




MONTHLY AIR QUALITY REPORT



MOKOLO CROCODILE WATER AUGMENTATION PROJECT PHASE 2 (MCWAP-2)
ENVIRONMENTAL BASELINE AIR QUALITY - MONTHLY MONITORING REPORT.



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Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	August to September 2021		i

EXECUTIVE SUMMARY

Environmental Assurance (Pty) Ltd. (ENVASS) has been appointed by GIBB Bigen Nyeleti Joint Venture (GBN-JV) to design, implement and maintain a monthly Air quality compliance monitoring programme related to the Phase 2 Mokolo Crocodile Water Augmentation Project (MCWAP-2). The monitoring is implemented as baseline monitoring along the proposed pipeline construction route (hereafter referred to as **“the proposed development”**), which is planned to stretch from the Vlieepoort Mountains, west of Thabazimbi, to Medupi and Matimba Power Stations situated between Steenbokpan and Lephalale, Limpopo Province. The monthly passive sampling comprises of gravimetric dust fallout monitoring, as well as future planned Particulate Matter (PM) monitoring at three (3) predetermined localities. The identified localities are monitored on a monthly basis for data collection and interpretation in order to determine possible impacts related to the proposed construction activities, as well as to serve as a baseline condition for monitoring programme refinement as the project progresses.

This report communicates the monthly air quality monitoring and results conducted within August to September 2021. All monitoring was conducted according to recognised standards and sent to a SANAS accredited laboratory for analysis as further described in this report.

The following findings pertain to the August to September 2021 air quality monitoring:

- All hundred (100) samples were obtained and analysed during the monitoring period;
- All three (3) E-Sampler data was captured during the August to September 2021 monitoring period.
- All E-sampler localities (ES01 (School), ES02 (Eskom – Medupi Power Station) and ES03 (Mooivalei) recorded general low and relatively constant daily PM₁₀ readings with some influences (peaks) noted;
- Sample localities DB04 and DB87 recorded exceedances in the SANS 1929 Industrial limit of 1200 mg/m²/day with values of 1360 mg/m²/day and 1797 mg/m²/day respectively. Sample locality DB04 is situated Next to D1675 Road and is the first exceedances recorded for the locality. Sample locality DB87 which is situated alongside the D769 public dirt road outside of the Stratford 462 KQ farm frequently recorded exceedances of the Industrial limit, it is assumed that the high levels are attributed to movement of local vehicles on the aforementioned dirt road;
- Sample localities DB86 and DB99 recorded exceedances related to the SANS 1929 Residential limit of 600 mg/m²/day with values of 747 mg/m²/day and 832 mg/m²/day respectfully. Locality DB86 is situated alongside the D769 public dirt road and locality DB99 is situated alongside the D769 dirt road;
- The remaining monitoring locality results were compliant to the set SANS 1929 limits;
- Monitoring locality DB87 presented the highest reading during the August to September 2021 monitoring period at 1797 mg/m²/day (above the Industrial Limit), while monitoring locality DB52 presented the lowest with a calculated 11.3 mg/m²/day. It should be noted that sample locality DB87 has recorded the highest readings every monitoring period since initiation in April 2021; and

Document No:	MON-AQR-244-20_21 (21-08)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	August to September 2021		ii

- The most frequent wind direction recorded during the monitoring period originated from the North and to a lesser extent from the North North-East. Wind speeds reaching a maximum of 3.7 m/s with a total rainfall recorded at 28.8 mm during the monitoring period.

Document No:	MON-AQR-244-20_21 (21-08)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	August to September 2021		iii

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	BACKGROUND	1
3.	LEGISLATIVE CONTEXT AND REFERENCES	2
4.	PURPOSE	3
5.	METHODOLOGY	3
5.1	SITE ESTABLISHMENT AND SCOPE OF WORK	3
5.2	ACTIVE INDICATIVE MONITORING	8
5.3	PASSIVE DUST MONITORING	9
6.	EMISSION GENERATION AND POLLUTANT OVERVIEW	11
6.1	PARTICULATE MATTER	11
6.2	ENVIRONMENTAL IMPACT	12
7.	RESULTS AND DISCUSSION	13
7.1.	MONTHLY SAMPLING REGISTER	13
7.2.	PARTICULATE MATTER RESULTS	18
7.2.1.	Active Handheld PM Monitoring	18
7.2.2.	E-Sampler PM Monitoring	25
7.3.	GRAVIMETRIC DUST FALLOUT RESULTS	27
7.4.	WEATHER DATA	31
8.	CONCLUSION AND ASPECTS TO CONSIDER	37
9.	PROPOSED MITIGATION AND POLLUTION PREVENTION MEASURES DURING FUTURE CONSTRUCTION..	37
10.	REFERENCES	40
	Appendix A – EQUIPMENT CHECKLIST	41
	Appendix B – ENVASS Chain of Custody (CoC) FORM	42
	Appendix C – MONITORING LOCALITY SUMMARY TABLE	49
	Appendix D – INDEPENDENT FORM AND CV	166

LIST OF FIGURES

Figure 1: GBN-JV Air Quality Monitoring Localities.....	5
Figure 2: GBN-JV Air Quality Monitoring Localities (Northern Region)	6
Figure 3: GBN-JV Air Quality Monitoring Localities (Southern Region)	7
Figure 4: Met One Instruments E-Sampler-9800	8
Figure 5: ES01 (School) E-Sampler PM ₁₀ Data	26
Figure 6: ES02 (Eskom – Medupi Power Station) E-Sampler PM ₁₀ Data	26
Figure 7: ES03 (Mooivalei) E-Sampler PM ₁₀ Data	27
Figure 8: Dust Fallout Three-Month Running Average across all monitoring localities	31
Figure 9: Wind Direction Frequency Average	33
Figure 10: Windrose Diagram	33
Figure 11: Rainfall for monitoring period	36

LIST OF TABLES

Table 1: Monitoring Resources and Sampling Frequencies.....	4
Table 2: Ambient air quality limits for common pollutants (SANS 1929:2011) (Limit Values in µg/m ³)	9
Table 3: Four-band scale evaluation criteria for dust deposition (SANS 1929: 2011).....	10
Table 4: Acceptable dust fallout results (GNR 827)	10
Table 5: May 2021 Monthly Sampling Register.....	13
Table 6: PM meter results	18
Table 7: Daily Average PM ₁₀	26
Table 8: Gravimetric Dust Fallout Results	28
Table 9: Wind Direction	32
Table 10: Average Wind Speeds.....	32
Table 11: Beaufort Wind Force Scale	34
Table 12: Rainfall	35

Document No:	MON-AQR-244-20_21 (21-08)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	August to September 2021		v

GLOSSARY

A list of commonly used acronyms, measurement units and definitions are included below for the purpose of ensuring uniformity in the interpretation of this report:

ACRONYMS	
GBN-JV	GIBB Bigen Nyeleti Joint Venture
ASTM	American Society for Testing and Materials
DFFE	Department of Forestry, Fisheries and the Environment (Previously known as DEFF)
ENVASS	Environmental Assurance (Pty) Ltd
NEMA	National Environmental Management Act: Act 109 of 1998.
NEM:AQA	National Environmental Management: Air Quality Act 39 of 2004
PM ₁₀	Particulate Matter of less than 10 microns in diameter
SANS	South African National Standards

MEASUREMENT UNITS	
mg/m ² /day	Milligram per square meter per day
PPM	Parts per million
µg/m ³	Microgram per cubic meter

DEFINITIONS	
Ambient air	Outdoor air in the troposphere, excluding air regulated by the relevant national legislation, where air quality is determined in accordance with this standard.
ASTM D1739	Standard test method for the collection measurement of dust fall (settleable particulate matter).
Average period	Period of time over which the average value is determined.
Dust fallout monitoring programme	Means monitoring of gravimetric dust fallout on a continuous basis.
Monthly basis	Period of 30 days (±2 day) as specified by ASTM D1739.
National Dust Control Regulations	Means the National Dust Control regulations, 2013, as published in the Government Gazette (No. 36974) of 1 November 2013 in terms of the National Environmental Management: Air Quality Act 39 of 2004.
Non-residential area	Means any area not classified for residential use as per local town planning scheme.
Residential area	Means any area classified for residential use in terms of the local town planning scheme.
SANS1929: 2011	South African National Standards, Ambient Air Quality – limits for common pollution.

Document No:	MON-AQR-244-20_21 (21-08)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	August to September 2021		vi

1. INTRODUCTION

Environmental Assurance (Pty) Ltd. (ENVASS) was appointed by GIBB Bigen Nyeleti Joint Venture (GBN-JV) to undertake the environmental air quality baseline monitoring programme of the Mokolo Crocodile Water Augmentation Project Phase 2 (MCWAP-2) project. The monitoring is implemented based on the proposed construction pipeline associated with the increased water demand required within Lephalale to coal-fired power stations, where water will be transferred from the Crocodile River (West) to the Steenbokpan and Lephalale area. The project infrastructure includes:

- Water Transfer Infrastructure:
 - Vlieepoort abstraction weir and pump station;
 - Low lift rising main;
 - Balancing dams and desilting works;
 - High-lift pump station;
 - High-lift rising main;
 - Break pressure reservoir;
 - Gravity pipeline;
 - Operation reservoir;
 - Electrical infrastructure; and
- Borrow pits for sourcing of construction material.

The monthly air quality monitoring consists of one hundred (100) gravimetric dust fall-out monitoring localities and three (3) remote particulate matter E-Samplers sites. The scope of work (SoW) performed is aligned to the Tender Document Requirements (Reference: MCWAP2: CONTRACT 2A-C-122-8.9), which are included within the report.

2. BACKGROUND

The project area is located within the Limpopo Province (Waterberg District Municipality) and stretches from the Thabazimbi to Lephalale Local Municipalities. The climate is classified as semi-arid with precipitation generally present during the summer season at a maximum from November to March. The current ambient air quality profile is affected through residential traffic on the associated dirt roads, farming and agriculture activities. Planned sources of air pollution from the pipeline construction included as a minimum, infrastructure and equipment use:

- Tracked machinery and equipment;
- Heavy mobile vehicles;
- Dump trucks;
- Haul trucks;
- Light motor vehicles;
- Access roads.

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		1

3. LEGISLATIVE CONTEXT AND REFERENCES

Section 28 of the National Environmental Management Act (NEMA, Act 107 of 1998) places a duty of care on any person causing, has caused or may cause significant pollution or degradation of the environment to take reasonable measures to prevent such pollution or degradation from occurring, continuing, or, insofar as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped and rectify such pollution of the environment.

The measures required in terms of subsection (1) may include measures to:

- Investigate, assesses and evaluate the impact on the environment,
- Inform and educate employees on the environmental risk of their work and the manner in which tasks must be performed in order to avoid causing significant pollution or degradation of the environment;
- Cease, modify or control any activity or processes causing pollution or degradation;
- Contain or prevent the movement of pollutants or the cause of degradation;
- Eliminate any source of the pollution or degradation; or
- Remedy the effects of pollution or degradation.

The National Environmental Management: Air Quality Act (Act no. 39 of 2004) (AQA) was developed to give effect to NEMA in order to update air quality legislation to comply with general environmental policies and to ensure that the legislation is in line with local and international standards on air quality and air quality management practices. The main objectives of the act are to:

- Enhance and protect air quality;
- Provide reasonable measures and steps to prevent pollution or environmental degradation; and
- To secure sustainable environmental development in conjunction with economic and social development.

In terms of the AQA certain activities and industries, including mining, have the responsibility to:

- Comply with any relevant standards or bylaws;
- Comply with relevant emission standards;
- **Comply with the Minister's requirement for the implementation of a pollution prevention plan in respect of a substance declared as a priority air pollutant;**
- **Comply with an Air Quality Official's legal request for impact reports;**
- Taking reasonable steps to prevent the emission of any offensive odour caused by any activity on their premises.

Guidelines provide a basis for protecting public health from the adverse effects of air pollution and for eliminating, or reducing to a minimum, those contaminants of air that are known or likely to be hazardous to human health and well-being (WHO, 2000).

The South African Bureau of Standards (SABS), in collaboration with DEA, established ambient air quality standards for criteria

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		2

pollutants. The National Ambient Air Quality Standards (Republic of South Africa, 2009a and 2012) provide standards for ambient air quality in terms of criteria pollutants and permitted frequency of exceedances.

4. PURPOSE

The purpose of this assessment is to determine the baseline ambient air quality of the proposed development area. The baseline air quality assessment will measure the current ambient air quality before commencement of construction. The compliance monitoring is based on a pro-active approach to assess air quality on a continuous basis, by measuring the air quality levels.

Generated dust can become a nuisance (or health risk) when it is not properly managed and mitigated. Dust can be a concern to the surrounding land users and receiving environment and it is therefore important to determine the potential of dust generated by the activities.

This report is structured to include the following:

- Purpose / Objective of the study;
- Scope of Works / terms of reference;
- Description of methodologies utilised;
- Limitations and assumptions;
- Results from the baseline results; and
- Summary of findings and recommendations.

This report also aims to give effect to the requirements and legislation as promulgated in South Africa. Please refer to Section 2 for detailed legislative requirements for the study. Key aspects for the purpose of this document is to:

- Describe baseline air quality conditions and how it could be affected;
- Raise relevant air quality concerns of the proposed project; and
 - To recommend, based on the conditions, preventative measures for implementation once the activity commences.

5. METHODOLOGY

5.1 SITE ESTABLISHMENT AND SCOPE OF WORK

An initial desktop site assessment was conducted to determine suitable locations regarding the air quality baseline assessment in conjunction with GBN-JV representatives. The result of the desktop study was the identification of areas to provide a holistic baseline condition of the overall pipeline and associated extent.

Site establishment was implemented in February 2021 followed by monthly passive dust monitoring, while active indicative was initiated during July 2021.

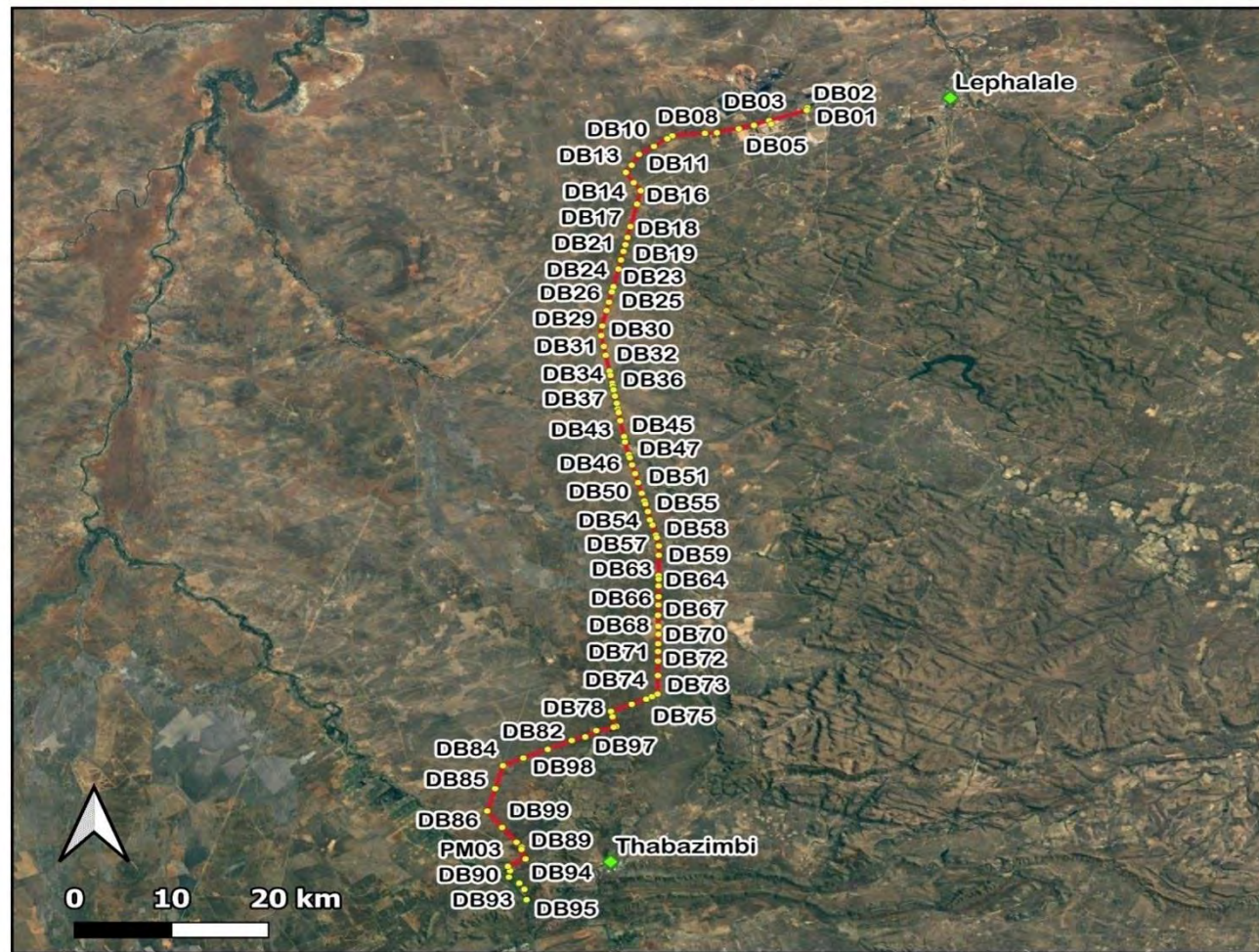
Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		3

Sampling occurred as per the scope of work at the identified sampling localities (100 in total) presented in Table 1 and Figure 1 to Figure 3.

Table 1: Monitoring Resources and Sampling Frequencies

Description	Locality Count	Monitoring Frequency
Dust Stand Monitoring Points: <ul style="list-style-type: none"> • Along Pipeline Alignment; • Selected positions at the Weir, Balancing dams, Break Pressure Reservoir and Points of Supply; • Monitoring Weirs; • Along Gravel Access Roads; • Borrow Pits and Spoil Areas; and • Sensitive Receptors. 	100	Monthly
PM10 E-Sampler <ul style="list-style-type: none"> • Kesarona Primary School, Medupi Power Station & Mooivalei 	3	Monthly

GIBB Bigen Nyeleti Joint Venture (GBN-JV) - Air Quality Monitoring Programme



Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points

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ENVIRONMENTAL ASSURANCE (Pty) Ltd

Project: 244-20_21

Map by: Richard Viljoen

Date: 11/02/2021

Coordinate System: EPSG 3857

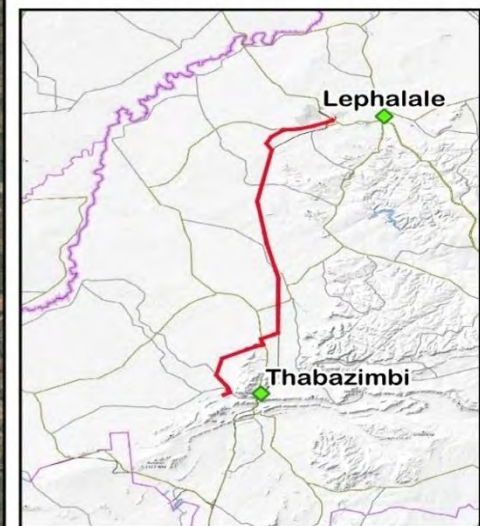
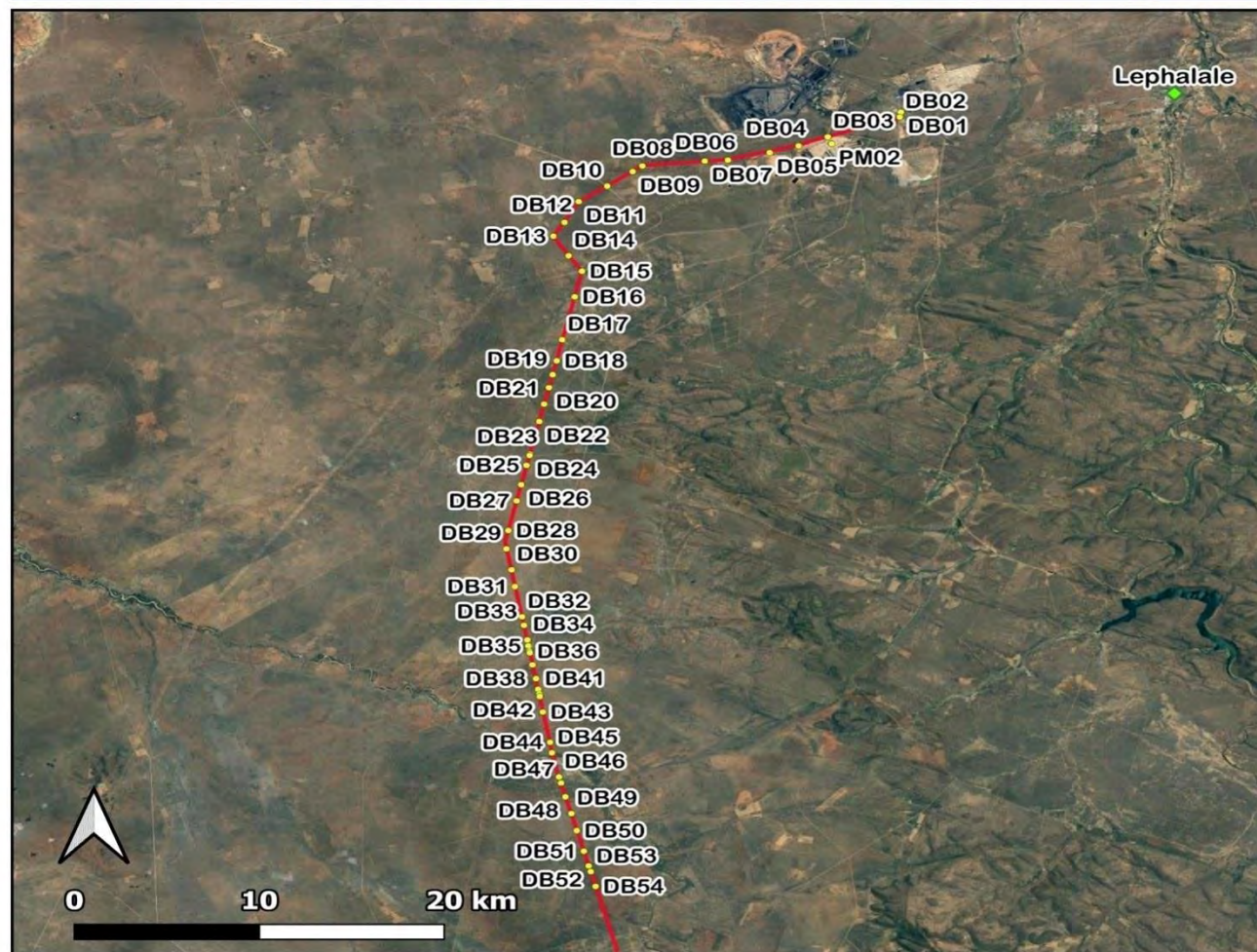


