


# MONTHLY AIR QUALITY REPORT



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



DOCUMENT CONTROL			
Document Title	Mokolo Crocodile Water Augmentation Project Phase 2 (MCWAP-2) Environmental Baseline Air Quality Monthly Monitoring Report.		
Report Number	MON-AQR-244-20_21 (21-06)		
Version	0.1		
Date	June to July 2021		
Submitted to	Umeshree Naicker GIBB	Minenhle Luthuli GIBB	Deon Esterhuizen MDT Environmental
Distribution	Gibb Bigen Nyeleti Joint Venture Environmental Assurance (Pty) Ltd.		
QUALITY CONTROL			
	Originated By	Technical Review	
Name	Damon Nell	Anton Botha	
Designation	Environmental Consultant Pr.Sci.Nat 124378	Environmental Consultant Pr.Sci.Nat 122440	
Signature			
Date	23-08-2021	26-08-2021	
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Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	June to July 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 June 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 June 2021 air quality monitoring:

- Ninety-six (96) out of one hundred (100) samples were obtained and analysed during the monitoring period;
- The monitoring comprises of one-hundred (100) Gravimetric Dust Fall-Out Monitoring Localities and three (3) Remote Particulate Matter E-Samplers. It should be noted that the air quality is monitored for baseline determination and impact identification;
- One (1) dust bucket (DB04) was recorded as being stolen from the dust stand during the monitoring period;
- Two (2) dust stands (DB12 and DB13) were installed during the monitoring and therefore results will be reflected within the July 2021 monitoring report.
- One (1) dust stand (DB 14) could not be installed due to access restrictions, however will be relocated during the July 2021 monitoring period;
- Two (2) E-samplers (ES01 and ES02) were scheduled and installed to during the monitoring period;
- Sample locality DB87 recorded an exceedance in the SANS 1929 Industrial limit of 1200 mg/m<sup>2</sup>/day with a recorded value of 1472 mg/m<sup>2</sup>/day. The locality is situated alongside the D769 public dirt road outside of the Stratford 462 KQ farm, 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/m<sup>2</sup>/day with values of 883 mg/m<sup>2</sup>/day and 1059 mg/m<sup>2</sup>/day respectfully. Locality DB86 is situated alongside the D769 public dirt road and locality DB99 is situated alongside the D727 public dirt road;
- The remaining monitoring locality results were compliant to the set SANS 1929 limits;

Document No:	MON-AQR-244-20_21 (21-06)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	June to July 2021		ii

- Monitoring locality DB87 presented the highest readings during the June to July 2021 monitoring period at 1472 mg/m<sup>2</sup>/day (above the Industrial Limit), while monitoring locality DB62 presented the lowest with a calculated 2 mg/m<sup>2</sup>/day; and
- The wind direction recorded during the monitoring period originated from the West-Southwest and to a lesser extent from the North. Wind speeds reaching a maximum of 2.7 m/s with a total rainfall recorded at 26.6 mm during the monitoring period.

Document No:	MON-AQR-244-20_21 (21-06)	GIBB Bigen Nyeleti Joint Venture	Client Restricted
Revision:	0.0	(GBN-JV)	Author: D. Nell
Date:	June to July 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
7.3.	GRAVIMETRIC DUST FALLOUT RESULTS .....	18
7.4.	WEATHER DATA .....	25
8.	CONCLUSION AND ASPECTS TO CONSIDER .....	32
9.	PROPOSED MITIGATION AND POLLUTION PREVENTION MEASURES DURING FUTURE CONSTRUCTION..	32
10.	REFERENCES .....	35
	Appendix A – EQUIPMENT CHECKLIST .....	36
	Appendix B – ENVASS Chain of Custody (CoC) FORM .....	37
	Appendix C – MONITORING LOCALITY SUMMARY TABLE .....	44
	Appendix D – INDEPENDENT FORM AND CV .....	143

## 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: Wind Direction Frequency Average .....	28
Figure 6: Windrose Diagram .....	28
Figure 7: Rainfall for monitoring period .....	31

## 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 $\mu\text{g}/\text{m}^3$ ) .....	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: April 2021 Monthly Sampling Register .....	13
Table 6: Gravimetric Dust Fallout Results.....	19
Table 7: Wind Direction .....	25
Table 8: Average Wind Speeds.....	26
Table 9: Beaufort Wind Force Scale .....	29
Table 10: Rainfall .....	30

## 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 <sub>10</sub>	Particulate Matter of less than 10 microns in diameter
SANS	South African National Standards

MEASUREMENT UNITS	
mg/m <sup>2</sup> /day	Milligram per square meter per day
PPM	Parts per million
µg/m <sup>3</sup>	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: Revision: Date:	MON-AQR-244-20_21 (21-06) 0.0 June to July 2021	GIBB Bigen Nyeleti Joint Venture (GBN-JV)	Client Restricted Author: D. Nell vi
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## 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 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 (21-06)		Client Restricted
Revision:	0.1	Environmental Assurance (Pty) Ltd	Author: D Nell
Date:	June 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 sampling will be implemented from July 2021 with the use of three (3) E-Samplers.

