



Test Report: Dust Fallout & Metals Monitoring

Q1 of 2026

Prepared for

Saldanha Bay Municipality

AQ344

Test dates: January – March 2026

EXECUTIVE SUMMARY

Dust fallout sampling was conducted by Argos Scientific Africa (Pty) Ltd. on behalf of Skyside South Africa (Pty) Ltd. since September 2024 at seven (7) sites, including the monitoring and heavy metals (iron, lead, zinc, manganese and copper), in the Saldanha Bay Municipal Area. This report covers data for the period January – March 2026 (Q1).

There was valid data for all twenty-one (21) samples collected during the Q1 period, January, February and March.

There were **no** exceedances of the South African National Dust Control Regulations residential limit of 600mg/m²/day during Q1 2026.

There were **no** exceedances of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during Q1 2026.

Meteorological conditions for January – March 2026 and were characterised by moderate to strong south-westerly (SW) winds with light to moderate north-westerly (NW) bias, especially during March with an occurrence of 1.1% to 6.0% calm conditions.

Additional information and laboratory results can be found in the monthly reports.

REPORT DETAILS

REFERENCE	AQ344/2026/Q1
REPORT TITLE	Dust Fallout and Metals Monitoring, Q1 of 2026
DATE SUBMITTED	29 June 2026
CLIENT	René Toesie Saldanha Bay Municipality Pick and Pay Centre VREDENBURG E-mail: rene.toesie@sbm.gov.za
PREPARED BY:	Shamira Pillay SKYSIDE South Africa 6th Avenue Saldanha Bay E-mail: shamira@skyside.co.za
SIGNED	
APPROVER	Grant Ravenscroft Signed: 
STATUS	Final
NOTICE	

TABLE OF CONTENTS

Description	Page
1 INTRODUCTION	6
1.1 Scope of Work	6
2 METHODOLOGY	7
2.1 Sample Location	7
2.2 Dust fallout	9
3 GUIDELINES AND AIR QUALITY STANDARDS	10
3.1 Dust fallout	10
4 RESULTS	11
4.1 Dust fallout results	11
4.2 Heavy metal results	11
4.3 Average Dust fallout concentration – Q1 2026	13
4.4 Average Dust fallout concentration – Past 18 Months	13
4.5 Average heavy metals concentrations – Q1 2026:	14
4.5.1 LEAD (Pb)	14
4.5.2 COPPER (Cu)	14
4.5.3 IRON (Fe)	15
4.5.4 ZINC (Zn)	15
4.5.5 MANGANESE (Mn)	16
4.6 Wind Roses for Saldanha Bay Municipality	17
5 CONSULTANT'S OBSERVATIONS and CONCLUSIONS	20
5.1 Dust fallout	20

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	South West
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 September 2024 at seven (7) sites, including the monitoring and heavy metals (iron, lead, zinc, manganese and copper), in the Saldanha Bay Municipal Area.

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 for 12 months.
- Monthly collection of samples for duration of 12 months.
- Monthly sample analysis as follows: Seven (7) gravimetric samples per month.
- Elemental sample analysis as follows: Iron, lead, zinc and copper.
- Monthly results to client in electronic format.
- Data interpretation and reporting will be submitted electronically.

2 METHODOLOGY

2.1 Sample Location

Dust fallout sampling was conducted the following seven sites:

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 2.1.1: Location of dust fallout samplers for Saldanha Bay Municipality



2.2 Dust fallout

Dust fallout samplers were deployed in January 2015 and samples are collected on a monthly basis. Each series of samples were analysed at a SANS 17025 accredited facility.

Total insoluble dust fallout was determined in accordance with ASTM D 1739 or demonstrable equivalent, a requirement in terms of the SA National Standards (SANS 1929:2005 - Edition 1.1).

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 on 24 April 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

Dust Fallout results are detailed in Table 4.1 and Metals results in Tables 4.2 as well as graphically in Figures 4.3 to 4.5 respectively.

4.1 Dust fallout results

Table 4.1 Dust fallout results for Q1 2026

Dust Fallout results for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	250	320	386
SBM-02	169	114	81
SBM-03	218	92	106
SBM-04	66	62	70
SBM-05	128	58	83
SBM-06	92	90	51
SBM-07	89	43	105

4.2 Heavy metal results

Table 4.2.1 Heavy Metals results for Lead Q1 2026

Lead Content (ppm) for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	10.2	8.5	11.7
SBM-02	67.7	214.5	166.7
SBM-03	5.8	7.3	14.1
SBM-04	19.4	10.9	21.3
SBM-05	129.7	280.8	109.1
SBM-06	221.3	151.4	176.5
SBM-07	43.1	62.5	28.6

Table 4.2.2 Heavy Metals results for Copper Q1 2026

Copper Content (ppm) for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	56	25	31
SBM-02	113	95	111
SBM-03	6	88	42
SBM-04	39	66	106
SBM-05	70	164	91
SBM-06	180	242	206
SBM-07	86	313	86

Table 4.2.3 Heavy Metals results for Iron Q1 2026

Iron Content (ppm) for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	3 013	3 690	2 023
SBM-02	7 526	33 360	31 481
SBM-03	3 797	7 042	7 183
SBM-04	42 691	8 090	7 660
SBM-05	10 974	25 741	21 818
SBM-06	20 747	18 163	23 235
SBM-07	24 437	31 250	12 000