Figure 1: GBN-JV Air Quality Monitoring Localities

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		5

GIBB Bigen Nyeleti Joint Venture (GBN-JV) - Air Quality Monitoring Programme



Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points

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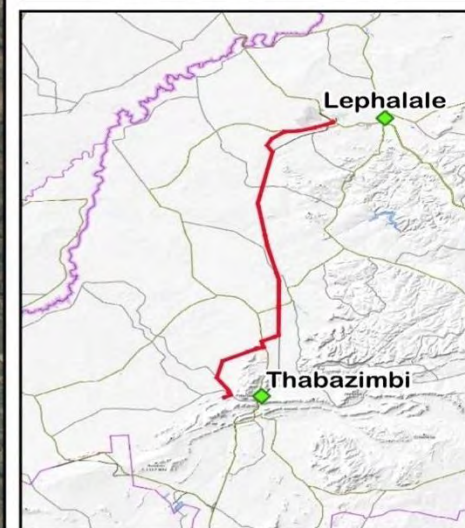
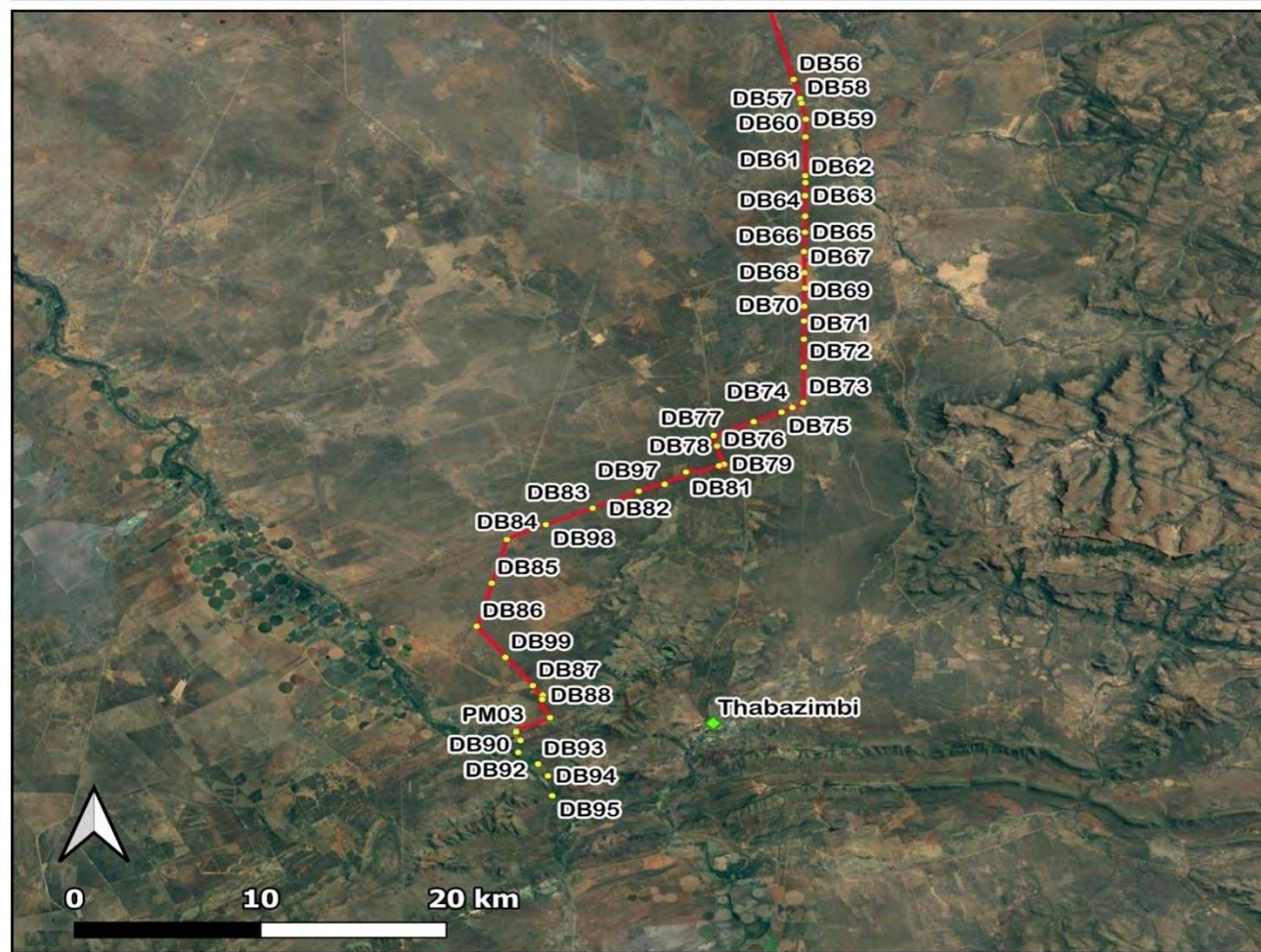


Figure 2: GBN-JV Air Quality Monitoring Localities (Northern Region)

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		6

GIBB Bigen Nyeleti Joint Venture (GBN-JV) - Air Quality Monitoring Programme



Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points

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Map by: Richard Viljoen

Date: 11/02/2021

Coordinate System: EPSG 3857

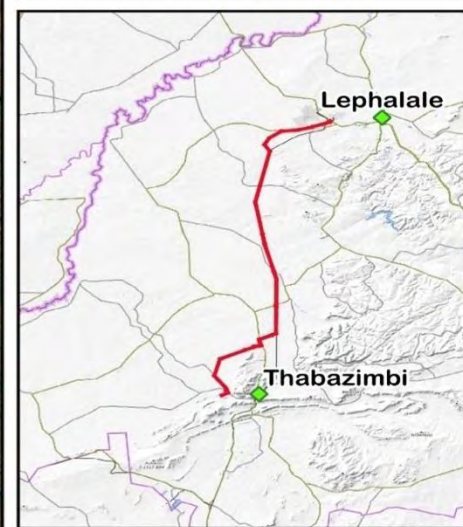


Figure 3: GBN-JV Air Quality Monitoring Localities (Southern Region)

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		7

5.2 ACTIVE INDICATIVE MONITORING

The Met One Instruments, Inc. model E-Sampler is a type of nephelometer which automatically measures and records real-time airborne PM₁₀, PM_{2.5}, or TSP particulate concentration levels using the principle of forward laser light scatter. In addition, the E-Sampler has a built-in 47 mm filter sampler which can optionally be used to collect the particulate for subsequent gravimetric mass or laboratory evaluation.

Laser Light Scatter System

Sample air is drawn into the E-Sampler and through the laser optical module, where the particulate in the sample air stream scatters the laser light through reflective and refractive properties. This scattered light is collected onto a photodiode detector at a near-forward angle, and the resulting electronic signal is processed to determine a continuous, real-time measurement of airborne particulate mass concentrations.

Gravimetric Filter Sampler System

After the sample air stream has been measured by the E-Sampler and exits the optical engine, it passes through the built-in 47 mm filter sampler system. This system allows the particulate to optionally be collected on a filter disc as a second method to obtain airborne particulate mass data, or for laboratory analysis of the particulate. The 47 mm filter system can also be used to determine a gravimetric K-factor (slope multiplier) to correct the E-Sampler real-time signal to match the local particulate type. In this case, a filter disc is weighed on a microbalance before and after being run in the E-Sampler for a period of time. The resulting mass of the dust on the filter is correlated with the concentrations that the E-Sampler recorded over the same time period, and a correction factor is calculated. The E-Sampler can be used with no correction factor in applications where relative particulate trending is appropriate.



Figure 4: Met One Instruments E-Sampler-9800

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		8

Additional details of the apparatus:

- Model: E-Sampler-9800
- Key Features: Real Time Particulate Monitor
- Description: Particulate and air quality monitoring combined in one instrument.

Results obtained from active indicative sampling is evaluated against ambient air quality limits for any common pollutants (SANS 1929:2011) as represented in Table 1 below:

Table 2: Ambient air quality limits for common pollutants (SANS 1929:2011) (Limit Values in $\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Limit Value	Frequency of Exceedance	Compliance Date
Particulate Matter PM ₁₀	24 – hour average	120	4	Immediate – 31 December 2014
	24 – hour average	75	4	1 January 2015
	Annual average	50	0	Immediate – 31 December 2014
	Annual average	40	0	1 January 2015

5.3 PASSIVE DUST MONITORING

Dust buckets of a standard size and shape are prepared and set up at locations within the servitude of the pipeline and ancillary infrastructure, in order for dust to settle for periods of 30 (± 2) days. The dust buckets are collected and sealed on site and sent to a SANAS accredited laboratory for analysis. The masses of the water-soluble and insoluble components of the material collected are then determined and results are reported as $\text{mg}/\text{m}^2/\text{day}$. This methodology is described according to South African National Standards 1929:2011 and the American Society for Testing and Materials (ASTM) Designation: D 1739-98 (2017) standards. The results for this method of testing are obtained by gravimetric weighing. The apparatus required for this type of monitoring include open-top buckets/containers no less than 150mm in diameter with a height of no less than twice its diameter. The buckets must be placed on a stand at a height of 2 (± 0.2) m above the ground.

Results obtained is evaluated against the four-band scale for dust deposition (SANS 1929:2011) and the National Dust Control Regulation limits (GN827).

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		9

Table 3: Four-band scale evaluation criteria for dust deposition (SANS 1929: 2011)

Band Number	Band Description level	Classification	Dust fallout rate (D) (mg/m ² /day, 30-day average)	Comment
1	Residential	Ideal	$D > 600$	Permissible for residential and light commercial
2	Industrial	Acceptable	$600 < D < 1200$	Permissible for heavy commercial and industrial
3	Action	Tolerable	$1200 < D < 2400$	Requires investigation and remediation if two sequential months lie in this band, or more than three occur in a year.
4	Alert	Unacceptable	$2440 < D$	Immediate action and remediation required followed the first incidence of dust fallout rate being exceeded. Incidents report is submitted to the relevant authority.

The National Dust Control Regulations identify the permissible amount of gravimetric dust fallout, as indicated below:

Table 4: Acceptable dust fallout results (GNR 827)

Restriction Areas	Dust fall rate (D) (mg / m ² / day, 30-day average)	Permitted frequency of exceeding dust fall rate
Residential Area	$D < 600$	Two within a year, not sequential months.
Non-residential Area	$600 < D < 1200$	Two within a year, not sequential months.

6. EMISSION GENERATION AND POLLUTANT OVERVIEW

The current dust generating activities at the site include movement of vehicles along the proposed pipeline route.

It is important to predict and determine possible areas of emission generation as early identification can help develop mitigation or prevention plans for the specific emission generating activities. A prediction is made possible by using existing examples of emission generating activities on other sites and its effect and measures in place to mitigate. From the activities proposed for this project the following can be expected to be activities that can cause or lead to the generation of emissions:

Construction Phase:

- Site establishment including fencing and security;
- Site and vegetation clearing;
- Soil stripping, stockpiling, earthworks and diggings;
- Storage of waste and construction materials;
- Materials transport;
- Foundations and constructions;
- Surfacing;
- Tracked machinery and equipment;
- Heavy mobile vehicles;
- Articulated dump trucks;
- Haul trucks;
- Light motor vehicles;
- Access roads; and
- Materials stockpiles.

From the abovementioned activities, exhaust emissions from construction vehicles and equipment will typically include particulates, such as PM₁₀, carbon monoxide (CO), sulphur dioxide (SO₂) and volatile organic compounds (VOCs). Additionally, disturbance of groundcover caused by groundworks and activities will further impact on particulate matter generation.

6.1 PARTICULATE MATTER

Particles can be classified by its aerodynamic properties into coarse particles (gravimetric), PM₁₀ (particulate matter with a diameter of less than or equal to 10 microns), PM₄ (particulate matter with a diameter of less than or equal to 4 microns), very fine particles such as PM_{2.5} (particulate matter with a diameter of less than or equal to 2.5 microns) and PM₁ (particulate matter with a diameter of less than or equal to 1 microns) (Harrison and van Grieken, 1998). The fine particles may contain **aerosols such as sulphates and nitrates (they “cling” to particulate matter), combustion particles and/or recondensed organic and metal vapours**. The coarse particles contain earth crust materials and fugitive dust from roads and industries (Fenger, 2002).

Document No:	MON-AQR-244-20_21 (21-08)		Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021	Environmental Assurance (Pty) Ltd	11

In terms of health impacts, particulate air pollution effects are broad, but are predominately associated with effects of the respiratory and cardiovascular systems (WHO, 2000). Particle size is important for health because it controls where in the respiratory system a given particle deposits. Fine particles have been found to be more damaging to human health than coarse particles as larger particles are less respirable in that they do not penetrate deep into the lungs compared to smaller particles (Manahan, 1991).

Larger particles are deposited into the extra thoracic part of the respiratory tract while smaller particles are deposited into the smaller airways leading to the respiratory bronchioles (WHO, 2000). A study by Pope and Burnett (2002) indicated that PM_{2.5} leads to high plaque deposits in arteries, causing vascular inflammation and atherosclerosis (Kaonga and Kgabi, 2009). As yet, no evidence of a threshold in the relationship between particulate concentrations and adverse human health effects have been determined (Burger and Scorgie, 2001; WHO 2005).

- *Short-term (acute) exposure*

Recent studies suggest that short-term exposure to particulate matter leads to adverse health effects, even at low **concentrations of exposure (below 100 µg/m³)**. Morbidity effects associated with short-term exposure to particulates include increases in lower respiratory symptoms, medication use and small reductions in lung function.

- *Long-term (or chronic) exposure*

Long-term exposure to low concentrations (~10 µg/m³) of particulates is associated with mortality and other chronic effects such as increased rates of bronchitis and reduced lung function (WHO, 2000). Those most at risk include the elderly, individuals with pre-existing heart or lung disease, asthmatics and children; with an increased risk associated with an increase in exposure (WHO 2005).

6.2 ENVIRONMENTAL IMPACT

Trace gases and aerosols impact the climate through the effect on the radiative balance of the earth. Trace gases such as greenhouse gases absorb and emit infrared radiation which raises the temperature of the **earth's surface causing the** enhanced greenhouse effect. Aerosol particles have a direct effect by scattering and absorbing solar radiation and an indirect effect by acting as cloud condensation nuclei. Atmospheric aerosol particles range from dust and smoke to mists, smog and haze (IPCC, 2001). Smog and haze are common in regions where certain geographic features, such as mountains, and weather conditions, such as temperature inversions, contribute to the trapping of air pollutants (Kumar and Mohan, 2002). Smog and haze also contribute to visibility degradation through the absorption and scattering of radiation by gases and particulates (Elsom, 1996).

Other environmental impacts associated with air pollution include loss of biodiversity and damage to sensitive environments.

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		12

7. RESULTS AND DISCUSSION

7.1. MONTHLY SAMPLING REGISTER

Table 5 below illustrates the August to September 2021 sampling register as recorded by ENVASS during the monthly monitoring.

Table 5: August 2021 Monthly Sampling Register

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
Passive Dust Fallout							
DB01	Grootestryd 465 LQ Portion 5	23°40'41.16"S	27°36'4.24"E	Damon Nell/ Enock Machete	16 th Sep 2021	08:45	Sampled
DB02	Grootestryd 465 LQ Portion 5	23°40'52.25"S	27°36'2.03"E		16 th Sep 2021	08:49	Sampled
DB03	Along D1675 outside of Turfvlakte 463 LQ farm	23°41'37.30"S	27°33'44.10"E		15 th Sep 2021	14:10	Sampled
DB04	Along D1675 outside of Hierontrent 460 LQ farm	23°41'57.80"S	27°32'48.26"E		15 th Sep 2021	14:05	Sampled
DB05	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'13.03"S	27°31'52.68"E		15 th Sep 2021	14:00	Sampled
DB06	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'29.97"S	27°30'32.64"E		15 th Sep 2021	13:55	Sampled
DB07	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'32.26"S	27°29'48.38"E		15 th Sep 2021	13:53	Sampled
DB08	Along D1675 outside of Pontes Estate 744 LQ farm	23°42'43.21"S	27°27'48.78"E		15 th Sep 2021	13:47	Sampled
DB09	Pontes Estate 744 LQ (Buffels Jag)	23°42'55.98"S	27°27'30.40"E		16 th Sep 2021	10:19	Sampled
DB10	Pontes Estate 744 LQ (Buffels Jag)	23°43'28.90"S	27°26'41.33"E		16 th Sep 2021	10:26	Sampled
DB11	Pontes Estates 712 LQ	23°44'4.06"S	27°25'46.60"E		16 th Sep 2021	09:49	Sampled
DB12	Along unnamed dirt road bordering Exxaro mine	23°41'23.55"S	27°34'20.99"E		16 th Sep 2021	08:11	Sampled
DB13	D729 dirt road	24°38'30.48"S	27°18'53.46"E		14 th Sep 2021	06:28	Sampled
DB14	Along unnamed dirt road bordering Exxaro mine	23°41'8.24"S	27°35'18.63"E		16 th Sep 2021	08:22	Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		13

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB15	Servitude Road	23°46'41.92"S	27°25'52.99"E		16 th Sep 2021	13:20	Sampled
DB16	Servitude Road	23°47'39.91"S	27°25'39.16"E		15 th Sep 2021	13:14	Sampled
DB17	Servitude Road	23°49'17.37"S	27°25'15.13"E		15 th Sep 2021	13:07	Sampled
DB18	Servitude Road	23°50'5.11"S	27°25'4.54"E		15 th Sep 2021	12:33	Sampled
DB19	Servitude Road	23°50'36.53"S	27°24'56.77"E		15 th Sep 2021	12:27	Sampled
DB20	Servitude Road	23°51'5.81"S	27°24'49.59"E		15 th Sep 2021	12:24	Sampled
DB21	Servitude Road	23°51'43.25"S	27°24'40.22"E		15 th Sep 2021	12:21	Sampled
DB22	Servitude Road	23°52'22.70"S	27°24'31.05"E		15 th Sep 2021	12:18	Sampled
DB23	Servitude Road	23°53'36.73"S	27°24'13.40"E		15 th Sep 2021	12:14	Sampled
DB24	Servitude Road	23°53'39.51"S	27°24'12.55"E		15 th Sep 2021	12:09	Sampled
DB25	Servitude Road	23°54'1.90"S	27°24'6.76"E		15 th Sep 2021	12:07	Sampled
DB26	Servitude Road	23°54'46.08"S	27°23'56.64"E		15 th Sep 2021	12:02	Sampled
DB27	Servitude Road	23°55'22.69"S	27°23'47.77"E		15 th Sep 2021	11:59	Sampled
DB28	Servitude Road	23°56'29.84"S	27°23'31.71"E		15 th Sep 2021	11:54	Sampled
DB29	Servitude Road	23°57'11.41"S	27°23'28.14"E		15 th Sep 2021	11:51	Sampled
DB30	Servitude Road	23°57'58.79"S	27°23'37.97"E		15 th Sep 2021	11:47	Sampled
DB31	Servitude Road	23°58'36.77"S	27°23'44.50"E		15 th Sep 2021	11:43	Sampled
DB32	Servitude Road	23°59'45.59"S	27°23'58.25"E		15 th Sep 2021	11:39	Sampled
DB33	Servitude Road	24° 0'4.67"S	27°24'1.95"E		15 th Sep 2021	11:35	Sampled
DB34	Servitude Road	24° 0'37.82"S	27°24'8.36"E		15 th Sep 2021	11:32	Sampled
DB35	Servitude Road	24° 0'51.33"S	27°24'10.07"E		15 th Sep 2021	11:30	Sampled
DB36	Servitude Road	24° 1'3.54"S	27°24'12.35"E		15 th Sep 2021	11:26	Sampled
DB37	Servitude Road	24° 1'7.07"S	27°24'13.15"E		15 th Sep 2021	11:24	Sampled
DB38	Servitude Road	24° 1'34.37"S	27°24'18.32"E		15 th Sep 2021	11:21	Sampled
DB39	Servitude Road	23°41'35.31"S	27°38'51.43"E		15 th Sep 2021	11:19	Sampled

