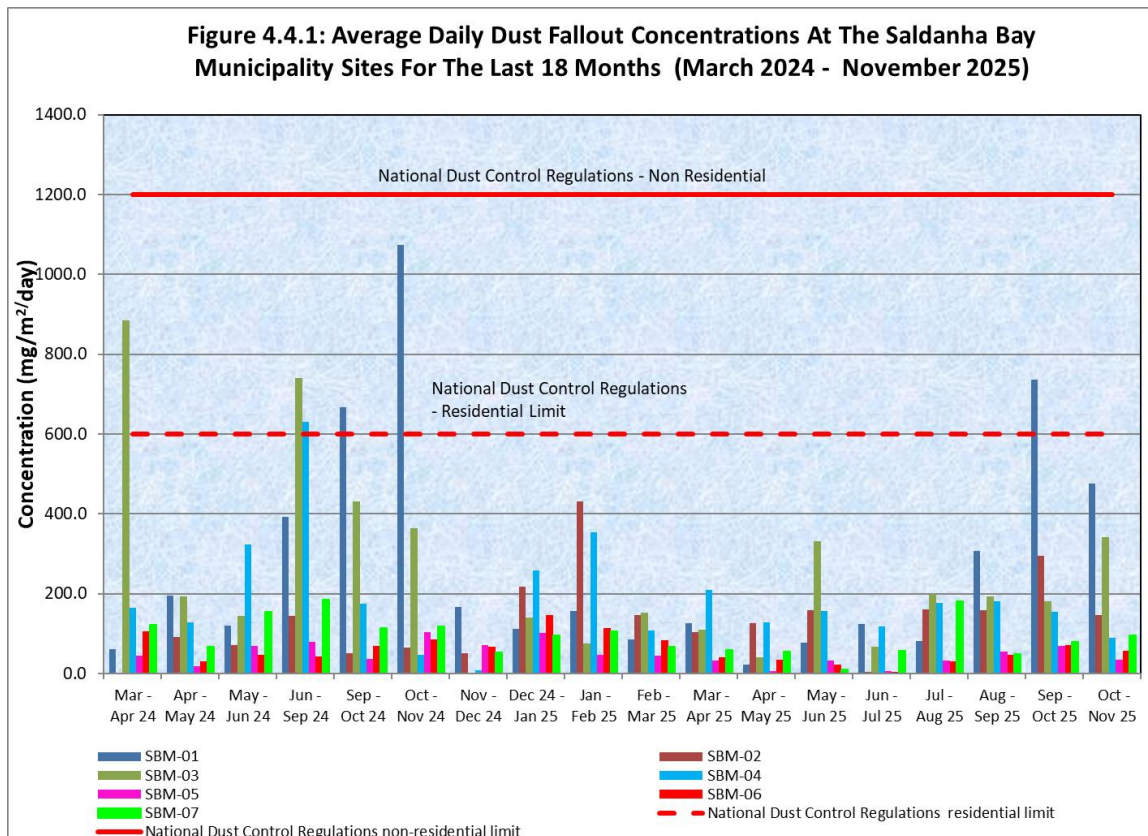
4.2 Dust fallout concentration:



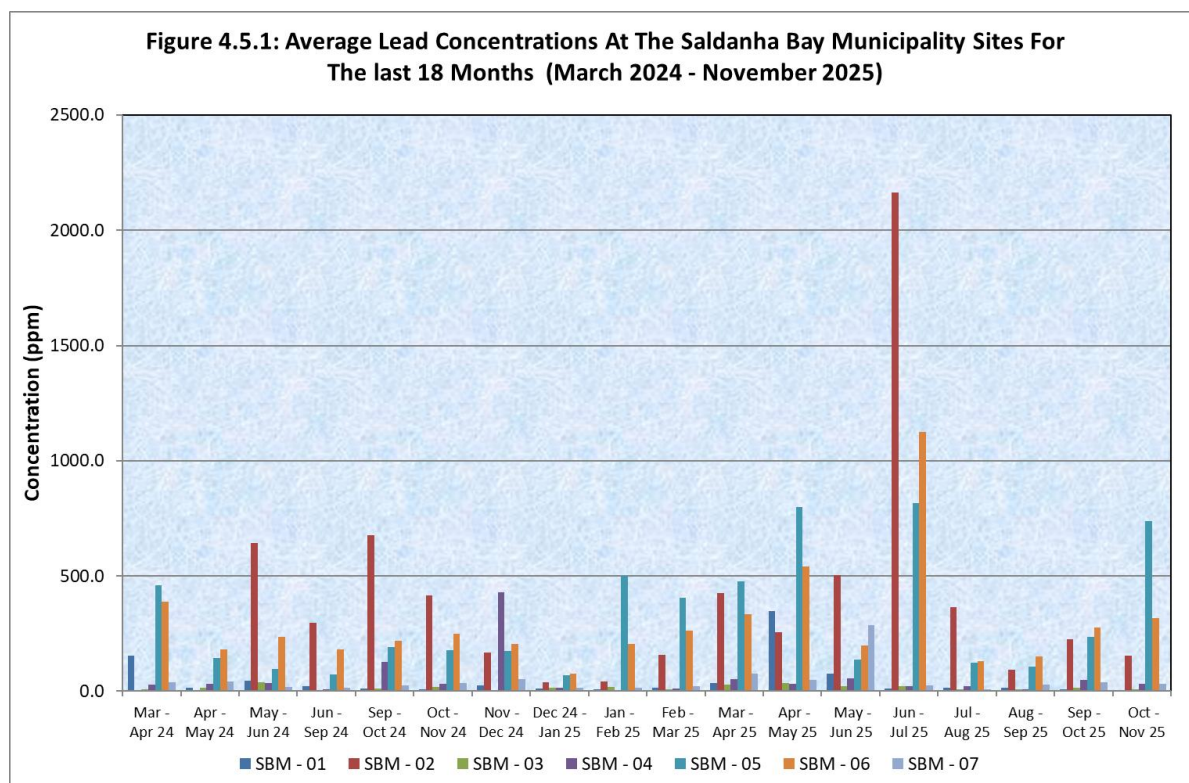
4.3 Heavy metal concentration



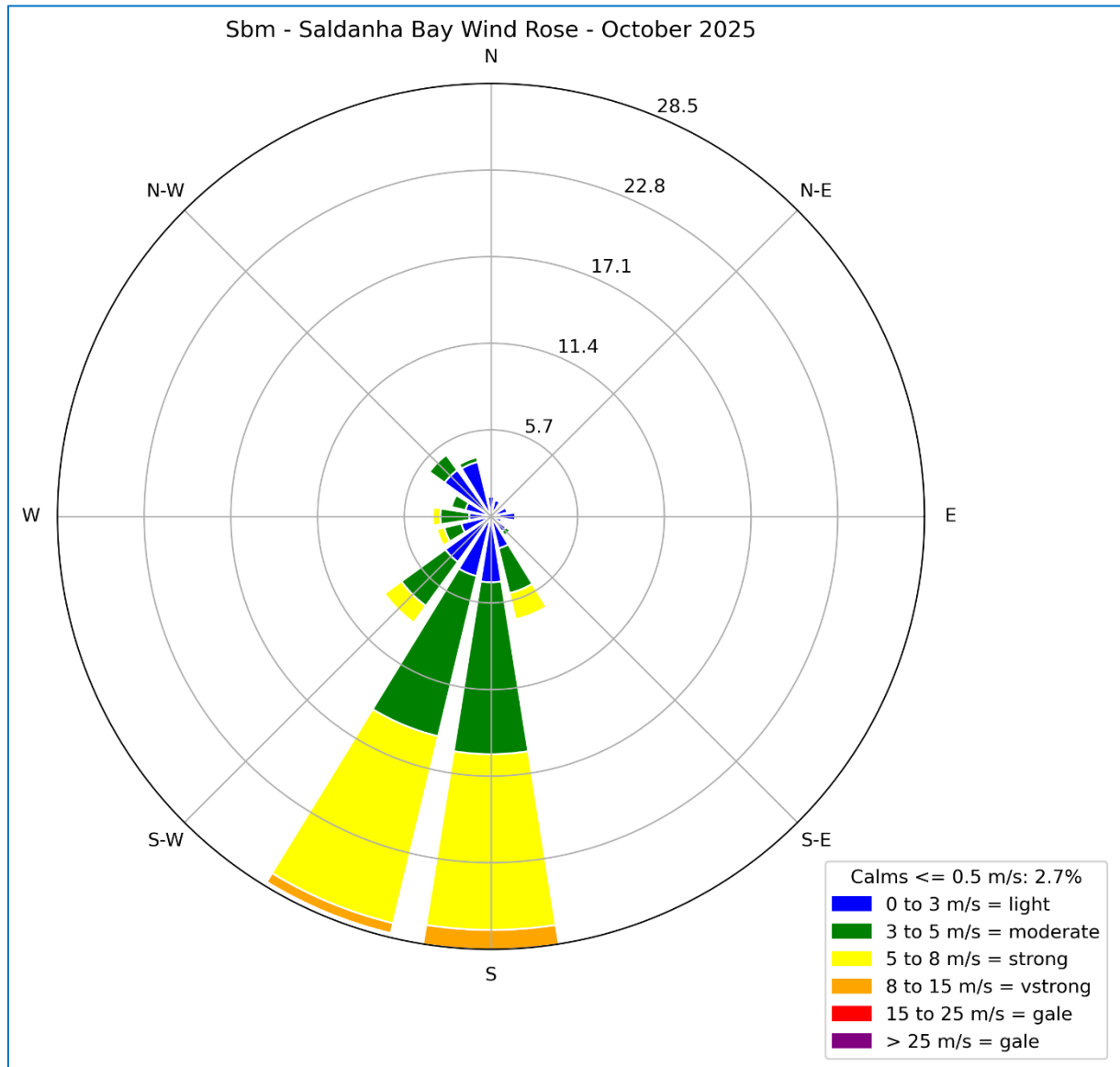
4.4.1: Average Historical Daily Dust fallout concentrations



4.5.1: Average Historical Lead fallout concentrations



4.6 Wind Roses for Saldanha Bay Municipality



5 CONSULTANT'S OBSERVATIONS AND CONCLUSIONS

- There was valid data for all seven (7) Metal results collected, resulting in 100% data capture for the period under review. This report covers the period 10 October to 7 November 2025.
- There were **no exceedances** of the South African National Dust Control Regulations residential limit of 600mg/m²/day for the period under review.
- There were **no exceedances** of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during the month for sites classed as non-residential.
- Net lead masses ranged between 2µg and 17µg during the review period. These are possibly a better measure than concentration when assessing “heavy metal” levels in dust fallout.
- Meteorological conditions at Saldanha for the review period were characterised by moderate to strong winds from the south (S), southwest (SW) with an occasional light to moderate bias from the northwest (NW). There was an 2.7% occurrence of calm conditions during the review period.

5.1 SANAS Accredited Certificates of Analysis for Dust Fallout & Metals