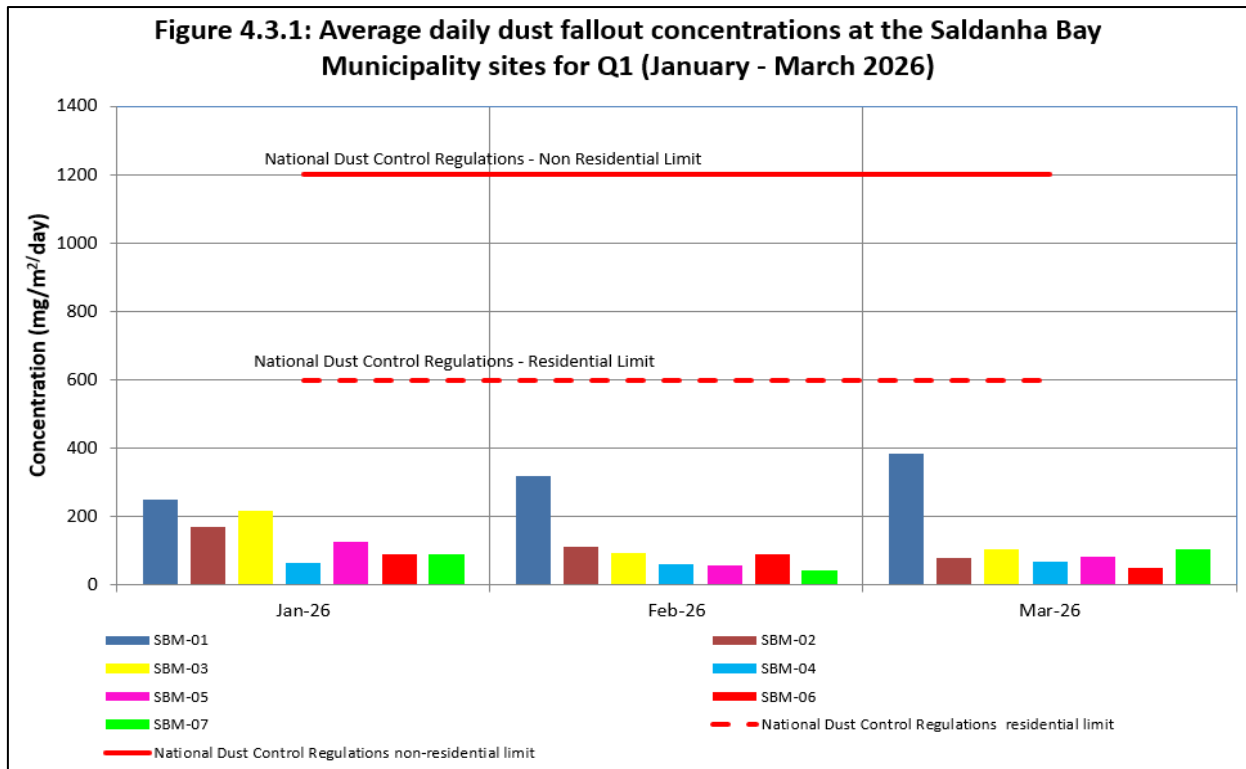
Table 4.2.4 Heavy Metals results for Zinc Q1 2026

Zinc Content (ppm) for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	215	170	86
SBM-02	1 957	1 025	2 778
SBM-03	117	191	197
SBM-04	388	350	383
SBM-05	1 297	2 574	1 000
SBM-06	2 351	1 423	1 500
SBM-07	11 931	750	3 714