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB40	Servitude Road	24° 2'29.74"S	27°24'28.91"E	Damon Nell/ Enock Machete	15 th Sep 2021	11:16	Sampled
DB41	Servitude Road	24° 2'40.69"S	27°24'31.20"E		15 th Sep 2021	11:13	Sampled
DB42	Servitude Road	24° 2'46.02"S	27°24'32.19"E		15 th Sep 2021	11:11	Sampled
DB43	Servitude Road	24° 3'21.38"S	27°24'37.93"E		15 th Sep 2021	11:08	Sampled
DB44	Servitude Road	24° 4'29.95"S	27°24'51.86"E		15 th Sep 2021	10:46	Sampled
DB45	Servitude Road	24° 4'53.87"S	27°24'55.26"E		15 th Sep 2021	10:43	Sampled
DB46	Servitude Road	24° 5'48.56"S	27°25'8.99"E		15 th Sep 2021	09:37	Sampled
DB47	Servitude Road	24° 6'2.39"S	27°25'12.90"E		15 th Sep 2021	09:35	Sampled
DB48	Servitude Road	24° 6'33.52"S	27°25'21.12"E		15 th Sep 2021	09:33	Sampled
DB49	Servitude Road	24° 7'11.42"S	27°25'32.63"E		15 th Sep 2021	09:29	Sampled
DB50	Servitude Road	24° 7'50.30"S	27°25'43.01"E		15 th Sep 2021	09:26	Sampled
DB51	Servitude Road	24° 8'36.82"S	27°25'56.47"E		15 th Sep 2021	09:23	Sampled
DB52	Servitude Road	24° 9'10.22"S	27°26'5.85"E		15 th Sep 2021	09:21	Sampled
DB53	Servitude Road	24° 9'23.38"S	27°26'10.00"E		15 th Sep 2021	09:19	Sampled
DB54	Servitude Road	24° 9'56.57"S	27°26'19.10"E		15 th Sep 2021	09:17	Sampled
DB55	Servitude Road	24°10'32.51"S	27°26'26.49"E		15 th Sep 2021	09:15	Sampled
DB56	Servitude Road	24°10'55.15"S	27°26'36.17"E		15 th Sep 2021	09:13	Sampled
DB57	Servitude Road	24°11'38.61"S	27°26'48.79"E		15 th Sep 2021	09:10	Sampled
DB58	Servitude Road	24°11'49.30"S	27°26'51.53"E		15 th Sep 2021	06:30	Sampled
DB59	Servitude Road	24°12'25.42"S	27°26'59.45"E		15 th Sep 2021	06:36	Sampled
DB60	Servitude Road	24°13'6.00"S	27°26'59.07"E		15 th Sep 2021	06:40	Sampled
DB61	Servitude Road	24°14'34.19"S	27°26'58.48"E		15 th Sep 2021	06:47	Sampled
DB62	Servitude Road	24°14'49.64"S	27°26'58.86"E		15 th Sep 2021	06:49	Sampled
DB63	Servitude Road	24°15'19.44"S	27°26'58.33"E		15 th Sep 2021	06:53	Sampled
DB64	Servitude Road	24°16'6.23"S	27°26'58.26"E		15 th Sep 2021	06:58	Sampled

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB65	Servitude Road	24°16'42.57"S	27°26'57.57"E	Damon Nell/ Enock Machete	15 th Sep 2021	07:01	Sampled
DB66	Servitude Road	24°17'26.82"S	27°26'56.01"E		15 th Sep 2021	07:05	Sampled
DB67	Servitude Road	24°18'14.46"S	27°26'56.97"E		15 th Sep 2021	07:09	Sampled
DB68	Servitude Road	24°18'49.52"S	27°26'57.63"E		15 th Sep 2021	07:12	Sampled
DB69	Servitude Road	24°19'31.03"S	27°26'56.52"E		15 th Sep 2021	07:15	Sampled
DB70	Servitude Road	24°20'4.26"S	27°26'56.14"E		15 th Sep 2021	07:18	Sampled
DB71	Servitude Road	24°20'45.70"S	27°26'55.87"E		15 th Sep 2021	07:21	Sampled
DB72	Servitude Road	24°21'48.85"S	27°26'55.81"E		15 th Sep 2021	07:26	Sampled
DB73	Servitude Road	24°23'9.52"S	27°26'54.85"E		15 th Sep 2021	07:30	Sampled
DB74	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'21.10"S	27°26'33.71"E		15 th Sep 2021	07:34	Sampled
DB75	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'31.60"S	27°26'13.03"E		15 th Sep 2021	07:37	Sampled
DB76	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'53.46"S	27°25'19.77"E		15 th Sep 2021	13:27	Sampled
DB77	Along the R510	24°24'24.61"S	27°24'3.45"E		14 th Sep 2021	13:24	Sampled
DB78	Along the R510	23°41'35.31"S	27°38'51.43"E		14 th Sep 2021	12:12	Sampled
DB79	Along the R510	24°25'29.93"S	27°24'23.06"E		14 th Sep 2021	12:14	Sampled
DB80	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°25'33.45"S	27°24'13.50"E		14 th Sep 2021	12:21	Sampled
DB81	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°25'47.88"S	27°23'10.20"E		14 th Sep 2021	12:30	Sampled
DB82	Between Buffelsvley 127 KQ and Karoobult 126 KQ	24°26'31.14"S	27°21'39.92"E		14 th Sep 2021	12:36	Sampled
DB83	Between Buffelsvley 127 KQ and Karoobult 126 KQ	24°27'9.88"S	27°20'11.67"E		14 th Sep 2021	11:16	Sampled
DB84	Paarl 124 KQ Portion 6	24°28'20.86"S	27°17'27.36"E		14 th Sep 2021	11:08	Sampled
DB85	Paarl 124 KQ Portion 3	24°30'0.19"S	27°16'58.48"E		14 th Sep 2021	11:36	Sampled

Document No:
Revision:
Date:

MON-AQR-244-20_21 (21-08)
0.0
August 2021



Environmental Assurance (Pty) Ltd

Client Restricted
Author: D Nell

16

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB86	D769 dirt road	24°31'38.11"S	27°16'29.83"E	Damon Nell/ Enock Machete	14 th Sep 2021	11:36	Sampled
DB87	D769 dirt road	24°33'53.16"S	27°18'16.95"E		14 th Sep 2021	11:47	Sampled
DB88	Within small community near Stratford 462 KQ	24°34'14.79"S	27°18'36.10"E		14 th Sep 2021	10:26	Sampled
DB89	Near Primary School	24°34'24.25"S	27°18'35.18"E		14 th Sep 2021	10:01	Sampled
DB90	Mooivalei 342 KQ – Portion 1	24°35'35.70"S	27°17'45.31"E		14 th Sep 2021	08:54	Sampled
DB91	Mooivalei 342 KQ – Portion 2	24°35'59.20"S	27°17'38.40"E		14 th Sep 2021	08:49	Sampled
DB92	Mooivalei 342 KQ – Portion 4	24°36'25.02"S	27°17'49.23"E		14 th Sep 2021	07:23	Sampled
DB93	Mooivalei 342 KQ – Portion 7	24°36'51.37"S	27°18'27.13"E		14 th Sep 2021	07:39	Sampled
DB94	Mooivalei 342 KQ – Portion 9	24°37'18.10"S	27°18'45.97"E		14 th Sep 2021	07:44	Sampled
DB95	D729 dirt road	24°38'3.48"S	27°18'54.13"E		14 th Sep 2021	06:20	Sampled
DB96	Along unnamed dirt road bordering Exxaro mine	23°41'25.22"S	27°34'18.42"E		16 th Sep 2021	08:17	Sampled
DB97	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°26'15.46"S	27°22'29.41"E		14 th Sep 2021	12:25	Sampled
DB98	Buffelsvley 127 KQ	24°26'48.84"S	27°18'57.38"E		14 th Sep 2021	13:05	Sampled
DB99	D769 dirt road	24°32'48.86"S	27°17'24.55"E		14 th Sep 2021	11:42	Sampled
DB100	Mooivalei 342 KQ – Portion 1	24°35'5.76"S	27°18'49.94"E		14 th Sep 2021	08:41	Sampled
E-Sampler PM Monitoring							
PM01	Near Primary School	24°34'22.26"S	27°18'33.97"E	Damon Nell/ Enock Machete	14 th Sep 2021	09:35	Sampled
PM02	Eskom (Medupi Power Station)	23°41'50.52"S	27°34'7.72"E		14 th Sep 2021	10:02	Sampled
PM03	Mooivalei 342 KQ – Portion 1	24°35'36.99"S	27°17'43.54"E		16 th Sep 2021	13:46	Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		17

7.2. PARTICULATE MATTER RESULTS

Particulate matter is measured using two (2) techniques. The first method involves the use of a hand-held PM meter (section 7.2.1) which is sampled at every dust fallout sampling locality. The second method involves the use of three (3) Stations Met One E-Samplers and compared to the SANS 1929:2011 24-hour limit of 75 mg/m³ for both PM₁₀ to determine compliance. Two (2) E-samplers were installed during the June 2021 monitoring period with the final E-sampler being installed during the August 2021 monitoring period.

7.2.1. Active Handheld PM Monitoring

Table 6: PM meter results

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
DB - 1	Jun-21 to Jul-21	1.20	13.30	20.70	72.40	154.40
	Jul-21 to Aug-21	3.20	17.20	36.70	106.70	131.30
	Aug-21 to Sep-21	7.20	28.40	47.50	88.00	104.60
DB - 2	Jun-21 to Jul-21	1.90	26.40	37.70	96.60	138.50
	Jul-21 to Aug-21	4.20	11.30	39.70	214.40	422.80
	Aug-21 to Sep-21	7.10	29.70	51.10	87.60	99.30
DB - 3	Jun-21 to Jul-21	1.00	11.10	23.40	146.50	332.00
	Jul-21 to Aug-21	3.10	13.60	41.40	124.80	151.30
	Aug-21 to Sep-21	2.10	5.10	15.30	111.50	201.50
DB - 4	Jun-21 to Jul-21	1.10	3.90	28.40	255.50	710.40
	Jul-21 to Aug-21	3.20	21.60	54.10	206.10	273.90
	Aug-21 to Sep-21	2.40	9.70	15.30	33.30	40.70
DB - 5	Jun-21 to Jul-21	4.20	71.20	92.80	203.30	300.70
	Jul-21 to Aug-21	1.90	10.80	18.10	51.90	74.70
	Aug-21 to Sep-21	3.10	19.00	42.00	108.80	129.80
DB - 6	Jun-21 to Jul-21	0.60	2.80	8.70	41.20	54.20
	Jul-21 to Aug-21	3.00	24.80	31.10	51.00	60.80
	Aug-21 to Sep-21	2.20	7.40	13.30	41.90	67.20
DB - 7	Jun-21 to Jul-21	0.60	2.90	5.50	12.10	14.60
	Jul-21 to Aug-21	1.60	4.90	11.20	35.10	46.80
	Aug-21 to Sep-21	2.30	14.60	18.70	34.50	43.80
DB - 8	Jun-21 to Jul-21	0.70	5.50	13.50	62.90	107.80
	Jul-21 to Aug-21	1.80	5.30	11.80	36.50	49.40
	Aug-21 to Sep-21	2.30	11.70	19.50	68.30	96.60
DB - 9	Jun-21 to Jul-21	0.60	2.10	4.60	12.00	14.40
	Jul-21 to Aug-21	2.00	14.20	19.60	57.70	107.00
	Aug-21 to Sep-21	7.90	34.30	82.40	210.70	261.90
DB - 10	Jun-21 to Jul-21	0.70	5.40	11.00	49.10	79.30
	Jul-21 to Aug-21	1.70	7.30	13.40	35.80	48.70
	Aug-21 to Sep-21	8.20	42.20	91.50	246.40	288.50

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
DB - 11	Jun-21 to Jul-21	2.20	23.00	35.50	79.40	98.50
	Jul-21 to Aug-21	2.10	13.00	36.30	121.90	165.60
	Aug-21 to Sep-21	7.60	29.50	58.90	149.80	200.90
DB - 12	Jun-21 to Jul-21	-	-	-	-	-
	Jul-21 to Aug-21	3.50	10.80	73.70	298.80	394.40
	Aug-21 to Sep-21	7.30	31.40	51.70	87.80	109.90
DB - 13	Jun-21 to Jul-21	59.10	1260.10	3339.30	11149.60	15194.70
	Jul-21 to Aug-21	2.50	30.80	46.10	98.10	133.30
	Aug-21 to Sep-21	5.00	98.00	174.70	438.30	516.00
DB - 14	Jun-21 to Jul-21	1.10	5.90	33.90	227.70	359.00
	Jul-21 to Aug-21	3.40	20.50	54.00	190.30	237.20
	Aug-21 to Sep-21	7.30	28.60	47.50	79.20	95.90
DB - 15	Jun-21 to Jul-21	1.80	21.00	47.60	160.90	220.70
	Jul-21 to Aug-21	1.60	5.50	8.80	17.80	22.10
	Aug-21 to Sep-21	2.20	7.30	12.00	27.60	31.30
DB - 16	Jun-21 to Jul-21	0.90	7.30	21.40	120.40	233.80
	Jul-21 to Aug-21	1.60	6.80	12.50	41.00	60.80
	Aug-21 to Sep-21	2.20	7.80	13.70	32.00	42.50
DB - 17	Jun-21 to Jul-21	102.30	0.70	1.20	6.70	46.20
	Jul-21 to Aug-21	1.40	3.20	11.50	43.70	60.40
	Aug-21 to Sep-21	2.30	7.30	12.20	24.70	30.20
DB - 18	Jun-21 to Jul-21	1.40	20.20	35.00	124.70	187.50
	Jul-21 to Aug-21	1.50	2.50	12.00	52.60	88.30
	Aug-21 to Sep-21	2.40	10.20	19.20	62.50	81.00
DB - 19	Jun-21 to Jul-21	0.90	11.00	19.80	75.60	142.10
	Jul-21 to Aug-21	1.30	3.40	7.70	32.90	50.20
	Aug-21 to Sep-21	2.40	7.30	13.40	36.80	51.80
DB - 20	Jun-21 to Jul-21	0.70	5.60	14.00	68.30	155.20
	Jul-21 to Aug-21	1.50	7.40	11.30	30.90	43.80
	Aug-21 to Sep-21	2.70	8.60	15.50	44.10	58.90
DB - 21	Jun-21 to Jul-21	0.70	4.10	8.50	30.20	41.90
	Jul-21 to Aug-21	1.50	4.70	8.60	24.70	33.30
	Aug-21 to Sep-21	2.80	9.90	17.70	45.30	53.90
DB - 22	Jun-21 to Jul-21	0.70	2.60	12.00	75.60	135.40
	Jul-21 to Aug-21	1.50	8.60	12.90	27.00	33.80
	Aug-21 to Sep-21	3.0	16.5	26.2	71.4	109
DB - 23	Jun-21 to Jul-21	0.60	0.70	7.60	82.40	206.90
	Jul-21 to Aug-21	1.40	4.30	7.40	20.10	28.10
	Aug-21 to Sep-21	3.00	10.70	22.70	92.80	148.90
DB - 24	Jun-21 to Jul-21	4.50	85.70	126.60	321.70	410.40
	Jul-21 to Aug-21	2.80	28.60	59.00	162.00	202.10

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		19

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
	Aug-21 to Sep-21	2.90	5.80	35.70	125.60	137.90
DB - 25	Jun-21 to Jul-21	0.80	2.40	10.60	93.20	219.00
	Jul-21 to Aug-21	1.60	7.50	13.90	33.50	43.40
	Aug-21 to Sep-21	3.00	9.90	33.60	115.60	143.30
DB - 26	Jun-21 to Jul-21	0.80	3.30	7.10	18.30	24.40
	Jul-21 to Aug-21	1.60	19.50	24.30	48.80	69.80
	Aug-21 to Sep-21	3.20	9.50	43.60	152.50	175.30
DB - 27	Jun-21 to Jul-21	0.80	5.10	8.60	20.30	25.90
	Jul-21 to Aug-21	1.50	6.30	10.30	20.20	23.30
	Aug-21 to Sep-21	3.00	10.40	25.30	76.20	88.60
DB - 28	Jun-21 to Jul-21	0.80	5.70	9.40	28.10	49.10
	Jul-21 to Aug-21	5.00	29.90	38.70	66.10	75.90
	Aug-21 to Sep-21	2.90	9.00	21.60	61.90	77.40
DB - 29	Jun-21 to Jul-21	0.70	2.00	9.30	44.30	78.20
	Jul-21 to Aug-21	1.40	6.90	9.70	16.30	17.60
	Aug-21 to Sep-21	3.20	9.90	23.80	75.70	94.80
DB - 30	Jun-21 to Jul-21	1.80	31.40	37.00	63.20	79.80
	Jul-21 to Aug-21	1.50	4.40	7.80	16.00	19.10
	Aug-21 to Sep-21	3.20	13.20	28.30	79.80	102.60
DB - 31	Jun-21 to Jul-21	0.70	4.50	8.70	25.10	32.50
	Jul-21 to Aug-21	1.40	5.10	9.30	21.60	30.30
	Aug-21 to Sep-21	3.30	11.80	15.70	75.30	91.90
DB - 32	Jun-21 to Jul-21	0.70	1.80	7.50	34.60	67.30
	Jul-21 to Aug-21	1.40	4.00	7.70	16.50	21.40
	Aug-21 to Sep-21	3.10	11.20	22.50	61.90	78.50
DB - 33	Jun-21 to Jul-21	0.70	2.20	8.60	89.00	225.80
	Jul-21 to Aug-21	1.50	5.00	9.50	45.10	88.20
	Aug-21 to Sep-21	3.10	10.60	22.80	60.20	74.40
DB - 34	Jun-21 to Jul-21	0.70	2.20	7.20	39.50	90.70
	Jul-21 to Aug-21	1.40	2.80	9.00	33.20	52.30
	Aug-21 to Sep-21	3.30	11.10	22.60	58.40	83.10
DB - 35	Jun-21 to Jul-21	0.70	2.70	8.40	64.50	163.70
	Jul-21 to Aug-21	1.50	4.60	9.70	30.00	42.40
	Aug-21 to Sep-21	3.80	16.30	27.78	71.90	92.20
DB - 36	Jun-21 to Jul-21	0.80	5.80	10.80	35.70	53.50
	Jul-21 to Aug-21	1.40	3.30	7.80	30.50	52.00
	Aug-21 to Sep-21	3.40	12.20	24.50	69.00	97.30
DB - 37	Jun-21 to Jul-21	0.70	6.30	16.30	66.30	107.60
	Jul-21 to Aug-21	1.50	6.50	13.70	56.30	85.20
	Aug-21 to Sep-21	3.40	9.90	19.50	49.50	67.40
DB - 38	Jun-21 to Jul-21	0.70	3.60	8.30	31.70	64.40

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		20

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
	Jul-21 to Aug-21	1.40	1.40	1.40	169.20	558.10
	Aug-21 to Sep-21	3.40	10.60	20.40	53.20	69.20
DB - 39	Jun-21 to Jul-21	1.30	11.50	19.60	69.90	130.90
	Jul-21 to Aug-21	1.70	8.10	15.90	56.80	80.80
	Aug-21 to Sep-21	3.30	10.90	23.10	68.20	89.70
DB - 40	Jun-21 to Jul-21	1.40	18.00	27.40	95.20	170.40
	Jul-21 to Aug-21	1.70	9.20	21.10	69.60	93.60
	Aug-21 to Sep-21	3.80	13.60	24.70	69.90	95.80
DB - 41	Jun-21 to Jul-21	0.80	3.10	7.60	27.80	53.10
	Jul-21 to Aug-21	1.70	9.50	16.50	46.10	59.00
	Aug-21 to Sep-21	4.10	17.50	28.80	79.30	110.80
DB - 42	Jun-21 to Jul-21	1.00	9.40	15.00	46.80	83.10
	Jul-21 to Aug-21	1.50	4.00	9.70	38.40	60.60
	Aug-21 to Sep-21	3.60	11.80	20.80	46.00	60.80
DB - 43	Jun-21 to Jul-21	0.80	4.40	12.80	69.90	1495.00
	Jul-21 to Aug-21	1.60	6.90	14.00	43.80	61.10
	Aug-21 to Sep-21	4.40	22.10	33.00	60.70	68.10
DB - 44	Jun-21 to Jul-21	0.80	4.30	12.60	47.70	71.70
	Jul-21 to Aug-21	2.20	9.90	34.90	177.90	343.70
	Aug-21 to Sep-21	3.50	9.90	17.70	41.90	53.60
DB - 45	Jun-21 to Jul-21	0.70	4.00	11.60	37.70	56.20
	Jul-21 to Aug-21	2.30	21.90	30.20	69.80	100.60
	Aug-21 to Sep-21	3.50	12.10	19.90	43.90	50.00
DB - 46	Jun-21 to Jul-21	2.20	48.10	64.80	145.50	212.60
	Jul-21 to Aug-21	1.70	1.70	23.00	156.30	197.60
	Aug-21 to Sep-21	3.50	12.50	20.00	45.90	54.00
DB - 47	Jun-21 to Jul-21	0.80	6.60	11.90	33.20	44.90
	Jul-21 to Aug-21	1.80	1.80	35.00	169.40	200.20
	Aug-21 to Sep-21	3.50	10.90	19.30	48.40	60.70
DB - 48	Jun-21 to Jul-21	1.00	21.00	30.40	71.90	107.00
	Jul-21 to Aug-21	1.80	5.90	18.00	61.00	77.00
	Aug-21 to Sep-21	3.50	10.30	17.80	42.20	52.10
DB - 49	Jun-21 to Jul-21	0.80	9.60	14.40	31.20	39.80
	Jul-21 to Aug-21	1.80	6.90	15.60	48.40	66.20
	Aug-21 to Sep-21	3.50	11.70	19.80	46.10	56.60
DB - 50	Jun-21 to Jul-21	2.20	46.30	63.70	141.30	223.90
	Jul-21 to Aug-21	2.00	9.20	24.40	76.30	96.60
	Aug-21 to Sep-21	3.40	12.00	19.50	44.10	52.70
DB - 51	Jun-21 to Jul-21	0.80	6.70	17.00	62.90	93.70
	Jul-21 to Aug-21	1.70	4.40	13.80	46.00	66.90
	Aug-21 to Sep-21					