Analytical Report

Report **SBM**
Issue date **10 November 2025**



Customer details

Company **Skyside**
Contact **Grant Ravenscroft**
Address **12 Main Rd
Vredenburg, 7380**
Project **SBM**
Reference **AS1138**
samples **7**

Laboratory details

Laboratory **SKYSIDE SA**
Contact **Quentin Hurt**
Address **17 Bay View St
Saldanha Bay, 7395**
Telephone **(021) 300 8705**
Analysis **07 November 2025**
Received **07 November 2025**

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3. *Skyside Cape Town has applied for an ISO 17025 audit in terms of the Skyside Group quality assurance system but this area of the facility and system has not been assessed.*
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6. *The samples were supplied by the customer.*
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Report authorised by **Quentin Hurt**
Designation **Technical Signatory**

Signature

Sampling data provided by Skyside

Samples deployed on	10-Oct-25
Samples retrieved on	07-Nov-25
Number of days sampled	28

Sample recovery and weighing follows ASTM D-1739

Sample	Net Mass (mg)	Dust fallout (mg/m ² /d)	Laboratory uncertainty (mg/m ² /d)
SBM1	316	475	28
SBM2	98	147	9
SBM3	228	342	21
SBM4	60	90	5
SBM5	23	34	2
SBM6	38	57	3
SBM7	64	96	6

Report produced by Zahra Swindell of Skyside.