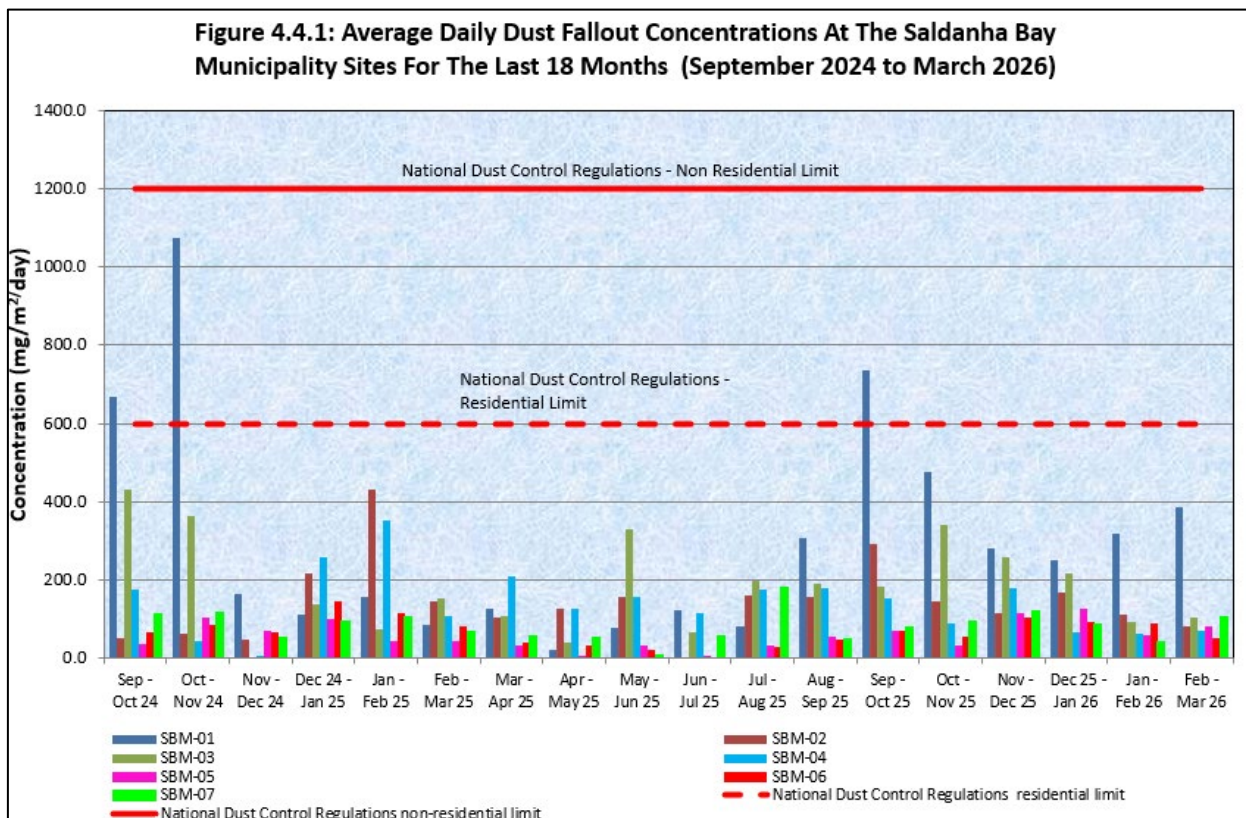
Table 4.2.5 Heavy Metals results for Manganese Q1 2026

Manganese Content (ppm) for Q1 2026			
	Jan-26	Feb-26	Mar-26
SBM-01	306	1 145	167.3
SBM-02	692	143	1 167
SBM-03	239	367	268
SBM-04	796	2 624	426
SBM-05	1 197	2 340	1 436
SBM-06	1 798	5 903	1 588
SBM-07	747	1 625	343