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		21

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
DB - 52	Jun-21 to Jul-21	0.80	8.10	12.90	49.10	102.10
	Jul-21 to Aug-21	1.60	4.10	17.70	53.30	614.00
	Aug-21 to Sep-21	3.50	10.50	19.60	46.60	73.80
DB - 53	Jun-21 to Jul-21	0.60	3.30	7.40	20.20	30.10
	Jul-21 to Aug-21	2.60	19.90	28.40	58.70	69.80
	Aug-21 to Sep-21	3.50	10.60	17.90	44.00	57.50
DB - 54	Jun-21 to Jul-21	0.60	0.60	8.90	100.00	190.60
	Jul-21 to Aug-21	1.50	1.50	9.10	145.40	177.40
	Aug-21 to Sep-21	3.40	10.40	17.70	45.90	50.80
DB - 55	Jun-21 to Jul-21	0.90	8.90	19.50	70.50	101.30
	Jul-21 to Aug-21	2.70	26.30	57.40	162.30	206.60
	Aug-21 to Sep-21	3.40	12.00	19.60	44.90	57.30
DB - 56	Jun-21 to Jul-21	6.50	181.40	207.40	306.70	349.20
	Jul-21 to Aug-21	1.50	6.70	11.80	30.60	34.90
	Aug-21 to Sep-21	3.50	11.70	18.40	35.30	41.50
DB - 57	Jun-21 to Jul-21	0.70	4.00	12.30	42.00	64.20
	Jul-21 to Aug-21	1.40	4.30	9.30	21.10	29.70
	Aug-21 to Sep-21	3.50	10.80	17.50	35.50	46.60
DB - 58	Jun-21 to Jul-21	3.10	67.50	133.10	311.60	388.70
	Jul-21 to Aug-21	4.60	43.70	144.50	393.40	467.40
	Aug-21 to Sep-21	3.20	40.10	78.50	241.60	327.90
DB - 59	Jun-21 to Jul-21	0.90	10.90	28.30	103.00	157.30
	Jul-21 to Aug-21	2.30	11.40	19.80	46.00	57.70
	Aug-21 to Sep-21	3.80	52.90	87.70	302.00	474.30
DB - 60	Jun-21 to Jul-21	0.50	2.20	9.60	35.00	48.60
	Jul-21 to Aug-21	2.30	10.00	17.40	36.10	42.20
	Aug-21 to Sep-21	2.40	12.70	37.60	361.00	704.60
DB - 61	Jun-21 to Jul-21	1.90	41.20	66.70	214.70	360.80
	Jul-21 to Aug-21	2.20	7.80	15.30	32.90	36.00
	Aug-21 to Sep-21	2.30	10.80	29.00	90.80	124.10
DB - 62	Jun-21 to Jul-21	4.90	135.00	170.20	270.70	324.90
	Jul-21 to Aug-21	2.20	7.20	18.60	54.40	78.30
	Aug-21 to Sep-21	2.50	13.70	23.00	93.70	154.70
DB - 63	Jun-21 to Jul-21	1.30	28.20	48.10	120.50	166.80
	Jul-21 to Aug-21	2.50	2.50	39.90	739.30	1291.60
	Aug-21 to Sep-21	2.40	14.50	23.60	92.40	163.30
DB - 64	Jun-21 to Jul-21	0.60	2.10	7.90	29.70	45.70
	Jul-21 to Aug-21	2.60	15.60	37.70	152.40	227.00
	Aug-21 to Sep-21	2.10	10.60	18.10	59.10	86.20
DB - 65	Jun-21 to Jul-21	1.30	22.10	42.50	124.90	155.70
	Jul-21 to Aug-21	2.70	18.50	44.50	110.20	126.80

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		22

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
	Aug-21 to Sep-21	2.20	10.50	18.60	44.30	62.10
DB - 66	Jun-21 to Jul-21	2.60	66.40	150.80	520.20	746.40
	Jul-21 to Aug-21	4.00	41.50	84.00	191.30	218.40
	Aug-21 to Sep-21	2.50	17.40	30.40	68.80	87.30
DB - 67	Jun-21 to Jul-21	0.60	3.20	13.80	57.50	82.20
	Jul-21 to Aug-21	1.80	5.10	13.60	58.70	102.50
	Aug-21 to Sep-21	2.40	12.60	24.80	66.90	89.70
DB - 68	Jun-21 to Jul-21	1.70	27.60	137.10	731.40	936.60
	Jul-21 to Aug-21	1.87	8.20	21.80	63.70	82.20
	Aug-21 to Sep-21	2.50	12.00	29.80	105.10	153.80
DB - 69	Jun-21 to Jul-21	0.40	2.50	6.70	25.00	32.30
	Jul-21 to Aug-21	1.70	9.10	14.90	33.80	46.80
	Aug-21 to Sep-21	2.70	16.30	31.60	89.80	128.00
DB - 70	Jun-21 to Jul-21	0.70	4.70	28.90	151.90	212.90
	Jul-21 to Aug-21	1.90	2.50	25.10	56.40	77.30
	Aug-21 to Sep-21	2.70	13.50	30.00	97.00	137.70
DB - 71	Jun-21 to Jul-21	1.60	31.10	73.50	356.30	641.10
	Jul-21 to Aug-21	3.40	40.00	63.10	138.70	173.20
	Aug-21 to Sep-21	2.90	15.10	30.00	82.10	128.00
DB - 72	Jun-21 to Jul-21	5.60	184.00	262.80	688.40	966.40
	Jul-21 to Aug-21	3.40	47.40	64.60	160.40	220.80
	Aug-21 to Sep-21	3.60	11.00	18.10	38.60	52.10
DB - 73	Jun-21 to Jul-21	4.10	46.70	228.60	1007.20	1384.40
	Jul-21 to Aug-21	2.10	9.50	43.30	250.20	447.40
	Aug-21 to Sep-21	3.40	11.50	18.20	32.10	38.90
DB - 74	Jun-21 to Jul-21	0.50	2.50	12.30	111.90	188.30
	Jul-21 to Aug-21	4.00	184.80	190.10	222.80	247.50
	Aug-21 to Sep-21	3.50	10.90	17.40	36.00	42.70
DB - 75	Jun-21 to Jul-21	0.50	1.50	11.40	46.30	70.30
	Jul-21 to Aug-21	1.50	4.00	11.70	32.80	43.90
	Aug-21 to Sep-21	3.70	16.70	28.00	66.60	103.6
DB - 76	Jun-21 to Jul-21	5.40	83.90	95.00	122.70	136.80
	Jul-21 to Aug-21	1.50	2.20	21.30	74.90	103.90
	Aug-21 to Sep-21	4.00	15.50	32.50	76.50	86.90
DB - 77	Jun-21 to Jul-21	4.40	94.00	165.90	421.40	544.10
	Jul-21 to Aug-21	2.30	6.40	10.70	26.20	36.70
	Aug-21 to Sep-21	1.70	9.30	15.30	35.80	46.20
DB - 78	Jun-21 to Jul-21	3.60	89.80	124.10	280.10	412.00
	Jul-21 to Aug-21	2.40	6.90	13.90	58.10	135.70
	Aug-21 to Sep-21	1.80	6.90	12.50	35.00	44.80
DB - 79	Jun-21 to Jul-21	2.50	27.80	34.30	54.90	65.40

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		23

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
	Jul-21 to Aug-21	2.20	11.90	26.70	216.70	474.90
	Aug-21 to Sep-21	3.00	97.10	103.60	144.30	195.50
DB - 80	Jun-21 to Jul-21	1.90	10.80	17.00	33.20	40.00
	Jul-21 to Aug-21	2.30	12.10	21.50	64.40	117.40
	Aug-21 to Sep-21	2.70	17.70	26.10	52.40	64.10
DB - 81	Jun-21 to Jul-21	1.40	5.10	18.10	54.00	64.50
	Jul-21 to Aug-21	2.30	9.40	17.60	50.00	78.40
	Aug-21 to Sep-21	2.30	14.20	21.60	48.40	60.10
DB - 82	Jun-21 to Jul-21	2.00	16.70	26.50	56.20	66.70
	Jul-21 to Aug-21	2.40	6.90	14.90	35.30	39.60
	Aug-21 to Sep-21	1.80	7.30	17.40	45.50	49.20
DB - 83	Jun-21 to Jul-21	1.70	8.00	13.20	29.70	39.00
	Jul-21 to Aug-21	2.20	7.10	11.40	23.30	27.60
	Aug-21 to Sep-21	31.20	1.90	7.20	13.50	28.10
DB - 84	Jun-21 to Jul-21	1.70	8.10	21.90	78.20	98.50
	Jul-21 to Aug-21	1.60	2.70	11.80	99.20	188.00
	Aug-21 to Sep-21	2.30	8.70	17.10	79.40	140.40
DB - 85	Jun-21 to Jul-21	1.50	5.30	15.80	55.50	84.40
	Jul-21 to Aug-21	2.20	19.80	30.80	101.80	194.80
	Aug-21 to Sep-21	2.30	14.40	21.90	51.60	79.90
DB - 86	Jun-21 to Jul-21	5.80	52.30	82.00	156.20	175.30
	Jul-21 to Aug-21	1.60	6.40	15.70	93.00	176.20
	Aug-21 to Sep-21	2.60	16.20	25.60	53.40	79.30
DB - 87	Jun-21 to Jul-21	2.30	2.30	2.30	785.00	1254.00
	Jul-21 to Aug-21	3.60	33.40	66.90	393.30	851.30
	Aug-21 to Sep-21	3.30	20.80	45.80	98.20	110.50
DB - 88	Jun-21 to Jul-21	1.50	1.50	24.50	160.60	201.90
	Jul-21 to Aug-21	1.60	1.60	16.20	216.30	458.50
	Aug-21 to Sep-21	2.40	9.70	17.00	37.60	45.00
DB - 89	Jun-21 to Jul-21	1.60	3.90	15.20	92.40	146.70
	Jul-21 to Aug-21	1.20	5.30	9.80	27.60	41.80
	Aug-21 to Sep-21	2.90	19.50	40.00	162.20	283.60
DB - 90	Jun-21 to Jul-21	80.80	2.30	14.70	24.20	59.80
	Jul-21 to Aug-21	1.40	5.60	11.50	25.30	30.20
	Aug-21 to Sep-21	1.60	10.50	20.80	50.10	57.50
DB - 91	Jun-21 to Jul-21	1.40	2.50	13.80	48.00	100.00
	Jul-21 to Aug-21	1.80	14.10	31.10	121.90	190.90
	Aug-21 to Sep-21	1.80	13.20	25.60	100.50	168.30
DB - 92	Jun-21 to Jul-21	2.60	37.20	60.00	137.00	167.20
	Jul-21 to Aug-21	1.90	9.00	27.20	82.70	112.90
	Aug-21 to Sep-21	2.00	15.10	41.50	136.00	180.50

GBN-JV PM Data						
Locality Name	Month	PM 1	PM 2.5	PM 4	PM 10	TSP
SANS Limits					75	
DB - 93	Jun-21 to Jul-21	12.90	187.70	215.00	292.40	334.30
	Jul-21 to Aug-21	2.50	15.40	34.70	95.80	112.30
	Aug-21 to Sep-21	2.00	21.30	57.80	219.10	301.70
DB - 94	Jun-21 to Jul-21	2.10	15.30	36.10	169.70	322.50
	Jul-21 to Aug-21	10.00	62.80	103.00	168.50	185.10
	Aug-21 to Sep-21	3.00	34.20	81.10	225.40	277.80
DB - 95	Jun-21 to Jul-21	20.20	238.60	788.70	2424.00	2965.80
	Jul-21 to Aug-21	2.90	29.00	70.10	180.10	207.30
	Aug-21 to Sep-21	7.60	108.60	306.20	943.90	885.20
DB - 96	Jun-21 to Jul-21	5.60	74.60	90.00	145.20	180.30
	Jul-21 to Aug-21	4.70	23.00	59.10	166.00	191.90
	Aug-21 to Sep-21	7.40	36.10	58.90	99.90	111.60
DB - 97	Jun-21 to Jul-21	1.80	10.90	22.50	68.70	102.60
	Jul-21 to Aug-21	2.50	8.30	14.50	37.50	58.40
	Aug-21 to Sep-21	2.20	10.60	21.40	51.60	69.50
DB - 98	Jun-21 to Jul-21	1.50	7.20	17.20	48.20	63.60
	Jul-21 to Aug-21	2.30	9.80	15.10	36.60	49.60
	Aug-21 to Sep-21	2.20	14.70	22.90	50.60	69.10
DB - 99	Jun-21 to Jul-21	7.00	117.80	145.00	258.90	324.90
	Jul-21 to Aug-21	1.30	2.20	19.30	76.40	107.20
	Aug-21 to Sep-21	2.70	16.60	27.50	60.20	70.60
DB - 100	Jun-21 to Jul-21	2.20	10.10	18.60	46.70	57.80
	Jul-21 to Aug-21	1.70	14.10	25.50	76.70	121.70
	Aug-21 to Sep-21	1.5	9.2	19	41.1	55.3
Average		3.40	23.29	48.11	152.54	223.71

7.2.2. E-Sampler PM Monitoring

The following results are present for the August to September 2021 period related to stations:

- ES01 (School);
- ES02 (Eskom – Medupi Power Station); and
- ES03 (Mooivalei).

All three (3) E-sampler localities recorded general low daily PM₁₀ readings with some influences (peaks) noted:

- ES01 (School): The spikes which were recorded are likely as a result of traffic on the nearby dirt road, however greater spikes did occur on the 18th of August (at 0.29 mg/m³) and the 25th of August (at 0.43 mg/m³).
- ES02 (Eskom – Medupi Power Station): A significant spike was recorded on the 29th of August (at 0.78 mg/m³).
- ES03 (Mooivalei): Recorded concentrations measured during the month remained low with (below 0.1 mg/m³) with spikes occurring throughout the sampling period.

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		25

The low concentrations are expected due to the study being a baseline assessment, while dirt roads or construction works are also not present at the monitoring localities. Results are however expected to fluctuate during the year cycle due to the seasonality of precipitation and wind fluctuations.

Table 7: Daily Average PM₁₀

Locality Name:	PM10 Daily Average
ES01: School	0.036 mg/m ³
ES02: Eskom – Medupi Power Station	0.036 mg/m ³
ES03: Mooivalei	0.024 mg/m ³

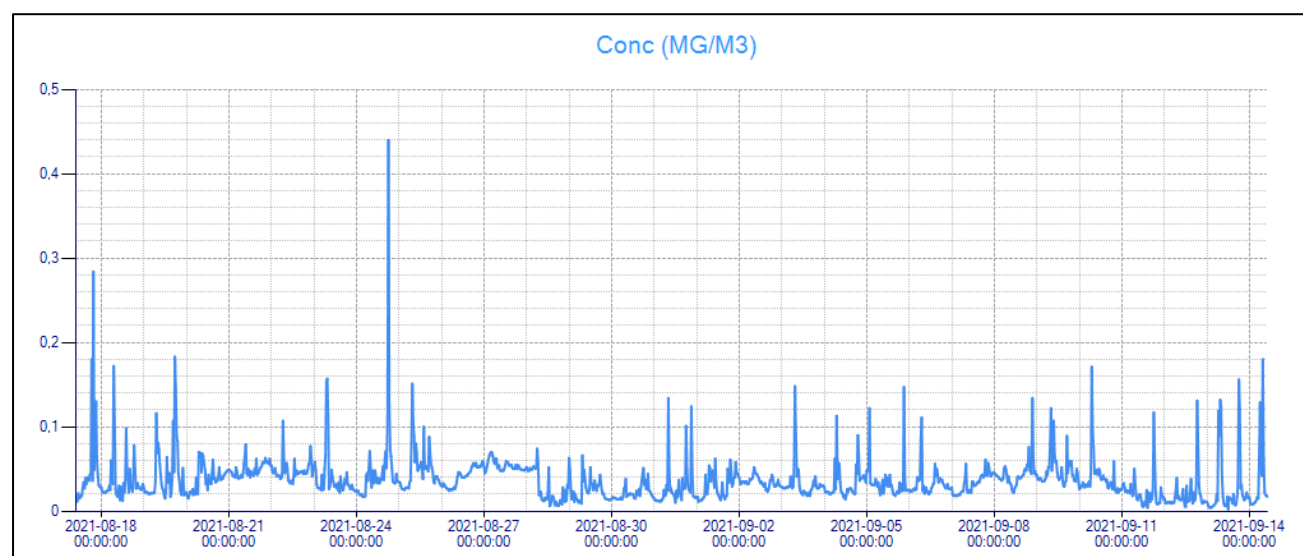


Figure 5: ES01 (School) E-Sampler PM₁₀ Data

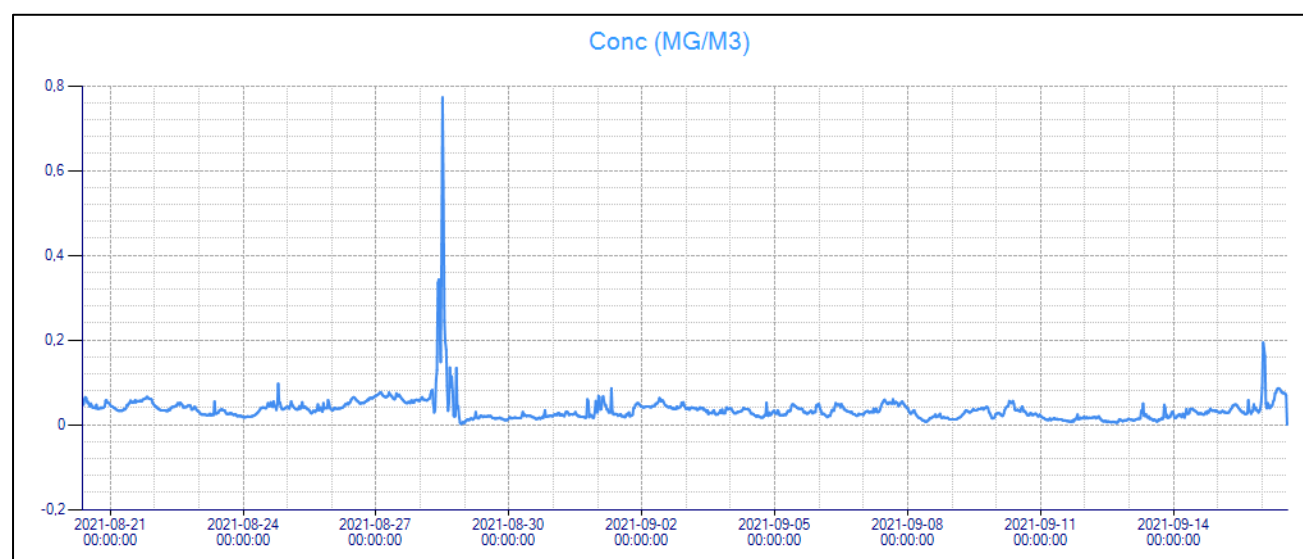


Figure 6: ES02 (Eskom – Medupi Power Station) E-Sampler PM₁₀ Data

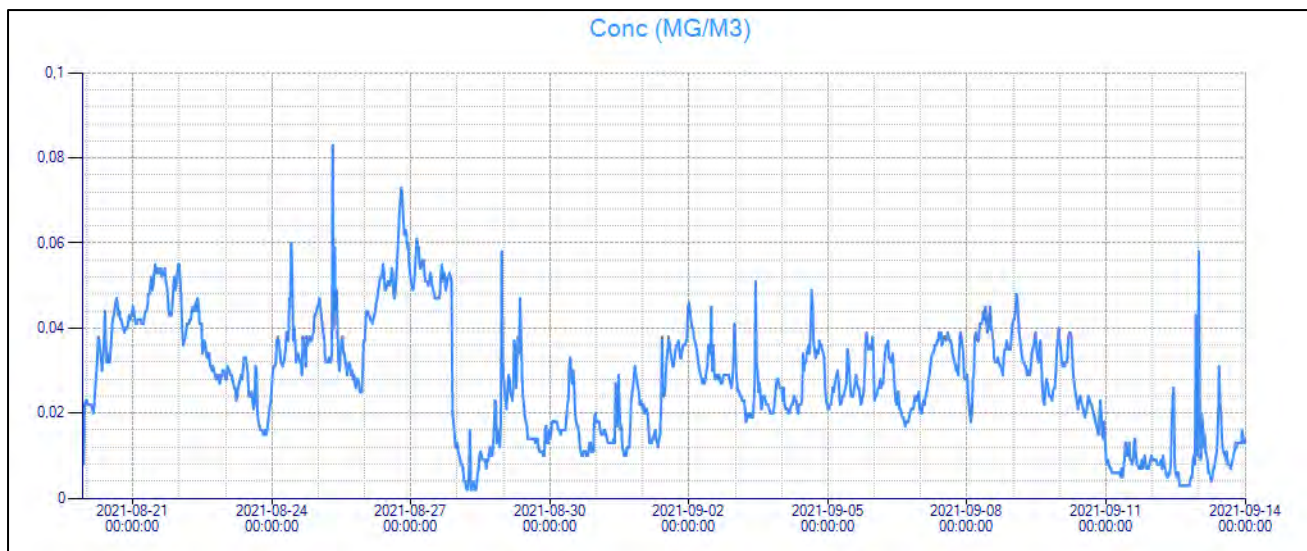


Figure 7: ES03 (Mooivalei) E-Sampler PM₁₀ Data

7.3. GRAVIMETRIC DUST FALLOUT RESULTS

Data was collected for the August 2021 monitoring period between the 14th and 16th September 2021. During the August to September 2021 monthly monitoring period, all one-hundred (100) samples were obtained from the dust monitoring programme. Based on the gravimetric dust fallout results, two (2) exceedances of Residential Limit exceedances of 600 mg/m²/day were recorded at sample localities DB86 and DB99, while the Industrial Limit of 1200 mg/m²/day was exceeded at DB04 and DB87 monitoring localities. The highest value was recorded at the DB87 monitoring point during the August to September 2021 monitoring period, calculated at 1797 mg/m²/day. The monthly Median was determined at 94 mg/m²/day, well below the residential limit. All sample localities which recorded exceedances during the monitoring period were situated near dirt roads, indicating that traffic is the primary cause of elevated dust fallout readings. No major activities were recorded at the proposed pipeline area, with minimal air pollution.