Conditions during weighing 22 °C 50 % RH



TEST REPORT

Contact	Quentin Hurt	Project Number	SBM
Client	Skyside (South Africa) Cape Town	Lab Reference	JBX25-026129
Email	qh@skyside.co.za;grant@skyside.co.za	Report Number	LIM25/3575
Address		Date Received	15-Dec-2025
Order Number	QH	Date Test(s) Started	15-Dec-2025
Samples	7	Date Reported	08-Jan-2026
Sample Matrix			

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Sample No.			JBX25-026129-01	JBX25-026129-02	JBX25-026129-03	JBX25-026129-04
Sample ID			SBM1	SBM2	SBM3	SBM4
Sample Comment			-	-	-	-
Analysis	Unit	LOR	Result	Result	Result	Result
Multi Element Determination of Metals by ICP OES (ME-AN-027) - LAB-QLT-MET-027						
Copper (Cu)	mg/filter	0.002	0.011	0.010	0.009	0.006
Iron (Fe)	mg/filter	0.005	0.61	3.3	0.84	1.1
Lead (Pb)	mg/filter	0.001	0.002	0.015	0.002	0.002
Manganese (Mn)	mg/filter	0.001	0.037	0.40	0.023	0.032
Zinc (Zn)	mg/filter	0.001	0.036	0.082	0.020	0.023

Sample No.			JBX25-026129-05	JBX25-026129-06	JBX25-026129-07
Sample ID			SBM5	SBM6	SBM7
Sample Comment			-	-	-
Analysis	Unit	LOR	Result	Result	Result
Multi Element Determination of Metals by ICP OES (ME-AN-027) - LAB-QLT-MET-027					
Copper (Cu)	mg/filter	0.002	0.012	0.020	0.023
Iron (Fe)	mg/filter	0.005	1.6	1.4	1.6
Lead (Pb)	mg/filter	0.001	0.017	0.012	0.002
Manganese (Mn)	mg/filter	0.001	0.17	0.14	0.58
Zinc (Zn)	mg/filter	0.001	0.12	0.085	0.022

Sasha Maistry
Technical Signatory (Approver)

Reuben Maleka
Technical Signatory (Reviewer)

Method	Method Summary
Multi Element Determination of Metals by ICP OES (ME-AN-027)	Dissolved metals are determined on a filtered and acidified portion of aqueous sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.7 and Standard Methods for the Examination of Water and Wastewater Method 3120. Total metals are determined on a nitric acid digested portion of well-shaken aqueous sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.2 and 200.7. Recoverable metals are determined on an acid digested portion of sample by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on US EPA 200.2, 3050B and 200.7. Silicon is not recovered. Metals are determined on acid digestions of filters by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is based on NIOSH 7300 and 7301.

IS	Insufficient sample for analysis	NA	Not analysed
LNR	Sample listed but not received	-	Not applicable
LOR	Limit of reporting	UTD	Unable to determine
*	Not SANAS accredited. This result is not included in the SANAS scope of accreditation for this laboratory	NR	Not Requested

Samples analysed as received. Solid samples expressed on a dry weight basis. Unless otherwise indicated, samples were received in containers fit for purpose at ambient temperature. This document is issued by the Company under its General Conditions of Service. Attention is drawn to the limitation of liability, and jurisdiction issues defined therein. WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) draw and/ or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativity of all goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The document is issued in accordance with SANAS's accreditation requirements and shall not be reproduced, except in full, without written approval of the laboratory.