4.3 Average Dust fallout concentration – Q1 2026

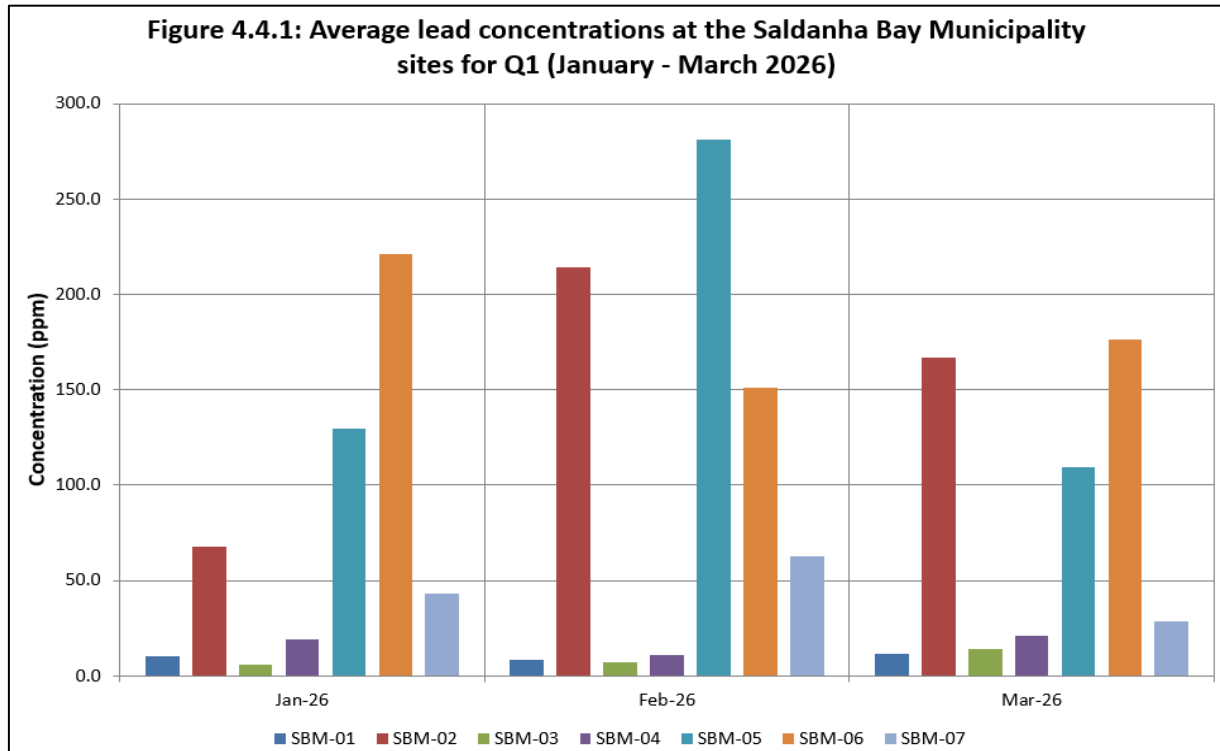


4.4 Average Dust fallout concentration – Past 18 Months

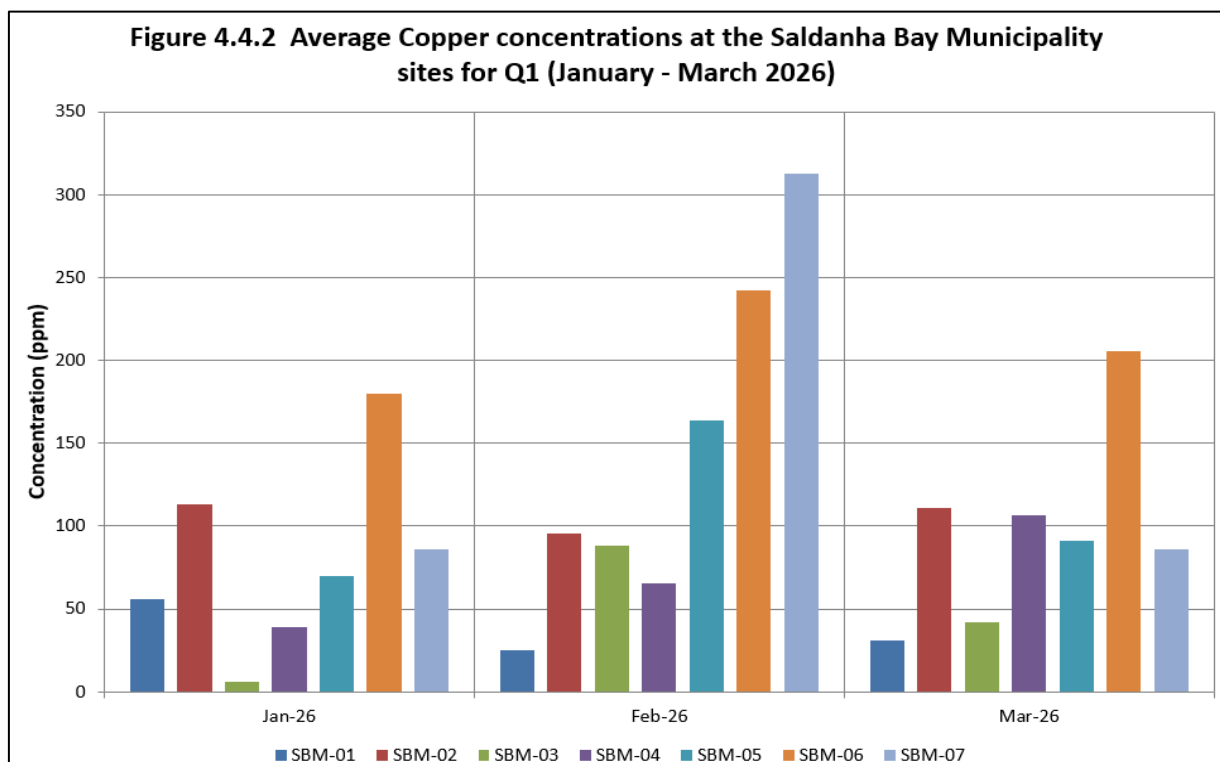


4.5 Average heavy metals concentrations – Q1 2026:

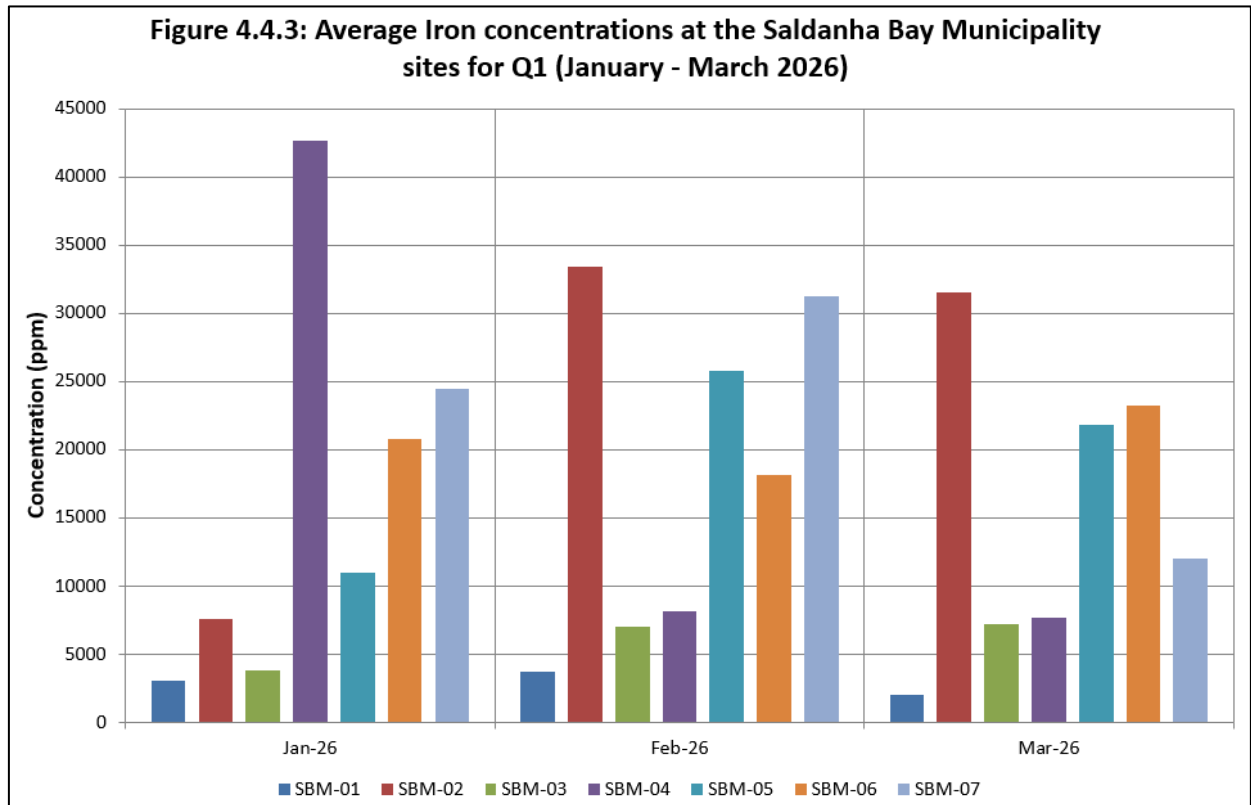
4.5.1 LEAD (Pb)