Gravimetrical dust fallout can be classified according to SANS 1929: 2011 standard into four categories or levels. The first category consists of monitoring stand values that are below 600 mg/m²/day and thus can be classified as Ideal namely:

- Ninety-six (96) of the sampled monitoring points fell into this category during the monitoring period.

The second category consists of monitoring points with gravimetric dust fallout between 600 mg/m²/day and 1200 mg/m²/day. This category can be classified as Acceptable to Tolerable.

- Two (2) of the monitoring points (DB86 and DB99) fell into this category during the monitoring period.

The third category consists of monitoring points with gravimetric dust fallout between 1200 mg/m²/day and 2400 mg/m²/day. This category can be classified as unacceptable and must be reported if it continues for more than two consecutive months or three months in total per year.

- Two (2) of the monitoring points (DB04 and DB87) fell into this category during the monitoring period.

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		27

The fourth category consists of monitoring points exceeding dust fallout of 2400 mg/m²/day. This category is classified as alert, immediate action and remediation required followed the first incident of dust fallout exceedance.

- None of the monitoring points fell into this category during the monitoring period.

Table 8: Gravimetric Dust Fallout Results

GBN-JV Air Quality Results						
Gravimetric Dust Fallout (mg/m ² /day)						
Location	Apr-21 to May-21	May-21 to Jun-21	Jun-21 to Jul-21	July-21 to Aug-21	Aug-21 to Sep-21	Average
DB - 1	21	5	86	147	187	89
DB - 2	170	297	543	404	503	383
DB - 3	27	126	190	212	427	196
DB - 4	75	137	Stolen	277	1360	462
DB - 5	127	107	365	165	195	192
DB - 6	41	137	200	231	288	180
DB - 7	134	98	198	218	279	185
DB - 8	61	10	135	113	189	102
DB - 9	91	9	140	216	184	128
DB - 10	46	126	128	219	193	142
DB - 11	Installed	161	55	295	215	181
DB - 12	Not Installed	Not Installed	Installed	90	242	166
DB - 13	Not Installed	Not Installed	Installed	487	376	431
DB - 14	Not Installed	Not Installed	Not Installed	Installed	143	143
DB - 15	6	277	47	171	138	128
DB - 16	10	281	27	168	123	122
DB - 17	11	88	15	150	153	83
DB - 18	39	331	61	96	106	127
DB - 19	5	273	22	59	52	82
DB - 20	14	290	99	119	65	117
DB - 21	12	305	103	121	108	130
DB - 22	14	155	104	113	94	96
DB - 23	2	300	106	109	106	125
DB - 24	11	392	149	172	175	180
DB - 25	7	476	95	124	125	165
DB - 26	4	324	33	183	113	131
DB - 27	14	457	107	128	75	156
DB - 28	18	301	29	113	119	116
DB - 29	4	337	6	95	95	107
DB - 30	92	338	36	105	127	139
DB - 31	13	488	88	82	76	149
DB - 32	244	335	165	206	243	239
DB - 33	10	479	103	96	125	163

DB - 34	13	18	3	79	169	56
DB - 35	11	7	39	49	82	38
DB - 36	2	18	28	61	98	41
DB - 37	8	8	12	52	74	31
DB - 38	8	104	26	54	83	55
DB - 39	5	92	19	96	75	57
DB - 40	3	18	17	43	18	20
DB - 41	3	101	11	34	100	50
DB - 42	10	248	13	65	53	78
DB - 43	9	91	13	58	66	47
DB - 44	7	98	13	39	63	44
DB - 45	14	86	4	59	78	48
DB - 46	7	238	18	60	48	74
DB - 47	6	245	21	62	48	76
DB - 48	15	240	4	55	63	75
DB - 49	3	277	10	75	69	87
DB - 50	1	80	20	96	112	62
DB - 51	1	268	16	98	74	91
DB - 52	42	111	23	94	11	56
DB - 53	11	289	24	108	88	104
DB - 54	13	78	52	74	61	55
DB - 55	8	247	6	98	23	76
DB - 56	8	282	30	141	83	109
DB - 57	6	258	95	84	30	95
DB - 58	3	309	70	161	79	124
DB - 59	1	15	114	89	148	73
DB - 60	6	19	113	122	46	61
DB - 61	5	244	185	82	53	114
DB - 62	10	73	2	33	48	33
DB - 63	4	269	9	31	70	77
DB - 64	11	158	4	50	78	60
DB - 65	13	98	13	147	102	75
DB - 66	168	237	9	179	84	135
DB - 67	14	267	14	167	62	105
DB - 68	10	267	23	128	55	97
DB - 69	6	295	33	170	73	115
DB - 70	85	159	76	230	76	125
DB - 71	13	294	13	166	51	107
DB - 72	13	195	39	155	27	86
DB - 73	48	261	17	135	36	99
DB - 74	3	285	56	132	33	102
DB - 75	39	16	104	172	72	80
DB - 76	16	216	87	163	37	104
DB - 77	39	192	123	197	109	132
DB - 78	13	191	26	155	71	91
DB - 79	133	141	11	138	70	99

DB - 80	279	186	250	426	204	269
DB - 81	42	279	100	199	143	153
DB - 82	12	184	43	210	172	124
DB - 83	46	344	48	113	89	128
DB - 84	2	148	73	120	63	81
DB - 85	15	417	78	86	57	131
DB - 86	886	704	883	1141	747	872
DB - 87	2167	1921	1472	1783	1797	1828
DB - 88	969	262	71	241	379	384
DB - 89	119	183	102	296	255	191
DB - 90	40	81	5	37	51	43
DB - 91	78	265	85	99	233	152
DB - 92	315	272	438	107	131	252
DB - 93	45	322	6	90	106	114
DB - 94	48	158	23	79	97	81
DB - 95	142	1057	370	681	531	556
DB - 96	Installed	114	54	192	158	-
DB - 97	47	166	155	313	246	185
DB - 98	34	7	15	101	74	46
DB - 99	1085	1336	1059	1341	832	1131
DB - 100	138	257	49	101	64	122
3 Month Average	92	169	149	179	153	Total Average for all
Residential Limit	600	600	600	600	600	points for 12 months:
Industrial Limit	1200	1200	1200	1200	1200	162
1 Month Median	13	238	48	120	94	Industrial Limit Exceedances:
Max	2167	1921	1472	1783	1797	
Min	1	5	2	31	11	

Legend	
No Sample	-
Residentially acceptable	
Acceptable for Industrial use	
Industrial Exceedance	
Unacceptable/ Warning	

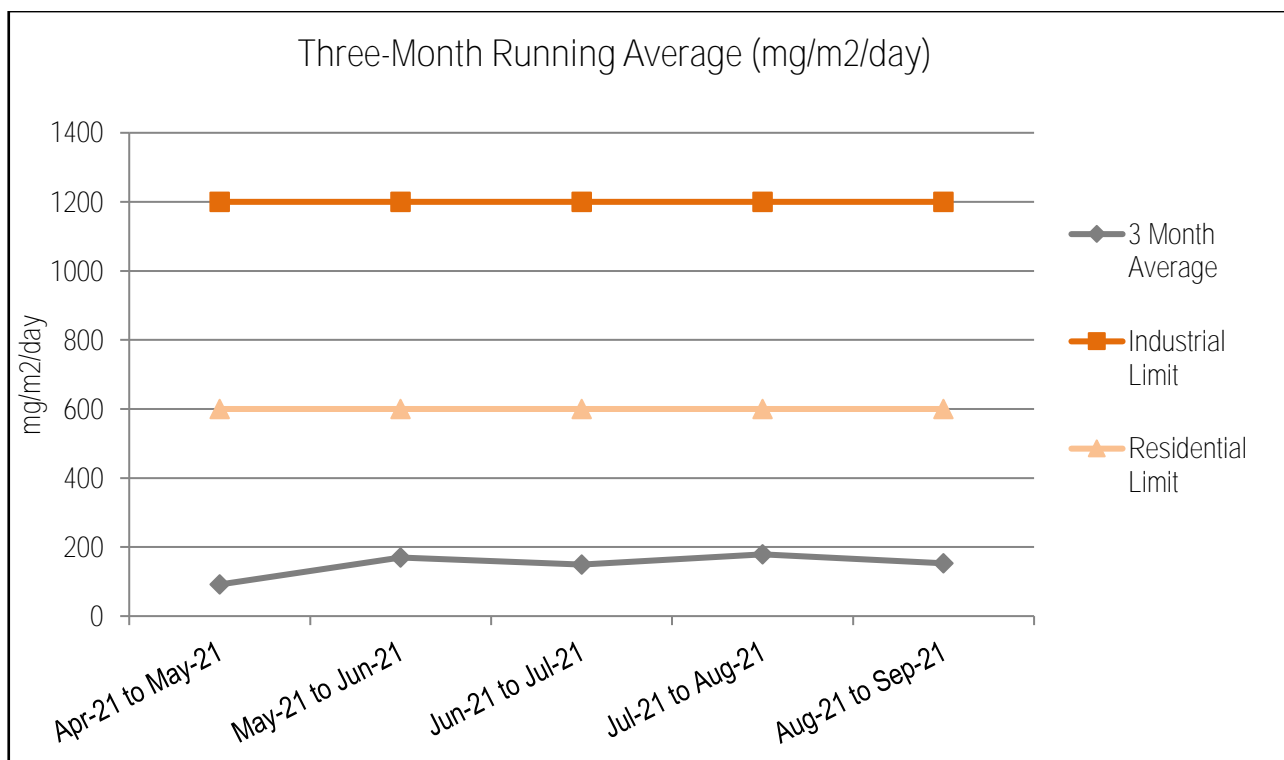


Figure 8: Dust Fallout Three-Month Running Average across all monitoring localities

7.4. WEATHER DATA

The possibility of emissions becoming a nuisance is determined by various factors. Specifically, PM_{10} (dust) is mostly transported by air movement and as such wind and wind intensity can help determine the effective range of travel of pollutants. To determine possible areas that could be affected the wind rose data must be studied and interpreted. The following section provides an interpretation of the areas that could possibly be affected, by assessing the direction the wind is coming from and the areas the wind would deposit transported dust as reasonably expected.

The following graphs provides an insight into the wind conditions versus the areas which would be affected during the current monitoring period. From Table 9 & 10 and Figure 10 & 11, the dominant wind direction was from the North and to a lesser extent from the north-north-east. Moreover, average wind speeds presented a light air to gentle breeze (0.6 – 3.7 m/s) during the monitoring period. A total of 28.8mm rain was recorded during the monitoring period.

Table 9: Wind Direction

Wind Direction: August to September 2021	
Direction	Direction Frequency
North	42
NNE	29
NE	20
ENE	12
East	13
ESE	3
SE	5
SSE	1
South	5
SSW	6
SW	9
WSW	8
West	9
WNW	6
NW	5
NNW	11

Table 10: Average Wind Speeds

Average Wind Speeds: August to September 2021	
Day of Month	Wind Speed (m/s)
19	1.1
20	2.3
21	2.3
22	2.5
23	2.4
24	1.9
25	1.8
26	1.6
27	2.6
28	3.7
29	2.5
30	1.3
31	0.6
1	1.1
2	2.3
3	1.6
4	1.4
5	1.4
6	1.9
7	1.8
8	1.8
9	1.3
10	1.9
11	0.9
12	0.8
13	0.8
14	1.1
15	1.8
16	3.5
Max	3.7
Min	0.6

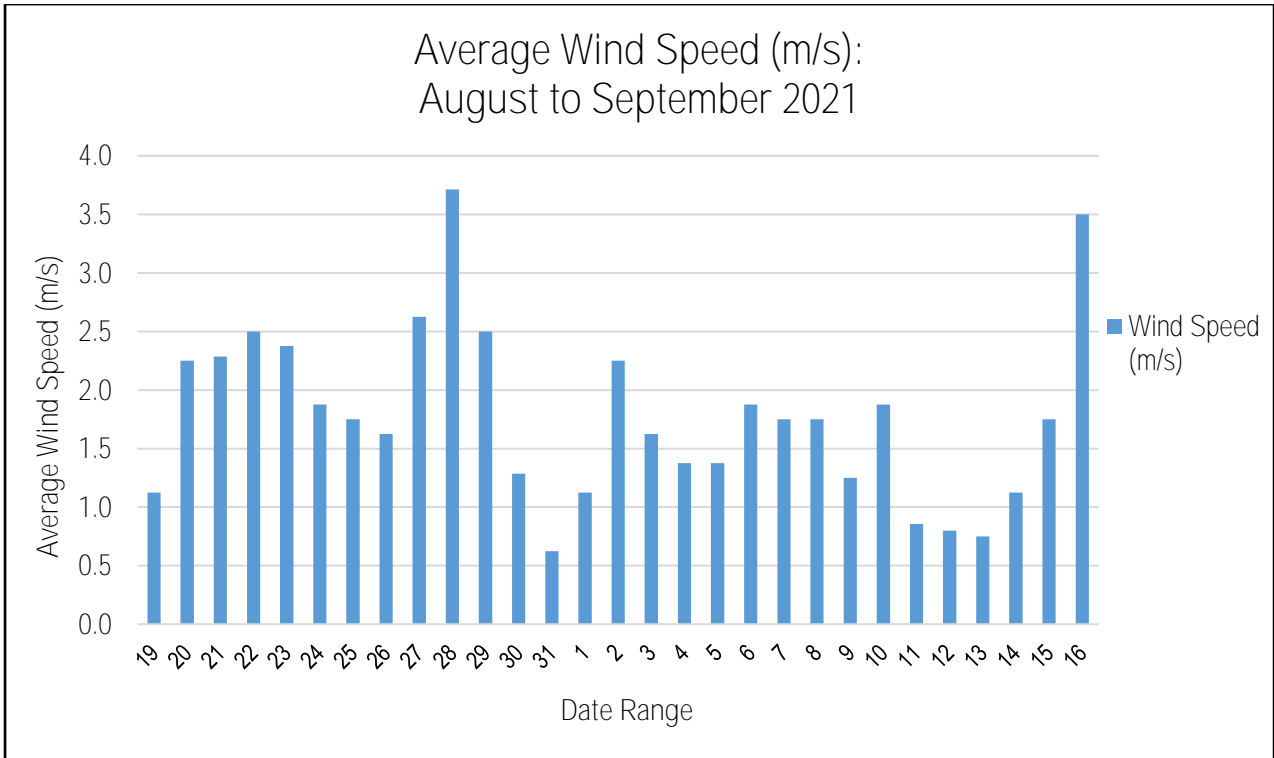


Figure 9: Wind Direction Frequency Average

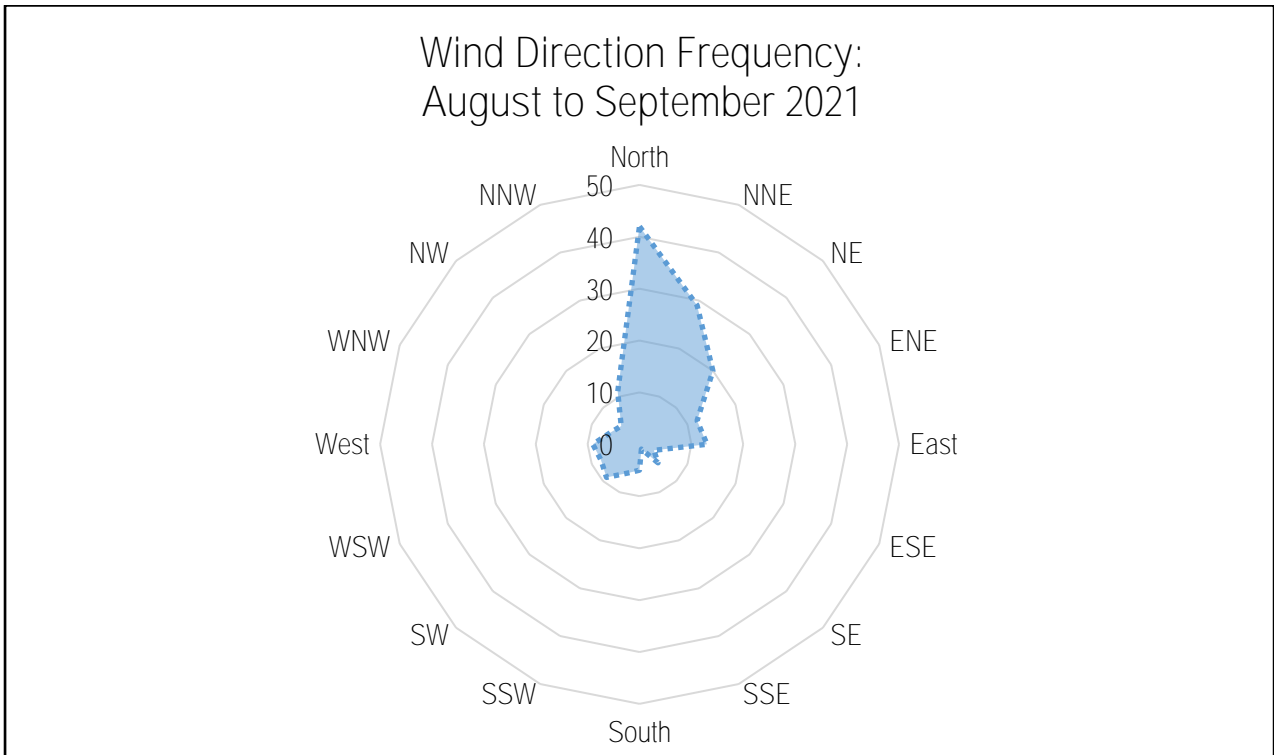


Figure 10: Windrose Diagram

Table 11: Beaufort Wind Force Scale

Beaufort Wind Force Scale			
Number	Wind speed (m/s)	Description	Land Conditions
0	<0.3 m/s	Calm	Calm. Smoke rises vertically
1	0.3–1.5 m/s	Light air	Wind motion visible in smoke.
2	1.6–3.3 m/s	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	3.4–5.5 m/s	Gentle breeze	Leaves and smaller twigs in constant motion.
4	5.5–7.9 m/s	Moderate breeze	Dust and loose paper raised. Small branches begin to move.
5	8.0–10.7 m/s	Fresh breeze	Branches of a moderate size move. Small trees begin to sway.
6	10.8–13.8 m/s	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
7	13.9–17.1 m/s	High wind, moderate gale, near gale	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially by people on upper floors.
8	17.2–20.7 m/s	Fresh gale	Twigs broken from trees. Cars veer on road.
9	20.8–24.4 m/s	Strong gale	Larger branches break off trees, and some small trees blow over. Construction/temporary signs and barricades blow over. Damage to circus tents and canopies.
10	24.5–28.4 m/s	Whole gale, storm	Trees are broken off or uprooted, saplings bent and deformed, poorly attached asphalt shingles and shingles in poor condition peel off roofs.
11	28.5–32.6 m/s	Violent storm	Widespread vegetation damage. More damage to most roofing surfaces, asphalt tiles that have curled up and/or fractured due to age may break away completely.
12	≥32.7 m/s	Hurricane force	Considerable and widespread damage to vegetation, a few windows broken, structural damage to mobile homes and poorly constructed sheds and barns. Debris may be hurled about.