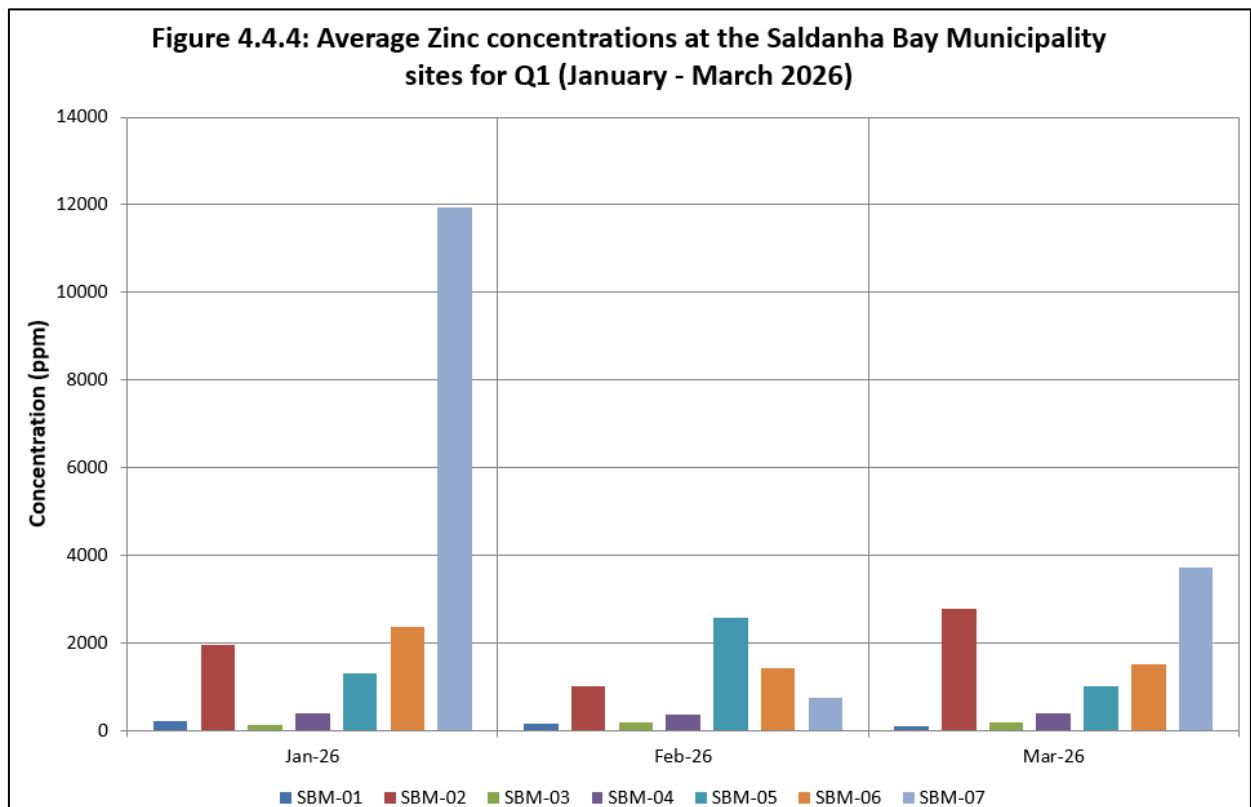
4.5.2 COPPER (Cu)



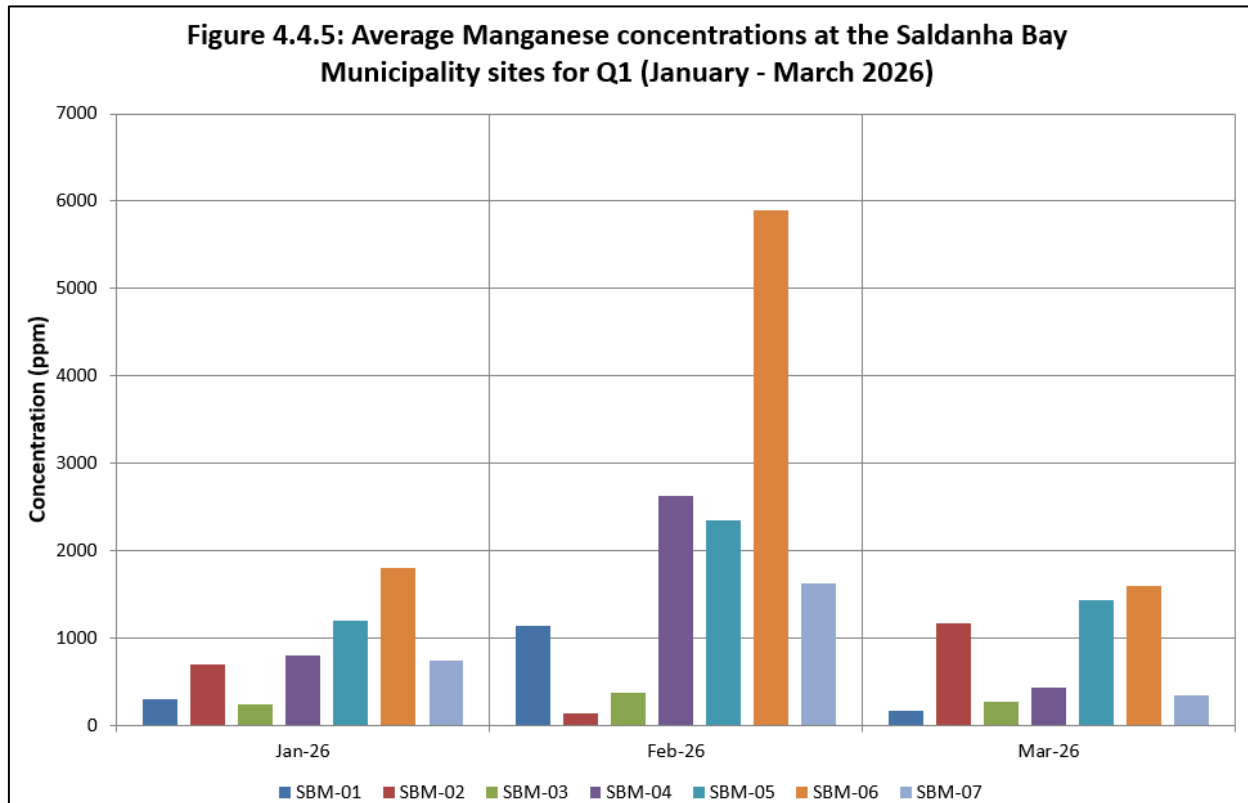
4.5.3 IRON (Fe)