Table 12: Rainfall

Rainfall Summary: August to September 2021	
Day of Month	Rainfall (mm)
19 – Aug	1.4
20 – Aug	2.0
21 – Aug	0.0
22 – Aug	0.0
23 – Aug	0.0
24 – Aug	0.0
25 – Aug	2.0
26 – Aug	4.0
27 – Aug	0.0
28 – Aug	0.0
29 – Aug	0.0
30 – Aug	1.0
31 – Aug	2.6
1 – Sep	1.2
2 – Sep	0.0
3 – Sep	0.0
4 – Sep	0.0
5 – Sep	0.0
6 – Sep	0.8
7 – Sep	2.4
8 – Sep	1.2
9 – Sep	0.0
10 – Sep	1.0
11 – Sep	1.2
12 – Sep	0.0
13 – Sep	0.4
14 – Sep	2.4
15 – Sep	3.2
16 – Sep	2.0
Total	28.8

*Rainfall was not recorded on the omitted days

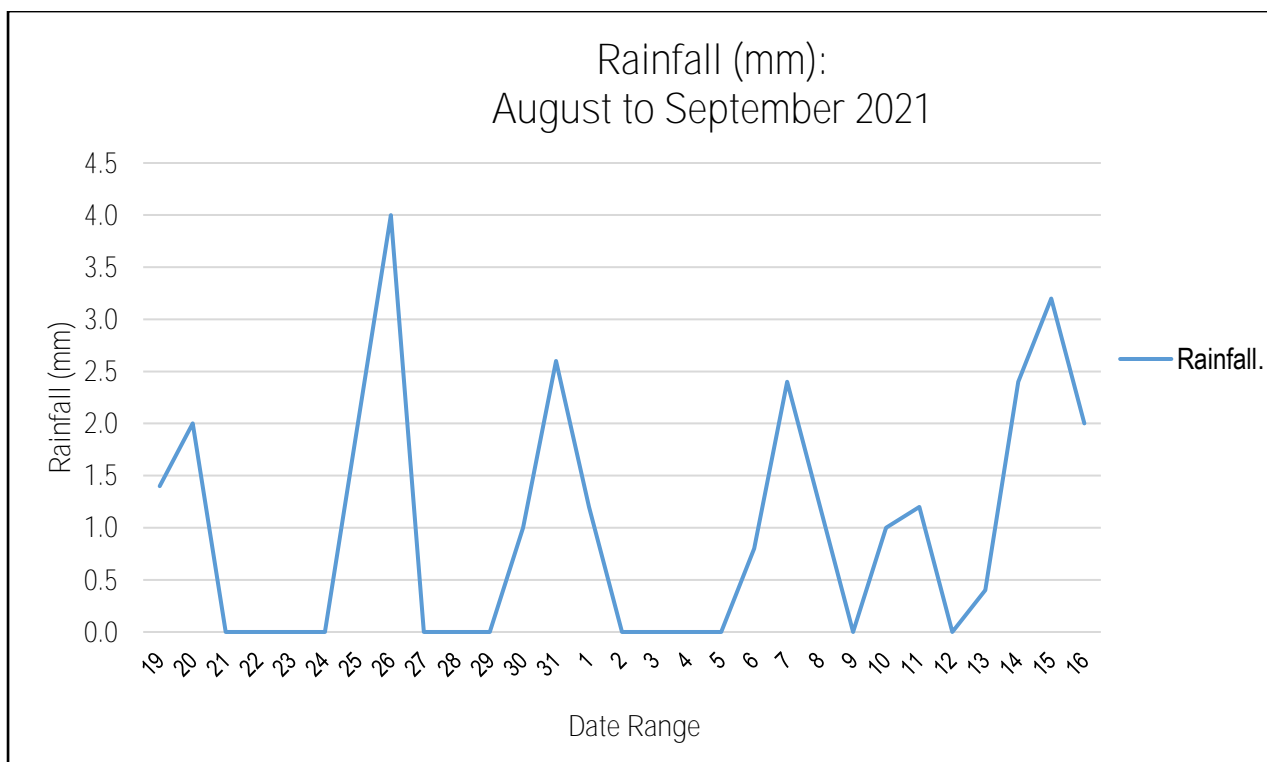


Figure 11: Rainfall for monitoring period

8. CONCLUSION AND ASPECTS TO CONSIDER

The air quality measured in the proposed area is considered in general fair condition as per the results obtained, while it should be noted that currently operations are not present and the levels representative of the non-disturbed ambient air quality conditions.

It is assumed that the construction phase of the planned pipeline will contribute to the total suspended load in the atmosphere, although off-site impacts are not expected, and the impact is anticipated to be largely localised and centralised within the construction area. From the current sampling data obtained, exceedances are expected during the construction phase. In order to ensure and prevent this possible outcome, mitigation measures are provided in this report to enable the proposed developer to minimise the impact as stated in the CEMPr.

9. PROPOSED MITIGATION AND POLLUTION PREVENTION MEASURES DURING FUTURE CONSTRUCTION

Aspect: Stakeholder Communication	
1	Implement a programme of stakeholder communication that includes community engagement before and during work undertaken on site.
2	Provide complaints register on site where complaints can be made. This register should enable effective communication of complaints where these are reasonably addressed.
3	Clearly display the contact details of the environmental site office and manager at the construction camps.
Aspect: Dust Management	
4	In instances where exceedances are recorded, the implementation and maintenance of a Dust and Emission Management Plan which provides clear details on preventing, maintaining and improving the air quality in terms of site-specific activities is recommended.
Aspect: Site Management	
5	All complaints should be logged in the complaints register and should be available on the site at all times. All complaints regarding air quality should be adequately investigated and actions taken to reduce the impact in a timely manner should it be required.
6	Note must be taken of incidents that cause air emissions and this must be recorded to ensure that these are resolved and prevented from reoccurring.
Aspect: Monitoring	
7	Weekly site inspections should be undertaken in the vicinity of sensitive receptors. Records should be kept of these routine inspections.
8	Should activities be undertaken during dry and windy conditions, special focus must be taken on the impact and results of the conditions to ensure that minimal impact is occurring.
Aspect: Preparing and maintaining the site	

9	Plan the site layout in such a manner as to ensure that emission generating activities occur as far as possible from sensitive receptors.
10	Should the conditions require it, erect screens and barriers around the sensitive receptors.
11	Ensure that all areas, fencing, barriers and scaffolding is kept clear of debris and dust.
12	Remove any accumulating matter that could serve as emission generator from the site as soon as possible.
Aspect: Operating vehicle/machinery and sustainable travel	
13	Ensure that all vehicles are maintained in good working condition and that they are serviced on regular intervals.
14	Ensure that all vehicles are switched off when stationary – no vehicles should be idling for extended period.
15	Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment as much as reasonably possible.
16	Impose and regulate a speed limit.
Aspect: Operations	
17	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
18	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible.
19	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	
20	Only use registered waste carriers to take waste off-site.
Measures specific to earthworks	
21	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in a small area during work and not all at once.
Aspect: Measures specific to construction	
22	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
23	Ensure cement and other fine powder materials are delivered in enclosed tankers and stored in appropriate storage with suitable emission control systems to prevent escape of material and overfilling during delivery.
24	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
Aspect: Measures specific to track-out	
25	Use water-assisted dust sweeper(s) on the access roads (where practical) to remove, as soon as practicable any material tracked out of the site.
26	Avoid dry sweeping of large areas.

27	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
28	Record all inspections of haul routes and any subsequent action in a site log book.
29	Install hard surfaced routes (compaction), which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
30	Inspect surfaced routes for integrity and instigate necessary repairs to the surface as soon as practicable.


Aspects	Management action or objective	Responsible Person(s)	Timeframe
Removal of Vegetation	<ul style="list-style-type: none"> Spray areas to be cleared with water. Ensure minimum travel distance between working areas and stockpiles. Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation. Ensure graded areas are sprayed with water. Minimise the amount of graded areas. Ensure that shortest routes are used for material transport. Load and offload material, as far as possible, downwind of stockpiles. Actively monitor dust fallout generated on the borders of the site. Implement monthly site inspection to check for possible areas of dust generation not addressed or not effectively managed. 	Environmental Site Officer Contractors & Sub-Contractor Safety and Environmental Officers	Duration of the construction phase
Land clearing			
Excavation			
Material Transport			
Material Handling			
Construction			

10. REFERENCES

- ASTM Standard (1739-98). 2004 (Reapproved 2017). Standard Test Method for Collection and Measurement of Dustfall (Settleable Particulate Matter). United States.
- GNR 827. 2013. National Environmental Management: Air Quality Act, Act No. 39 of 2004. Government Gazette 36974.
- South African National Standards (SANS) 1929. 2011. Ambient Air Quality- Limits for Common Pollutants. Ed. 2. ISBN 978-0-626-26919-7. South Africa.

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		40

APPENDIX A – EQUIPMENT CHECKLIST

Description	Serial No.	Quantity	Date Checked	Checked By
COVID-19				
Gloves		1 x Box	14-Sep-21	DN
Disinfectant		1 x 2 Liter Bottle	14-Sep-21	DN
Covid-19 Mask		1 x Person	14-Sep-21	DN
DOCUMENTS				
Project specific sampling field form		1	14-Sep-21	DN
Project specific Laboratory Analysis Request Form and Chain or Custody Form		1	14-Sep-21	DN
Project Specific monitoring localities and co-ordinates		1	14-Sep-21	DN
SAMPLING EQUIPMENT				
Sampling Containers				
5 Litre Dust Bucket		100	14-Sep-21	DN
Signatures:				
				

YANKA LABORATORIES

10000 YANKALABORATORIES 10000 TEL: 011 800 0000000000

SAMPLE CONDITION REPORT

CLIENT: Envasa GBA-M MONTHLY DUST

EO:

JOBNO:W18/

ATTENTION: Damon, Anton and Carl

Adv Rate

DATE RECEIVED: 2/09/21

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLES	IL CHEMISTRY SAMPLE	SOIL MICROBIOLOGY SAMPLE	DOO & QDO	COMMENTS
SpEnvasa 1	DB 31	11:45				28 Days
SpEnvasa 2	DB 32	11:47				
SpEnvasa 3	DB 33	11:48				
SpEnvasa 4	DB 34	11:52				
SpEnvasa 5	DB 35	11:50				
SpEnvasa 6	DB 36	11:24				
SpEnvasa 7	DB 37	11:24				
SpEnvasa 8	DB 38	11:21				
SpEnvasa 9	DB 39	11:49				
SpEnvasa 10	DB 40	11:16				
SpEnvasa 11	DB 41	11:15				
SpEnvasa 12	DB 42	11:11				
SpEnvasa 13	DB 43	11:08				
SpEnvasa 14	DB 44	10:46				
SpEnvasa 15	DB 45	10:43				
SpEnvasa 16	DB 46	09:37				
SpEnvasa 17	DB 47	09:35				
SpEnvasa 18	DB 48	09:33				
SpEnvasa 19	DB 49	09:29				
SpEnvasa 20	DB 50	09:24				
SpEnvasa 21	DB 51	09:23				
SpEnvasa 22	DB 52	09:21				
SpEnvasa 23	DB 53	09:19				
SpEnvasa 24	DB 54	09:17				
SpEnvasa 25	DB 55	09:15				
SpEnvasa 26	DB 56	09:13				
SpEnvasa 27	DB 57	09:10				
SpEnvasa 28	DB 58	06:30				
SpEnvasa 29	DB 59	06:36				
SpEnvasa 30	DB 60	06:40				
TOTAL SAMPLES						

Analysis Required : Domestic : General :

Seepage :

MB

Selected:

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PAGE 1 OF 1

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August 2021



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Author: D Nell

43

YANKA LABORATORIES

PO BOX 11 HEMLOCK ROAD HEMLOCK BC V2Y 6G2 604 263 7222 FAX 604 263 7271

SAMPLE CONDITION REPORT

CLIENT: Envass GBN-JV MONTHLY DUST
ATTENTION: Damon, Anton and Carl

EO:

JOHN WILM

Adv. Risk

DATE RECEIVED: 21/09/21

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLED	IL CHEMISTRY SAMPLE	500ML MICROBIOLOGY SAMPLE	ISO	ISO & COO	COMMENTS
SpEnvass 1	DB 61	06:47					} 28 Days
SpEnvass 2	DB 62	06:49					
SpEnvass 3	DB 63	06:53					
SpEnvass 4	DB 64	06:58					
SpEnvass 5	DB 65	07:01					
SpEnvass 6	DB 66	07:05					
SpEnvass 7	DB 67	07:09					
SpEnvass 8	DB 68	07:12					
SpEnvass 9	DB 69	07:15					
SpEnvass 10	DB 70	07:18					
SpEnvass 11	DB 71	07:21					
SpEnvass 12	DB 72	07:26					
SpEnvass 13	DB 73	07:30					
SpEnvass 14	DB 74	07:33					
SpEnvass 15	DB 75	07:34					
SpEnvass 16	DB 76	07:37					
SpEnvass 17	DB 77	13:27					
SpEnvass 18	DB 78	13:24					
SpEnvass 19	DB 79	13:12					
SpEnvass 20	DB 80	13:14					
SpEnvass 21	DB 81	13:21					
SpEnvass 22	DB 82	13:50					
SpEnvass 23	DB 83	13:36					
SpEnvass 24	DB 84	13:16					
SpEnvass 25	DB 85	13:08					
SpEnvass 26	DB 86	13:36					
SpEnvass 27	DB 87	13:47					
SpEnvass 28	DB 88	10:24					
SpEnvass 29	DB 89	10:01					
SpEnvass 30	DB 90	08:54					
TOTAL SAMPLES							

Analysis Required : Domestic / General :

Sevaage :

MB

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PAGE 1 OF 1

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44

PHONE: 1-800-833-6363 • FAX: 1-800-833-6363 • WWW: www.800-833-6363.com

CLIENT: Embassy GBF-JV MONTHLY DUST
ATTENTION: Damon, Arlon and Carl

60

0000-0001-9000-0000

Abstract

DATE RECEIVED: 2/09/21

Analysis Required : Diagnostic : General :[illegible]

140

Bibliography:

Abstract

DELIVERED BY: *Enel*

1000-0000/01/0000-0000\$10.00/0

GBN-JV 2A-C-8.9 Air Monitoring				
No	Sample ID	Sample Date	Sample Time	Comment
1	DB01	16-Sep-21	08:45	P ₁ = 7.2 P ₂ = 28.4 P ₃ = 47.6 P ₄ = 88.0 TSP = 104.6
2	DB02	16-Sep-21	08:49	P ₁ = 7.1 P ₂ = 29.7 P ₃ = 51.1 P ₄ = 87.6 TSP = 99.3
3	DB03	15-Sep-21	14:10	P ₁ = 2.1 P ₂ = 5.1 P ₃ = 15.3 P ₄ = 19.5 TSP = 201.5
4	DB04	15-Sep-21	14:05	P ₁ = 2.4 P ₂ = 9.7 P ₃ = 15.3 P ₄ = 33.3 TSP = 40.7
5	DB05	15-Sep-21	14:00	P ₁ = 3.1 P ₂ = 19 P ₃ = 43 P ₄ = 108.8 TSP = 129.8
6	DB06	15-Sep-21	13:35	P ₁ = 2.2 P ₂ = 7.4 P ₃ = 13.3 P ₄ = 41.9 TSP = 67.2
7	DB07	15-Sep-21	15:53	P ₁ = 2.3 P ₂ = 14.6 P ₃ = 18.7 P ₄ = 34.5 TSP = 43.8
8	DB08	15-Sep-21	13:47	P ₁ = 2.3 P ₂ = 11.7 P ₃ = 19.5 P ₄ = 68.3 TSP = 96.3
9	DB09	16-Sep-21	10:19	P ₁ = 7.9 P ₂ = 34.3 P ₃ = 82.4 P ₄ = 210.3 TSP = 261.9
10	DB10	16-Sep-21	10:26	P ₁ = 8.2 P ₂ = 42.2 P ₃ = 91.8 P ₄ = 246.4 TSP = 238.3
11	DB11	16-Sep-21	09:49	P ₁ = 7.8 P ₂ = 29.5 P ₃ = 58.9 P ₄ = 149.8 TSP = 200.9
12	DB12	16-Sep-21	08:11	P ₁ = 3.5 7.3 P ₂ = 11.7 51.7 P ₃ = 87.8 TSP = 109.9
13	DB13	16-Sep-21	06:28	P ₁ = 3.0 P ₂ = 98.0 P ₃ = 176.7 P ₄ = 438.3 TSP = 516
14	DB14	16-Sep-21	08:22	P ₁ = 7.3 P ₂ = 28.6 P ₃ = 47.5 P ₄ = 79.2 TSP = 95.9
15	DB15	15-Sep-21	13:20	P ₁ = 2.2 P ₂ = 7.3 P ₃ = 12.0 P ₄ = 27.6 TSP = 31.3
16	DB16	15-Sep-21	13:14	P ₁ = 2.2 P ₂ = 7.8 P ₃ = 13.7 P ₄ = 32 TSP = 42.5
17	DB17	15-Sep-21	13:07	P ₁ = 2.3 P ₂ = 7.3 P ₃ = 12.2 P ₄ = 24.7 TSP = 30.2
18	DB18	15-Sep-21	12:33	P ₁ = 2.4 P ₂ = 10.2 P ₃ = 19.2 P ₄ = 62.5 TSP = 81
19	DB19	15-Sep-21	12:29	P ₁ = 2.4 P ₂ = 7.3 P ₃ = 13.4 P ₄ = 34.8 TSP = 58.8
20	DB20	15-Sep-21	13:24	P ₁ = 2.7 P ₂ = 8.6 P ₃ = 15.6 P ₄ = 46.1 TSP = 58.9
21	DB21	15-Sep-21	12:21	P ₁ = 2.8 P ₂ = 9.9 P ₃ = 17.7 P ₄ = 48.3 TSP = 53.9
22	DB22	15-Sep-21	12:18	P ₁ = 3.0 P ₂ = 16.5 P ₃ = 26.2 P ₄ = 71.4 TSP = 109
23	DB23	15-Sep-21	12:14	P ₁ = 3.0 P ₂ = 10.7 P ₃ = 22.7 P ₄ = 92.8 TSP = 148.9
24	DB24	15-Sep-21	12:09	P ₁ = 2.9 P ₂ = 5.8 P ₃ = 35.7 P ₄ = 125.6 TSP = 187.9
25	DB25	15-Sep-21	12:07	P ₁ = 3.0 P ₂ = 9.9 P ₃ = 33.6 P ₄ = 115.6 TSP = 143.3
26	DB26	15-Sep-21	12:02	P ₁ = 3.2 P ₂ = 9.5 P ₃ = 48.6 P ₄ = 153.5 TSP = 175.3
27	DB27	15-Sep-21	11:59	P ₁ = 3.0 P ₂ = 10.4 P ₃ = 25.3 P ₄ = 76.2 TSP = 88.6
28	DB28	15-Sep-21	11:54	P ₁ = 2.9 P ₂ = 9.0 P ₃ = 21.6 P ₄ = 61.9 TSP = 71.4
29	DB29	15-Sep-21	11:51	P ₁ = 3.2 P ₂ = 9.9 P ₃ = 23.8 P ₄ = 75.7 TSP = 94.8
30	DB30	15-Sep-21	11:47	P ₁ = 3.2 P ₂ = 13.2 P ₃ = 28.5 P ₄ = 79.8 TSP = 102.6
31	DB31	15-Sep-21	11:43	P ₁ = 11.3 3.3 P ₂ = 28.7 25.7 P ₃ = 25.7 P ₄ = 75.3 TSP = 91.9
32	DB32	15-Sep-21	11:39	P ₁ = 3.1 P ₂ = 11.6 P ₃ = 22.5 P ₄ = 61.9 TSP = 78.5
33	DB33	15-Sep-21	11:35	P ₁ = 3.1 P ₂ = 10.6 P ₃ = 22.8 P ₄ = 60.2 TSP = 74.4
34	DB34	15-Sep-21	11:32	P ₁ = 3.3 P ₂ = 8.1 P ₃ = 23.6 P ₄ = 58.4 TSP = 83.1
35	DB35	15-Sep-21	11:30	P ₁ = 3.8 P ₂ = 16.3 P ₃ = 27.7 P ₄ = 71.7 TSP = 92.2
36	DB36	15-Sep-21	11:26	P ₁ = 3.4 P ₂ = 12.2 P ₃ = 24.5 P ₄ = 69 TSP = 97.3
37	DB37	15-Sep-21	11:24	P ₁ = 3.4 P ₂ = 9.9 P ₃ = 19.5 P ₄ = 49.5 TSP = 67.4
38	DB38	15-Sep-21	11:21	P ₁ = 3.4 P ₂ = 10.6 P ₃ = 20.4 P ₄ = 53.2 TSP = 69.2
39	DB39	15-Sep-21	11:19	P ₁ = 3.3 P ₂ = 10.9 P ₃ = 23.1 P ₄ = 68.2 TSP = 89.7
40	DB40	15-Sep-21	11:16	P ₁ = 3.8 P ₂ = 13.6 P ₃ = 20.7 P ₄ = 69.9 TSP = 95.8
41	DB41	15-Sep-21	11:13	P ₁ = 4.1 P ₂ = 17.5 P ₃ = 28.8 P ₄ = 79.5 TSP = 110.8
42	DB42	15-Sep-21	11:11	P ₁ = 3.6 P ₂ = 11.8 P ₃ = 20.8 P ₄ = 66 TSP = 68.8
43	DB43	15-Sep-21	11:08	P ₁ = 4.4 P ₂ = 22.1 P ₃ = 33 P ₄ = 60.7 TSP = 68.1