4.5.4 ZINC (Zn)

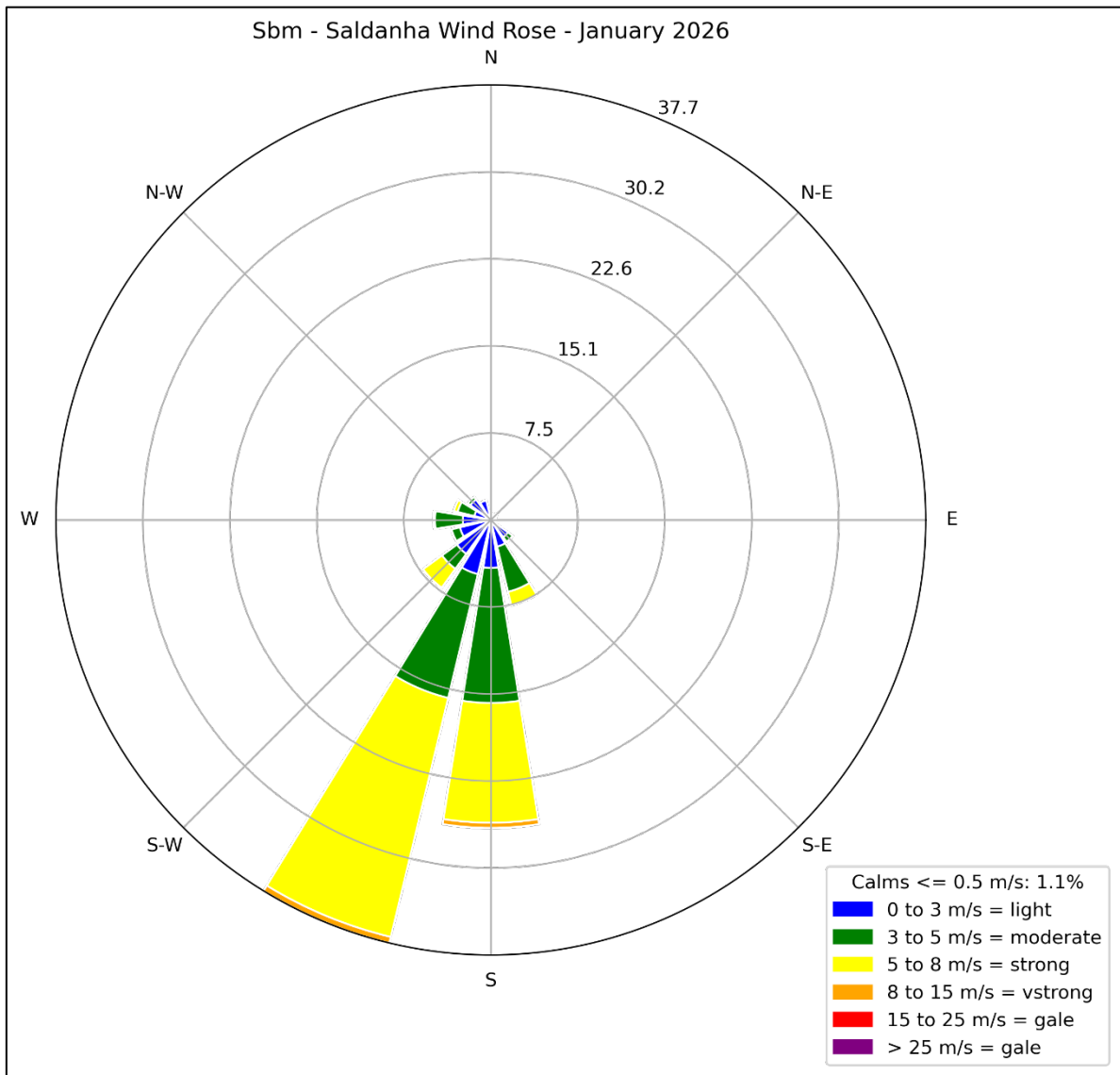


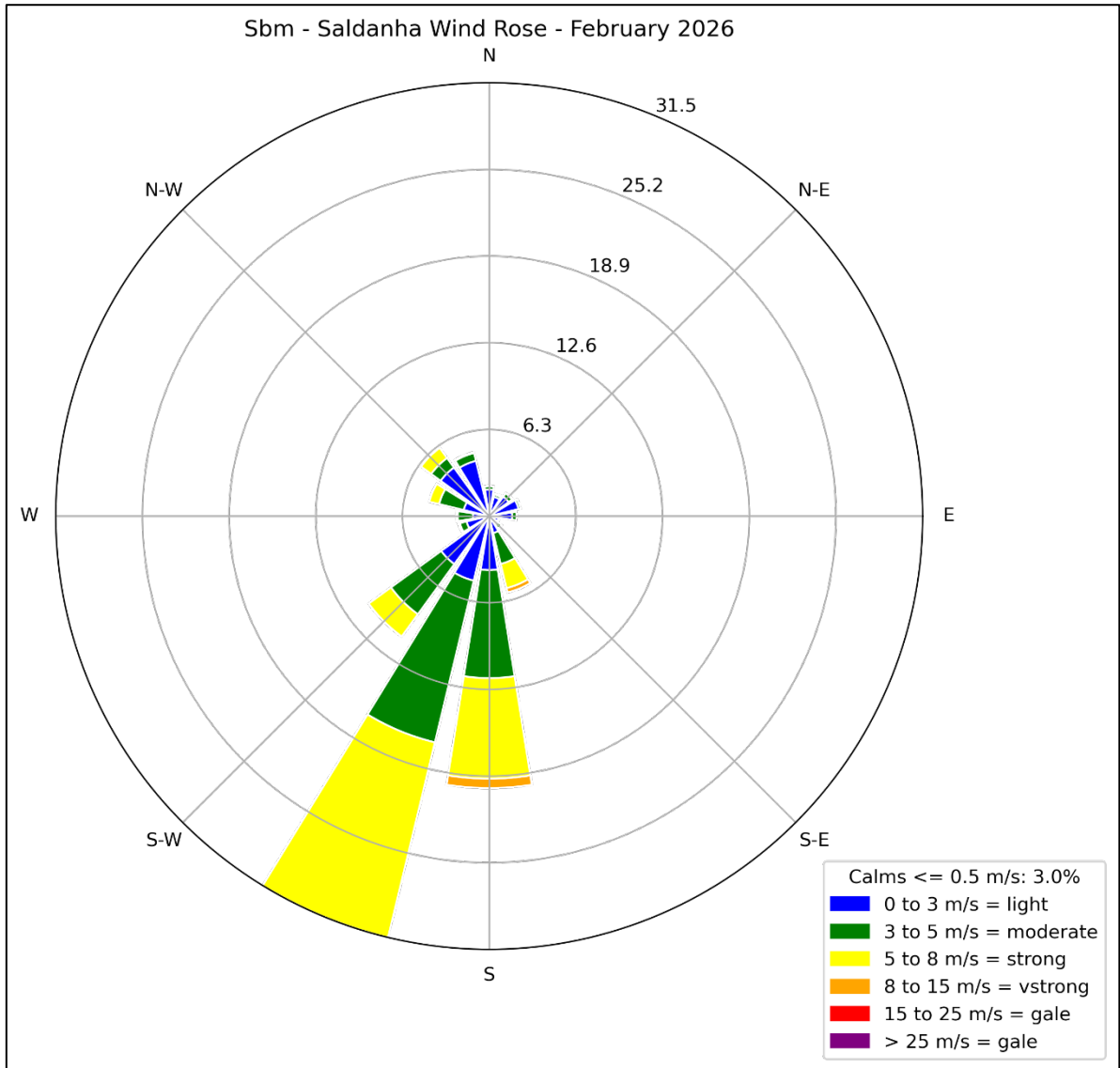
4.5.5 MANGANESE (*Mn*)