44	D844	15-Sep-21	10:46	P ₁ =3.5 P ₂ =9.9 P ₃ =17.7 P ₄ =46.9 TSP=53.6
45	D845	15-Sep-21	10:43	P ₁ =3.5 P ₂ =12.1 P ₃ =19.9 P ₄ =43.9 TSP=50
46	D846	15-Sep-21	09:57	P ₁ =3.5 P ₂ =11.5 P ₃ =20 P ₄ =45.9 TSP=54
47	D847	15-Sep-21	09:55	P ₁ =3.5 P ₂ =10.9 P ₃ =19.3 P ₄ =48.4 TSP=60.7
48	D848	15-Sep-21	09:33	P ₁ =3.5 P ₂ =10.3 P ₃ =17.8 P ₄ =42.2 TSP=52.1
49	D849	15-Sep-21	09:29	P ₁ =3.5 P ₂ =11.7 P ₃ =19.8 P ₄ =46.1 TSP=56.6
50	D850	15-Sep-21	09:26	P ₁ =3.4 P ₂ =12.0 P ₃ =19.5 P ₄ =44.1 TSP=52.7
51	D851	15-Sep-21	09:23	P ₁ =3.3 P ₂ =10.6 P ₃ =19.1 P ₄ =48.7 TSP=69.0
52	D852	15-Sep-21	09:21	P ₁ =3.5 P ₂ =10.5 P ₃ =19.6 P ₄ =46.6 TSP=73.8
53	D853	15-Sep-21	09:19	P ₁ =3.5 P ₂ =10.6 P ₃ =17.9 P ₄ =44 TSP=57.3
54	D854	15-Sep-21	09:17	P ₁ =3.4 P ₂ =10.4 P ₃ =17.7 P ₄ =48.9 TSP=50.8
55	D855	15-Sep-21	09:15	P ₁ =3.4 P ₂ =12 P ₃ =19.6 P ₄ =46.9 TSP=57.3
56	D856	15-Sep-21	09:13	P ₁ =3.5 P ₂ =11.7 P ₃ =18.4 P ₄ =35.3 TSP=41.9
57	D857	15-Sep-21	09:10	P ₁ =3.5 P ₂ =10.8 P ₃ =17.5 P ₄ =35.5 TSP=46.6
58	D858	15-Sep-21	06:30	P ₁ =3.2 P ₂ =10.1 P ₃ =78.5 P ₄ =24.16 TSP=327.9
59	D859	15-Sep-21	06:36	P ₁ =3.5 P ₂ =52.9 P ₃ =197.7 P ₄ = 35.5 TSP=476.3
60	D860	15-Sep-21	06:40	P ₁ =2.4 P ₂ =12.7 P ₃ =37.6 P ₄ =361 TSP=704.5
61	D861	15-Sep-21	06:47	P ₁ =2.3 P ₂ =10.8 P ₃ =29 P ₄ =90.8 TSP=124.1
62	D862	15-Sep-21	06:49	P ₁ =2.5 P ₂ =13.7 P ₃ =23 P ₄ =93.7 TSP=154.7
63	D863	15-Sep-21	06:53	P ₁ =2.4 P ₂ =10.5 P ₃ =23.6 P ₄ =92.4 TSP=163.3
64	D864	15-Sep-21	06:58	P ₁ =2.1 P ₂ =10.6 P ₃ =18.1 P ₄ =59.1 TSP=86.2
65	D865	15-Sep-21	07:01	P ₁ =2.2 P ₂ =10.5 P ₃ =18.6 P ₄ =44.3 TSP=62.1
66	D866	15-Sep-21	07:05	P ₁ =2.5 P ₂ =17.4 P ₃ =30.4 P ₄ =68.8 TSP=87.3
67	D867	15-Sep-21	07:09	P ₁ =2.4 P ₂ =12.6 P ₃ =24.8 P ₄ =41.9 TSP=89.7
68	D868	15-Sep-21	07:12	P ₁ =2.5 P ₂ =12.0 P ₃ =29.2 P ₄ =105.1 TSP=153.8
69	D869	15-Sep-21	07:15	P ₁ =2.7 P ₂ =16.3 P ₃ =31.6 P ₄ =29.2 TSP=128
70	D870	15-Sep-21	07:18	P ₁ =2.7 P ₂ =13.5 P ₃ =30 P ₄ =97 TSP=137.7
71	D871	15-Sep-21	07:21	P ₁ =2.9 P ₂ =15.1 P ₃ =30 P ₄ =72.1 TSP=168
72	D872	15-Sep-21	07:24	P ₁ =3.6 P ₂ =11 P ₃ =18.1 P ₄ =38.4 TSP=52.1
73	D873	15-Sep-21	07:30	P ₁ =3.4 P ₂ =11.5 P ₃ =13.2 P ₄ =31.1 TSP=38.9
74	D874	15-Sep-21	07:32	P ₁ =3.5 P ₂ =10.9 P ₃ =17.4 P ₄ =34 TSP=42.2
75	D875	15-Sep-21	07:34	P ₁ =3.7 P ₂ =16.7 P ₃ =28 P ₄ =66.6 TSP=103.6
76	D876	15-Sep-21	07:37	P ₁ =4 P ₂ =15.3 P ₃ =32.5 P ₄ =76.5 TSP=86.9
77	D877	16-Sep-21	15:27	P ₁ =1.7 P ₂ =9.3 P ₃ =15.3 P ₄ =35.8 TSP=46.2
78	D878	16-Sep-21	18:24	P ₁ =1.8 P ₂ =6.9 P ₃ =12.5 P ₄ =35.0 TSP=44.8
79	D879	16-Sep-21	12:12	P ₁ =3.0 P ₂ =17.1 P ₃ =103.6 P ₄ =146.3 TSP=196.5
80	D880	16-Sep-21	12:14	P ₁ =2.7 P ₂ =17.7 P ₃ =26.1 P ₄ =52.6 TSP=64.1
81	D881	16-Sep-21	12:21	P ₁ =2.3 P ₂ =14.2 P ₃ =21.6 P ₄ =48.4 TSP=60.1
82	D882	16-Sep-21	12:30	P ₁ =1.8 P ₂ =7.3 P ₃ =18.4 P ₄ =45.5 TSP=69.2
83	D883	16-Sep-21	12:36	P ₁ =31.2 P ₂ =1.9 P ₃ =7.2 P ₄ =13.3 TSP=28.1
84	D884	16-Sep-21	11:16	P ₁ =2.3 P ₂ =8.7 P ₃ =17.1 P ₄ =79.4 TSP=160.4
85	D885	16-Sep-21	11:08	P ₁ =2.3 P ₂ =16.4 P ₃ =21.9 P ₄ =31.6 TSP=79.9
86	D886	16-Sep-21	11:36	P ₁ =2.4 P ₂ =16.2 P ₃ =25.6 P ₄ =53.4 TSP=79.3
87	D887	16-Sep-21	11:47	P ₁ =3.3 P ₂ =20.8 P ₃ =43.8 P ₄ =98.2 TSP=110.5
88	D888	16-Sep-21	10:26	P ₁ =2.4 P ₂ =9.7 P ₃ =17 P ₄ =37.6 TSP=48
89	D889	16-Sep-21	10:01	P ₁ =2.9 P ₂ =19.5 P ₃ =40 P ₄ =162.2 TSP=283.4

90	DB90	14-Sep-21	08:56	R=1.6 P _{2.5} =10.5 P ₁₀ =20.8 P ₅₀ =50.1 TSP=57.5
91	DB91	14-Sep-21	08:49	R=1.8 P _{2.5} =13.2 P ₁₀ =25.6 P ₅₀ =100.5 TSP=168.3
92	DB92	14-Sep-21	07:23	R=1.2 P _{2.5} =15.1 P ₁₀ =41.5 P ₅₀ =136 TSP=180.6
93	DB93	14-Sep-21	07:39	R=2 P _{2.5} =21.3 P ₁₀ = 57.8 P ₅₀ = 211.8 TSP= 301.7
94	DB94	14-Sep-21	07:46	R=3 P _{2.5} =34.2 P ₁₀ =91.1 P ₅₀ =285.4 TSP=277.8
95	DB95	14-Sep-21	06:20	PM=7.6 P _{2.5} =108.5 P ₁₀ =304.7 P ₅₀ =943.9 TSP=335.2
96	DB96	14-Sep-21	08:17	R=7.4 P _{2.5} =36.1 P ₁₀ =58.9 P ₅₀ =449.9 TSP=111.6
97	DB97	14-Sep-21	12:23	R=2.2 P _{2.5} =10.6 P ₁₀ =21.4 P ₅₀ =51.6 TSP=69.5
98	DB98	14-Sep-21	13:03	R=2.2 P _{2.5} =14.7 P ₁₀ =28.9 P ₅₀ =50.6 TSP=69.1
99	DB99	14-Sep-21	11:42	R=2.7 P _{2.5} =16.6 P ₁₀ =27.3 P ₅₀ =60.2 TSP=70.6
100	DB100	14-Sep-21	08:41	R=1.5 P _{2.5} =9.2 P ₁₀ =19.0 P ₅₀ =41.1 TSP=55.3


PM03/Y/09:35 (14-Sep-21)

PM02/Y/10:02 (14-Sep-21)

PM01/Y/13:46 (16-Sep-21)

APPENDIX C – MONITORING LOCALITY SUMMARY TABLE

Air Quality Monitoring Localities:

DB 01	
<p>Location: 23°40'41.16"S; 27°36'4.24"E</p> <p>Farm: Grootestryd 465 LO Portion 5</p> <p>Description: Near Matimba Power Station</p>	
March 2021	Date Installed: 31 st March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 19th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 01	
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 02	
Location: 23°40'52.25"S; 27°36'2.03"E Farm: Grootestryd 465 LQ Portion 5 Description: Near Matimba Power Station	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		50

DB 02	
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 03	
Location: 23°41'37.30"S; 27°33'44.10"E Farm: Turfvlakte 463 LO Description: Next to D1675	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		51

DB 03	
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 04	
Location: 23°41'57.80"S; 27°32'48.26"E Farm: Hierontrent 460 LQ Description: Next to D1675	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		52

DB 04	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Not Sampled – Bucket Stolen
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Exceeded both the Residential limit and the Industrial Limit

DB 05	
Location: 23°42'13.03"S, 27°31'52.68"E Farm: Eenzaamheid 687 LQ Description: Next D1675	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		53

DB 05	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 19th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 06	
<p>Location: 23°42'29.97"S, 27°30'32.64"E</p> <p>Farm: Eenzaamheid 687 LQ</p> <p>Description: Next to D1675</p>	

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		54

DB 06	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 23°42'32.26"S, 27°29'48.38"E

Farm: Eenzaamheid 687 LQ

Description: Next to D1675



March 2021

Date Installed: 31st March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20th July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 19th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021



Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell


56

DB 07	
	Air Quality Class: Ideal

DB 08	
<p>Location: 23°42'43.21"S, 27°27'48.78"E</p> <p>Farm: Pontes Estate 744 LQ</p> <p>Description: Outside farm gate next D1675</p>	
March 2021	Date Installed: 31 st March 2021
April 2021	<p>Date Sampled: 6th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 19th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		57

DB 08	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 09	
Location: 23°42'55.98"S, 27°27'30.40"E Farm: Pontes Estate 744 LQ (Buffels Jag)	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 6 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 3 rd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		58

DB 09	
	Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 10	
Location: 23°43'28.90"S, 27°26'41.33"E Farm: Pontes Estate 744 LQ (Buffels Jag)	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 6 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 3 rd June 2021 Sample Status: Sampled

DB 10	
	Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 11	
Location: 23°44'4.06"S, 27°25'46.60"E Farm: Pontes Estates 712 LQ Description: Border fence of Enkeldraai 718 LQ	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 6 th May 2021 Sample Status: Tampered (Attempted theft) Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		60

DB 11	
May 2021	Date Sampled: 3 rd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 12	
Location: 23°41'23.55"S, 27°34'20.99"E Farm: N/A Description: N/A	
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		61

DB 12	
	Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 13	
Location: 24°38'30.48"S, 27°18'53.46"E Farm: N/A Description: N/A	
June 2021	Date Installed: 19 th July 2021
July 2021	Date Sampled: 13 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 13 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 14

Location: 23°41'8.24"S, 27°35'18.63"E

Farm: N/A

Description: N/A



July 2021

Date Sampled: 19th August 2021

Sample Status: Installed

Air Quality Class: NA

August 2021

Date Sampled: 16th September 2021

Sample Status: Sampled

Air Quality Class: Ideal

DB 15

Location: 23°46'41.92"S, 27°25'52.99"E

Farm: Zandnek 358 LQ Portion 1

Description: Servitude Road



DB 15	
March 2021	Date Installed: 31 st March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 23°47'39.91"S, 27°25'39.16"E

Farm: Renosterpan 361 Portion 6

Description: Servitude Road



March 2021

Date Installed: 31st March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20th July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021




Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

65

DB 16	
	Air Quality Class: Ideal

DB 17	
<p>Location: 23°49'17.37"S, 27°25'15.13"E</p> <p>Farm: Renosterpan 361 Portion 3</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 31 st March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p>


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		66

DB 17	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 18	
Location: 23°50'5.11"S, 27°25'4.54"E Farm: Renosterpan 361 Portion 4 Description: Servitude Road	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		67

DB 18	
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 19	
Location: 23°50'36.53"S, 27°24'56.77"E Farm: Renosterpan 361 Portion 4 Description: Servitude Road	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		68

DB 19	
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 20	
Location: 23°51'5.81"S, 27°24'49.59"E Farm: Renosterpan 361 Portion 5 Description: Servitude Road	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 20	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 21	
Location: 23°51'43.25"S, 27°24'40.22"E Farm: Naauwpoort 365 LQ Description: Servitude Road	
March 2021	Date Installed: 30 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		70

DB 21	
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 23°52'22.70"S, 27°24'31.05"E

Farm: Naauwpoort 365 LQ

Description: Servitude Road



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021



Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

72

DB 22	
	Air Quality Class: Ideal

DB 23	
<p>Location: 23°53'36.73"S, 27°24'13.40"E</p> <p>Farm: Rooipan 357 LQ Portion 2</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 30 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)		Client Restricted Author: D Nell 73
Revision:	0.0		
Date:	August 2021		
		Environmental Assurance (Pty) Ltd	

DB 23	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 24	
Location: 23°53'39.51"S, 27°24'12.55"E Farm: Rooipan 357 LQ Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		74

DB 24	
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal


DB 25	
Location: 23°54'1.90"S, 27°24'6.76"E Farm: Rooipan 357 LQ Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		75

DB 25	
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 26	
Location: 23°54'46.08"S, 27°23'56.64"E Farm: Rooipan 357 LQ Portion 4 Description: Servitude Dam	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 26	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 27	
Location: 23°55'22.69"S, 27°23'47.77"E Farm: Zandfontein Portion 2 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		77

DB 27	
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 23°56'29.84"S, 27°23'31.71"E

Farm: Zandfontein Portion 2

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021


Sample Status: Sampled

DB 28	
	Air Quality Class: Ideal

DB 29	
<p>Location: 23°57'11.41"S, 27°23'28.14"E</p> <p>Farm: Diepspruit 386 LO</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		80

DB 29	
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 30	
Location: 23°57'58.79"S, 27°23'37.97"E Farm: Diepspruit 386 LQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		81

DB 30	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 31	
<p>Location: 23°58'36.77"S, 27°23'44.50"E</p> <p>Farm: Mabulskop 406 LQ</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		82

DB 31	
	Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 32	
Location: 23°59'45.59"S, 27°23'58.25"E Farm: Mabulskop 406 LQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		83

DB 32	
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 33	
Location: 24° 0'4.67"S, 27°24'1.95"E Farm: Groenland 397 LQ Portion 2 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 33	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 34	
Location: 24° 0'37.82"S, 27°24'8.36"E Farm: Groenland 397 LQ Portion 2 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		85

DB 34	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Location: 24° 0'51.33"S, 27°24'10.07"E

Farm: Inkerman 10 KQ Portion 2

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

DB 35	
	Air Quality Class: Ideal

DB 36	
<p>Location: 24° 1'3.54"S, 27°24'12.35"E</p> <p>Farm: Inkerman 10 KQ portion 3</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		88

DB 36	
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 37	
Location: 24° 1'7.07"S, 27°24'13.15"E Farm: Inkerman 10 KQ portion 3 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		89

DB 37	
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal


DB 38	
Location: 24° 1'34.37"S, 27°24'18.32"E Farm: Inkerman 10 KQ Portion 3 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		90

DB 38	
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 39	
Location: 23°41'35.31"S; 27°38'51.43"E Farm: Rietfontein 820 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 39	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 40	
Location: 24° 2'29.74"S, 27°24'28.91"E Farm: Rietfontein 820 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		92

DB 40	
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24° 2'40.69"S, 27°24'31.20"E

Farm: Rietfontein 820 KQ

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

DB 41	
	Air Quality Class: Ideal

DB 42	
<p>Location: 24° 2'46.02"S, 27°24'32.19"E</p> <p>Farm: Rietfontein 15 KQ Portion 4</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		95

DB 42	
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 43	
Location: 24° 3'21.38"S, 27°24'37.93"E Farm: Rietfontein 15 KQ Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		96

DB 43	
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 44	
Location: 24° 4'29.95"S, 27°24'51.86"E Farm: Schoonwater 14 KQ Portion 1 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		97

DB 44	
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 45	
Location: 24° 4'53.87"S, 27°24'55.26"E Farm: Schoonwater 14 KQ Portion 1 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal



Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		98

DB 45	
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 46	
Location: 24° 5'48.56"S, 27°25'8.99"E Farm: Welgewonden 16 KQ portion 6 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		99

DB 46	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 47	
<p>Location: 24° 6'2.39"S, 27°25'12.90"E</p> <p>Farm: Welgewonden 16 KQ portion 9</p> <p>Description: Servitude Road</p>	
<p>Document No: MON-AQR-244-20_21 (21-08)</p> <p>Revision: 0.0</p> <p>Date: August 2021</p>	<div>  <p>Environmental Assurance (Pty) Ltd</p> </div> <div> <p>Client Restricted</p> <p>Author: D Nell</p> <p>100</p> </div>

DB 47	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24° 6'33.52"S, 27°25'21.12"E

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021



Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

102

DB 48	
	Air Quality Class: Ideal

DB 49	
<p>Location: 24° 7'11.42"S, 27°25'32.63"E</p> <p>Farm: Welgewonden 949 KO</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		103

DB 49	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 50	
Location: 24° 7'50.30"S, 27°25'43.01"E Farm: Welgewonden 949 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		104

DB 50	
	Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 51	
Location: 24° 8'36.82"S, 27°25'56.47"E Farm: Welgewonden 949 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		105

DB 51	
	Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 52	
Location: 24° 9'10.22"S, 27°26'5.85"E Farm: Welgewonden 949 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		106

DB 52	
	Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 53	
Location: 24° 9'23.38"S, 27°26'10.00"E Farm: Harlemoost 51 KQ portion 13 Description: Servitude Road	

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		107

DB 53	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24° 9'56.57"S, 27°26'19.10"E

Farm: Harlemoost 51 KQ portion 13

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2nd June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021



Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

109

DB 54	
	Air Quality Class: Ideal

DB 55	
<p>Location: 24°10'32.51"S, 27°26'26.49"E</p> <p>Farm: Harlemoost 51 KO portion 16</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2nd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		110

DB 55	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 56	
Location: 24°10'55.15"S, 27°26'36.17"E Farm: Harlemoost 51 KQ portion 15 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		111

DB 56	
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 57	
Location: 24°11'38.61"S, 27°26'48.79"E Farm: Harlemoost 51 KO portion 15 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 2 nd June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		112

DB 57	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 58	
<p>Location: 24°11'49.30"S, 27°26'51.53"E</p> <p>Farm: Matlabas 94 KQ Portion 2</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		113

DB 58	
	Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 59	
Location: 24°12'25.42"S, 27°26'59.45"E Farm: Matlabas 94 KQ Portion 2 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		114

DB 59	
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 60	
Location: 24°13'6.00"S, 27°26'59.07"E Farm: Matlabas 94 KQ Portion 2 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		115

DB 60	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 61	
<p>Location: 24°14'34.19"S, 27°26'58.48"E</p> <p>Farm: Matsulan 98 KQ Portion 37</p> <p>Description: Servitude Road</p>	

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		116

DB 61	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24°14'49.64"S, 27°26'58.86"E

Farm: Matsulan 98 KQ Portion 37

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

DB 62	
	Air Quality Class: Ideal

DB 63	
<p>Location: 24°15'19.44"S, 27°26'58.33"E</p> <p>Farm: Witklip 665 KQ Portion 4</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		119

DB 63	
	Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 64	
Location: 24°16'6.23"S, 27°26'58.26"E Farm: Witklip 665 KQ Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		120

DB 64	
	Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 65	
Location: 24°16'42.57"S, 27°26'57.57"E Farm: Witklip 665 KO Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		121

DB 65	
	Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 66	
Location: 24°17'26.82"S, 27°26'56.01"E Farm: Witklip 665 KQ Portion 4 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		122

DB 66	
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 67	
Location: 24°18'14.46"S, 27°26'56.97"E Farm: Rugtevley 97 KQ Portion 5 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		123

DB 67	
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24°18'49.52"S, 27°26'57.63"E

Farm: Rugtevely 97 KQ Portion 5

Description: Servitude Road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled


Air Quality Class: Ideal

August 2021

Date Sampled: 15th September 2021

Sample Status: Sampled

DB 68	
	Air Quality Class: Ideal

DB 69	
<p>Location: 24°19'31.03"S, 27°26'56.52"E</p> <p>Farm: Rugtevley 97 KQ Portion 6</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		126

DB 69	
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 70	
Location: 24°20'4.26"S, 27°26'56.14"E Farm: Rugtevley 97 KQ Portion 6 Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		127

DB 70	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 71	
<p>Location: 24°20'45.70"S, 27°26'55.87"E</p> <p>Farm: Blaauwpan 133 KQ</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	Date Sampled: 21 st July 2021

Document No:	MON-AQR-244-20_21 (21-08)		<p>Client Restricted</p> <p>Author: D Nell</p> <p>128</p>
Revision:	0.0		
Date:	August 2021		
		Environmental Assurance (Pty) Ltd	

DB 71	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 18th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 72	
<p>Location: 24°21'48.85"S, 27°26'55.81"E</p> <p>Farm: Blaauwpan 133 KQ</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p>


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		129

DB 72	
	Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 73	
Location: 24°23'9.52"S, 27°26'54.85"E Farm: Blaauwpan 133 KQ Description: Servitude Road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		130

DB 73	
	Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 74	
Location: 24°23'21.10"S, 27°26'33.71"E Description: Dirt road between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	
March 2021	Date Installed: 29 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		131

DB 74	
April 2021	Date Sampled: 5 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 18 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 15 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24°23'31.60"S, 27°26'13.03"E

Description: Dirt road between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 5th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1st June 2021

Sample Status: **Stolen (Dust Bucket stolen from the dust stand)**

Air Quality Class: NA

June 2021

Date Sampled: 21st July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 18th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021


Date Sampled: 15th September 2021

DB 75	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 76	
<p>Location: 24°23'53.46"S, 27°25'19.77"E</p> <p>Description: Dirt road between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 3</p>	
March 2021	Date Installed: 30th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21st July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	Date Sampled: 18 th August 2021

Document No:	MON-AQR-244-20_21 (21-08)		<p>Client Restricted</p> <p>Author: D Nell</p> <p>134</p>
Revision:	0.0		
Date:	August 2021		
		Environmental Assurance (Pty) Ltd	

DB 76	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 15th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 77	
<p>Location: 24°24'24.61"S, 27°24'3.45"E</p> <p>Farm: Diepkuil 135 KQ Portion 3</p> <p>Description: Along the R510</p>	
March 2021	Date Installed: 30th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	Date Sampled: 21 st July 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		135

DB 77	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 78	
<p>Location: 23°41'35.31"S; 27°38'51.43"E</p> <p>Farm: Diepkuil Portion 3</p> <p>Description: Along the R510</p>	
March 2021	Date Installed: 30 th March 2021
April 2021	<p>Date Sampled: 5th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p>

DB 78	
	Air Quality Class: Ideal
June 2021	Date Sampled: 21 st July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 79	
Location: 24°25'29.93"S, 27°24'23.06"E Farm: Diepkuil 135 KQ Portion 1 Description: Along the R510	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		137

DB 79	
	Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 80	
Location: 24°25'33.45"S, 27°24'13.50"E Description: Along Dirt road between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		138

DB 80	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24°25'47.88"S, 27°23'10.20"E

Description: Along Dirt road between Zondagsuil 137 KQ and Diepkuil
135 KQ portion 1



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 4th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19th July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 17th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 14th September 2021

Sample Status: Sampled

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021



Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

140

DB 81	
	Air Quality Class: Ideal

DB 82	
<p>Location: 24°26'31.14"S, 27°21'39.92"E</p> <p>Description: Along Dirt road between Buffelsvley 127 KQ and Karoobult 126 KQ</p>	
March 2021	Date Installed: 30 th March 2021
April 2021	<p>Date Sampled: 4th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		141

DB 82	
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 83	
Location: 24°27'9.88"S, 27°20'11.67"E Description: Along Dirt road between Buffelsvley 127 KQ and Karoobult 126 KQ	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		142

DB 83	
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 84	
Location: 24°28'20.86"S, 27°17'27.36"E Farm: Paarl 124 KO Portion 6 Description: Beneath power line	
March 2021	Date Installed: 30 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		143

DB 84	
	Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 85	
Location: 24°30'0.19"S, 27°16'58.48"E Farm: Paarl 124 KQ Portion 3 Description: Beneath powerlines near eastern boundary line	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		144

DB 85	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

DB 86	
<p>Location: 24°31'38.11"S, 27°16'29.83"E</p> <p>Farm: Stratford 462 KQ</p> <p>Description: Along D769 dirt road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		145

DB 86	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>

Location: 24°33'53.16"S, 27°18'16.95"E

Farm: Stratford 462 KQ

Description: Along D769 dirt road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 4th May 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

June 2021

Date Sampled: 19th July 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

July 2021

Date Sampled: 17th August 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

Document No:

MON-AQR-244-20_21 (21-08)

Revision:

0.0

Date:

August 2021




Environmental Assurance (Pty) Ltd

Client Restricted

Author: D Nell

147

DB 87	
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded both the Residential limit and the Industrial</p>

DB 88	
<p>Location: 24°34'14.79"S, 27°18'36.10"E</p> <p>Farm: Stratford 462 KQ</p> <p>Description: Situated between the houses of the small community</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 4th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded Residential Limit</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		148

DB 88	
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 89	
Location: 24°34'24.25"S, 27°18'35.18"E Farm: Stratford 462 KQ Description: Situated within Primary School Property	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		149

DB 89	
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 90	
Location: 24°35'35.70"S, 27°17'45.31"E Farm: Mooivalei 342 KQ – Portion 1 Description: Situated next to the farmhouse property fence	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		150

DB 90	
	Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 91	
Location: 24°35'59.20"S, 27°17'38.40"E Farm: Mooivalei 342 KQ – Portion 2 Description: Situated Within the farmhouse boundary fence	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		151

DB 91	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 3rd June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 22nd July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Location: 24°36'25.02"S, 27°17'49.23"E

Farm: Mooivalei 342 KQ – Portion 4

Description: Situated near the farmhouse



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 4th May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19th July 2021

Sample Status: Sampled

Air Quality Class: Ideal

July 2021

Date Sampled: 17th August 2021

Sample Status: Sampled

Air Quality Class: Ideal

August 2021

Date Sampled: 14th September 2021

Sample Status: Sampled

DB 92	
	Air Quality Class: Ideal

DB 93	
<p>Location: 24°36'51.37"S, 27°18'27.13"E</p> <p>Farm: Mooivalei 342 KQ – Portion 7</p> <p>Description: Situated next to the farm work shed</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 4th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		154

DB 93	
	Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 94	
Location: 24°37'18.10"S, 27°18'45.97"E Farm: Mooivalei 342 KQ – Portion 9 Description: Situated within horse paddock	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		155

DB 94	
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 95	
Location: 24°38'3.48"S, 27°18'54.13"E Farm: NA Description: Along D727 dirt road	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Exceeded Residential Limit

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		156

DB 95	
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Exceeded Residential Limit
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 96	
Location: 23°41'25.22"S, 27°34'18.42"E Farm: NA Description: Along unnamed dirt road on the fence line of Exxaro coal mine	
March 2021	Access Restrictions
April 2021	Date Installed: 6 th May 2021
May 2021	Date Sampled: 3 rd June 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		157

DB 96	
June 2021	Date Sampled: 20 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 19 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 16 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 97	
Location: 24°26'15.46"S, 27°22'29.41"E Description: Along Dirt road between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	
March 2021	Date Installed: 29 th March 2021
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		158

DB 97	
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

DB 98	
Location: 24°26'48.84"S, 27°18'57.38"E Farm: Buffelsvley 127 KQ Description: Next to workshop/ homestead	
March 2021	Date Installed: 29 th March 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		159

DB 98	
April 2021	Date Sampled: 4 th May 2021 Sample Status: Sampled Air Quality Class: Ideal
May 2021	Date Sampled: 1 st June 2021 Sample Status: Sampled Air Quality Class: Ideal
June 2021	Date Sampled: 19 th July 2021 Sample Status: Sampled Air Quality Class: Ideal
July 2021	Date Sampled: 17 th August 2021 Sample Status: Sampled Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

Location: 24°32'48.86"S, 27°17'24.55"E

Farm: Stratford 462 KO

Description: Along D769 dirt road



March 2021

Date Installed: 29th March 2021

April 2021

Date Sampled: 4th May 2021

Sample Status: Sampled

Air Quality Class: Exceeded residential limits

May 2021

Date Sampled: 1st June 2021

Sample Status: Sampled

Air Quality Class: Exceeded both the Residential and Industrial limits

June 2021

Date Sampled: 19th July 2021

Sample Status: Sampled

Air Quality Class: Exceeded residential limits

July 2021

Date Sampled: 17th August 2021

Sample Status: Sampled

Air Quality Class: Exceeded both the Residential and Industrial limits

August 2021

Date Sampled: 14th September 2021


DB 99	
	<p>Sample Status: Sampled</p> <p>Air Quality Class: Exceeded the Residential limit</p>

DB 100	
<p>Location: 24°35'5.76"S, 27°18'49.94"E</p> <p>Farm: Mooivalei 342 KQ – Portion 1</p> <p>Description: Near the D1649 Road</p>	
March 2021	Date Installed: 29 th March 2021
April 2021	<p>Date Sampled: 4th May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 1st June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 19th July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
July 2021	<p>Date Sampled: 17th August 2021</p> <p>Sample Status: Sampled</p>

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		162

DB 100	
	Air Quality Class: Ideal
August 2021	Date Sampled: 14 th September 2021 Sample Status: Sampled Air Quality Class: Ideal

ES01	
<p>Location: 24°34'22.26"S, 27°18'33.97"E</p> <p>Description: Primary School</p>	
June 2021	Not installed due to insurance delays and time constraints
July 2021	Installed: 19 th August 2021
August 2021	<p>Date Sampled: 16th September 2021</p> <p>Sample Status: Sampled</p>

ES02	
<p>Location: 23°41'51.31"S, 27°34'6.52"E</p> <p>Description: Eskom - Medupi Power Station</p>	
June 2021	Date Installed: 19 th July 2021
July 2021	<p>Date Sampled: 20th August 2021</p> <p>Sample Status: Sampled</p>
August 2021	Date Sampled: 14 th September 2021

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		164

ES02	
	Sample Status: Sampled

ES03	
<p>Location: 24°35'37.25"S, 27°17'43.45"E</p> <p>Farm: Mooivalei 342 KQ – Portion 1</p> <p>Description: Situated within the farmhouse property fence</p>	
June 2021	Date Installed: 19 th July 2021
July 2021	<p>Date Sampled: 20th August 2021</p> <p>Sample Status: Sampled</p>
August 2021	<p>Date Sampled: 14th September 2021</p> <p>Sample Status: Sampled</p>


Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		165

APPENDIX D – INDEPENDENT FORM AND CV

STATEMENT OF OBJECTIVENESS AND COMPETENCE

The author(s) of this document hereby declare that he/she/they:

- Act as an independent and objective consultant/s;
- Does not have any financial interest in the undertaking of this project or projects, other than remuneration for the work performed in terms of relevant legislation;
- Has and will not have a vested interest in the current and/or proposed activity, nor will engage in any directly conflicting interest associated with this project;
- Undertakes to function transparently and provide any information to a competent authority if compelled to do so by law or by consent of the involved parties;
- Based on the information provided by the client, due diligence studies or any other source or sources, have presented the results, discussion and conclusion, as applicable to the project concerned, to the best of his/her/their professional ability;
- Reserves the right to modify aspects pertaining to this study should additional information become available through ongoing research and further work on the relevant field/s;
- Undertakes to have the work peer reviewed on a regular basis by a competent specialist in the field/s of study;
- Is duly qualified and experienced to undertake the work at hand; and
- Adheres to the code of conduct as stipulated under Section 28 (3) of the Natural Scientific Professions Act 27 of 2003 as observed by the South African Council for Natural Scientific Professions (SACNASP).
- Signed by Anton Botha:



Date: 28-10-2021

Environmental Auditor	Relevant expertise
Anton Botha Pr. Sci.Nat Registration No 122440	Has completed a B.Sc. in Environmental Sciences, followed by a B.Sc. (Hons) and M.Sc. specialising in Hydrogeology and Hydrology. Anton has comprehensive experience and knowledge on compliance monitoring, project management and specialist reporting. As an environmental consultant, Anton has provided numerous environmental monitoring assessments, specialist input services, mine closure quantum's and environmental audits. monitoring assessments, specialist input services and environmental audits.



ENVIRONMENTAL ASSURANCE (PTY) LTD

Anton Botha

ENVIRONMENTAL CONSULTANT & DIVISIONAL MANAGER

394 Tram Street, New Muckleneuk, Pretoria, 0181

T : 012 460 9768 ; M : 083 555 4354 ; F : 012 460 3071 ; E mail : anton@envass.co.za

Date of Birth : 25 July 1991 ; Place of Birth : South Africa

Ethnic Group and Gender : White Male ; Disabilities : None

AREAS OF EXPERTISE

- Compliance Monitoring
- Data Analysis & Interpretation
- Potable, Ground and Surface Water Quality
- Compliance Monitoring
- Data Analysis & Interpretation
- Hydrogeology
- Ambient Air and Particulate Matter Quality
- Water and Salt Balance Development and Assessment
- Hydrogeology
- Ambient Air and Particulate Matter Quality
- Customer Relationships
- Site Audits and Inspections
- Field Sampling of dust, soil, ambient air and water
- Customer Relationships
- Site Audits and Inspections

CAREER HISTORY

Employer
Period
Position
Responsibilities

ENVIRONMENTAL ASSURANCE (PTY) LTD

Anton holds a B.Sc. in Environmental Sciences, followed by a B.Sc. (Hons) and M.Sc. specializing in Hydrogeology and Hydrology. He has comprehensive experience and knowledge on compliance monitoring, project management and specialist reporting. As an environmental consultant, Anton has provided several environmental monitoring assessments, audits, mine closure assessments and specialist input services.

BUSINESS UNIT HEAD: COMPLIANCE MONITORING, SPECIALIST AND MINE CLOSURE

Environmental Consultant and Auditor

October 2018 – Current

- Develop and maintain environmental compliance monitoring programmes in conjunction with site audits and assessments. Monitoring co-ordination and planning of all relevant projects. Maintaining data and results from monitoring programmes and databases. Conduct compliance audits, determine compliance ratings and report on conditions. Determining financial provision of mine closures. Compile and overseeing reports on water-, soil-, air-quality and site findings, with interpretation of results and possible recommendations. Maintain and build customer relationships with guidance on environmental matters and updates on environmental legislation. Market to potential clients with site specific marketing material

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		167

EDUCATION AND QUALIFICATIONS

North-West University; Masters (MSc.) Hydrogeology - 2018
 North-West University; Honours BSc. Hydrogeology and Hydrology - 2013
 North-West University; Degree BSc. Environmental Science Geology and Geography – 2012

PROFESSIONAL STATUS

Registration
 Membership

Registered as a Professional Natural Scientist (122440) with the South African Council of Natural Scientific Professions (SACNASP)

PROJECT EXPERIENCE

PROJECT DESCRIPTION	CLIENT
Water and Air Quality Monitoring programme co-ordination, management and reporting	Afrimat Lyttleton
	Afrimat Delfsand
	Assmang Black Rock
	Assmang Dwarsrivier
	Barloworld Slurry
	Blue Diamond Mine
	Exxaro Base Metals Zincor
	Lonmin Marikana
	Kimberly Ekapa Mining
	Kimberley Ekapa Mining Joint Venture
	Kudumane Manganese Resources
	Mooikloof Heights
	Polokwane Smelter
	PPC Dwaalboom
	PPC Slurry
	Rolfes Silica
	TC Smelter
	Makoya Binkpan
	Makoya Highveld
	SACMH Umlabu
	SACMH Voorslag
	Ocon Brick
	Group 5 Everite
	Locksand
	Samancor WCM
	Samancor ECM
	Rosema Olifantsfontein
	Rosema Delmas
	Sublime
	SABrix Boekenhoutkloof
	SABrix Zandfontein
	Tubatse Chrome
	Infrabuild
	Federale Stene
	Tronox
	Canyon Coal
	Lynca Meats
	Ankerlig
	Lafarge
	SACMH Voorslag
Water and Salt Balances	PPC Dwaalboom
	Kimberly Ekapa Mining (De Beers)

REFERENCES

	SABrix Zandfontein
	SABrix Boekenhoutkloof
	Lynca Meats
	Ilangabi Brikor Plant 1
	Kudumane Manganese
	Tronox Namakwa Sands Smelter
Specialist Noise, Air, Odour Assessments	Numerous
Odour Assessment	Lafarge Geocycle
Regulation 34 EMPr Audits	Several
Technical AEL, WML and WUL Audits	Numerous

CONTACT NAME	COMPANY	RELATIONSHIP	CONTACT
Emile van Druten	ENVASS	Director	012 460 9768
Carl Schoeman	ENVASS	Consultant	012 460 9768



herewith certifies that

Anton Botha

Registration Number: 122440

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)

in the following field(s) of practice (Schedule 1 of the Act)

Environmental Science (Professional Natural Scientist)

Effective **11 September 2019**

Expires **31 March 2022**



Chairperson

Chief Executive Officer



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Document No:
Revision:
Date:

MON-AQR-244-20_21 (21-08)
0.0
August 2021



Environmental Assurance (Pty) Ltd

Client Restricted
Author: D Nell
170

STATEMENT OF OBJECTIVENESS AND COMPETENCE

The author(s) of this document hereby declare that he/she/they:

- Act as an independent and objective consultant/s;
- Does not have any financial interest in the undertaking of this project or projects, other than remuneration for the work performed in terms of relevant legislation;
- Has and will not have a vested interest in the current and/or proposed activity, nor will engage in any directly conflicting interest associated with this project;
- Undertakes to function transparently and provide any information to a competent authority if compelled to do so by law or by consent of the involved parties;
- Based on the information provided by the client, due diligence studies or any other source or sources, have presented the results, discussion and conclusion, as applicable to the project concerned, to the best of his/her/their professional ability;
- Reserves the right to modify aspects pertaining to this study should additional information become available through ongoing research and further work on the relevant field/s;
- Undertakes to have the work peer reviewed on a regular basis by a competent specialist in the field/s of study;
- Is duly qualified and experienced to undertake the work at hand; and
- Adheres to the code of conduct as stipulated under Section 28 (3) of the Natural Scientific Professions Act 27 of 2003 as observed by the South African Council for Natural Scientific Professions (SACNASP).
- Signed by Damon Nell:



Date: 25-10-2021

Environmental Auditor	Relevant expertise
Damon Nell Cand.Sci.Nat Registration No 124378	Has completed a B.Sc. in Environmental Sciences, followed by a B.Sc. (Hons) in Plant Science. Damon has comprehensive experience and knowledge on compliance monitoring, project management and specialist reporting. As an environmental consultant, Damon has provided numerous environmental monitoring assessments, and specialist input services.



ENVIRONMENTAL ASSURANCE (PTY) LTD

Damon Nell

ENVIRONMENTAL CONSULTANT & FIELD TECHNICIAN

394 Tram Street, New Muckleneuk, Pretoria, 0181

T : 012 460 9768 ; M : 072 506 9692; F : 012 460 3071 ; E mail :
damon@envass.co.za

Date of Birth : 01 June 1997; Place of Birth : South Africa

Ethnic Group and Gender : White Male ; Disabilities : None

AREAS OF EXPERTISE

- Compliance Monitoring
- Ambient Air and Particulate Matter Quality
- Customer Relationships
- Data Analysis & Interpretation
- Potable, Ground and Surface Water Quality
- Field Sampling of dust, soil, ambient air and water
- Water and Salt Balance Development and Assessment

CAREER HISTORY

Employer
Period
Position
Responsibilities

ENVIRONMENTAL ASSURANCE (PTY) LTD

Damon holds a B.Sc. in Environmental Sciences, followed by a B.Sc. (Hons) in Plant Science from the University of Pretoria. He has comprehensive experience and knowledge on compliance monitoring, project management and specialist reporting. As an environmental consultant, Damon has provided several environmental monitoring assessments, and specialist input services.

Environmental Consultant and Field Technician.

February 2021 – Current

- Conduct specialist studies and reports in the field of Visual Impacts, and Terrestrial Vegetation, and conduct compliance monitoring with regards to surface water, ground water, air quality and site findings, with interpretation of results and possible recommendations. Maintain and build customer relationships with guidance on environmental matters and updates on environmental legislation. Market to potential clients with site specific marketing material.

EDUCATION AND QUALIFICATIONS

University of Pretoria: Honours (Hons) BSc. Plant Science and Plant Diversity – 2019

University of Pretoria: Degree BSc. Environmental Science - 2018

PROFESSIONAL STATUS

Registration
Membership

Registered as a Candidate Natural Scientist (124378) with the South African Council of Natural Scientific Professions (SACNASP)

Document No:	MON-AQR-244-20_21 (21-08)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.0		Author: D Nell
Date:	August 2021		172

PROJECT EXPERIENCE

PROJECT DESCRIPTION	CLIENT
Water and Air Quality Monitoring program reporting	Tronox Fairbreeze
	Tronox Hillendale
	Hercules Bricks
	Sublime
	Silica Quartz
	SA Brix
	Rosema
Specialist Visual Impact and Vegetation Assessments	Victoria Bricks
	Samancor Ferrometals
	Goldfields – Deep South
	Samancor Eastern Chrome Mines
	Kephri Innovations

REFERENCES

CONTACT NAME	COMPANY	RELATIONSHIP	CONTACT
Emile van Druten	ENVASS	Director	012 460 9768
Carl Schoeman	ENVASS	Consultant	012 460 9768



herewith certifies that
Damon Travis Nell
Registration Number: 124378
is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Ecological Science (Candidate Natural Scientist)
Environmental Science (Candidate Natural Scientist)
Botanical Science (Candidate Natural Scientist)

Effective **9 September 2020**

Expires **31 March 2022**



Chairperson

Chief Executive Officer



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Document No:	MON-AQR-244-20_21 (21-08)		Client Restricted
Revision:	0.0	Environmental Assurance (Pty) Ltd	Author: D Nell
Date:	August 2021		174