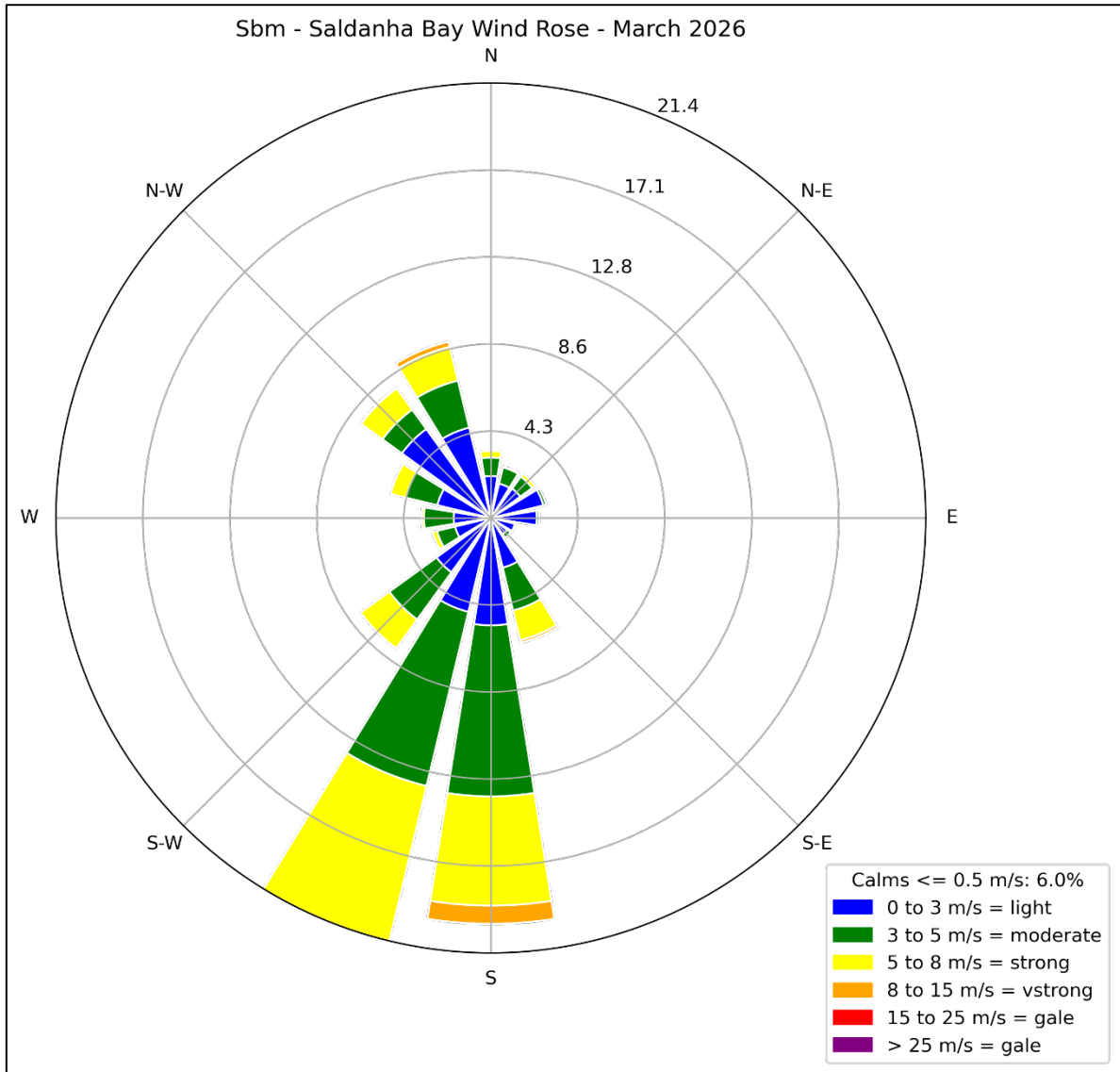


4.6 Wind Roses for Saldanha Bay Municipality

The wind roses for Saldanha Bay Area for the Q1 period of January - March 2026.







5 CONSULTANT'S OBSERVATIONS AND CONCLUSIONS

5.1 *Dust fallout*

- Dust fallout sampling was conducted at seven (7) sites in the Saldanha Bay Municipal area, collected monthly.
- There was valid data for all twenty-one (21) samples collected during the Q1 period, January, February and March.
- There were **no exceedances** of the South African National Dust Control Regulations residential limit of 600mg/m²/day for sites classified as residential, during Q1 2026.
- There were **no exceedances** of the South African National Dust Control Regulations non-residential limit of 1200mg/m²/day during Q1 2026.

Meteorological conditions for January – March 2026 and were characterised by moderate to strong south-westerly (SW) winds with light to moderate north-westerly (NW) bias, especially during March with an occurrence of 1.1% to 6.0% calm conditions.

Additional information and laboratory results can be found in the monthly reports.