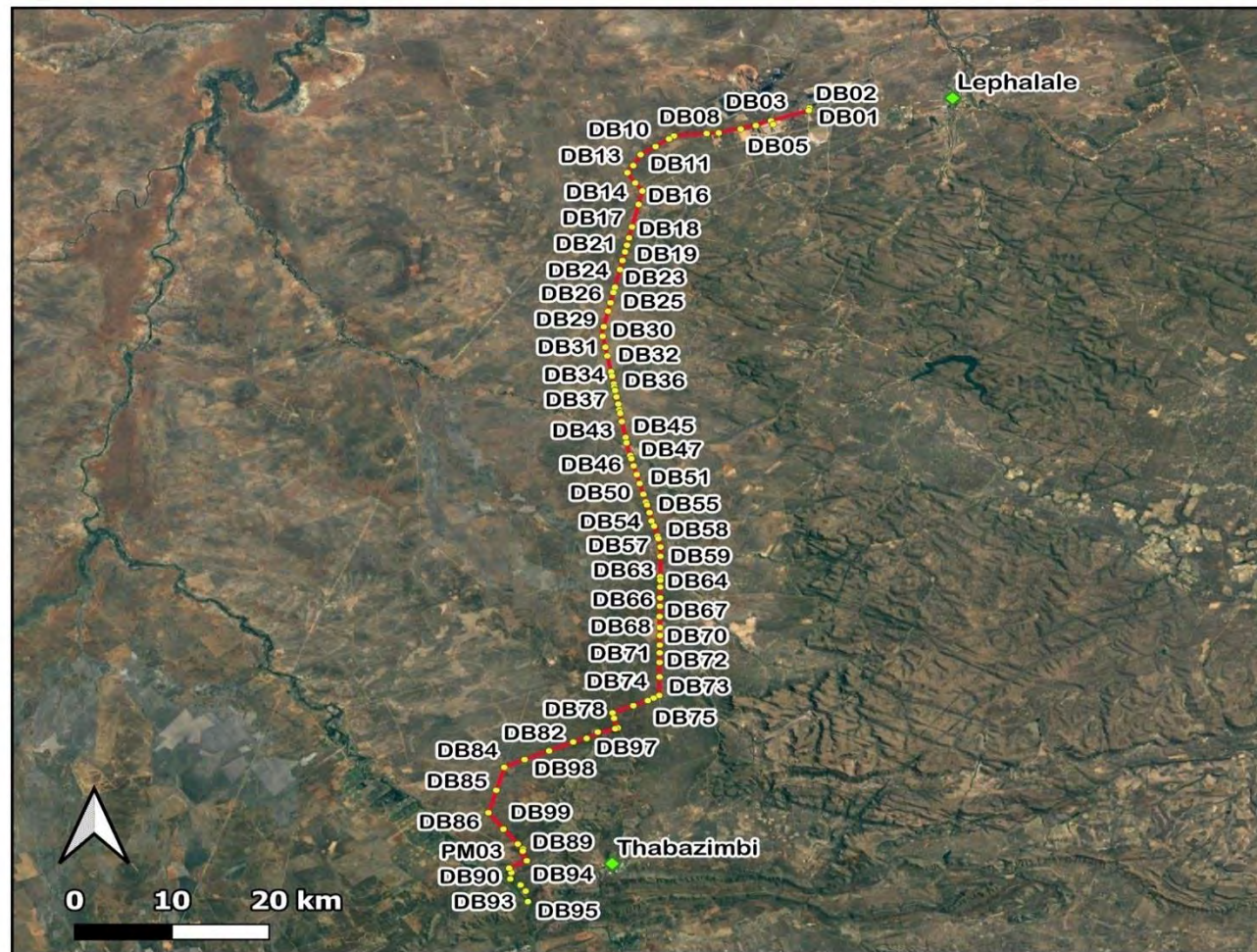
Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		3

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"> <li>• Along Pipeline Alignment;</li> <li>• Selected positions at the Weir, Balancing dams, Break Pressure Reservoir and Points of Supply;</li> <li>• Monitoring Weirs;</li> <li>• Along Gravel Access Roads;</li> <li>• Borrow Pits and Spoil Areas; and</li> <li>• Sensitive Receptors.</li> </ul>	100	Monthly
Handheld PM Reader <ul style="list-style-type: none"> <li>• A PM reading will be recorded at each Dust stand during the monitoring period.</li> </ul>	100	Monthly
PM10 E-Sampler <ul style="list-style-type: none"> <li>• Kesarona Primary School, Medupi Power Station &amp; Mooivalei Portion 1</li> </ul>	3	Monthly (6 Month Programme) To be initiated in July 2021

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



## Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points



Project: 224-20\_21  
Map by: Richard Viljoen  
Date: 11/02/2021  
Coordinate System: EPSG 3857

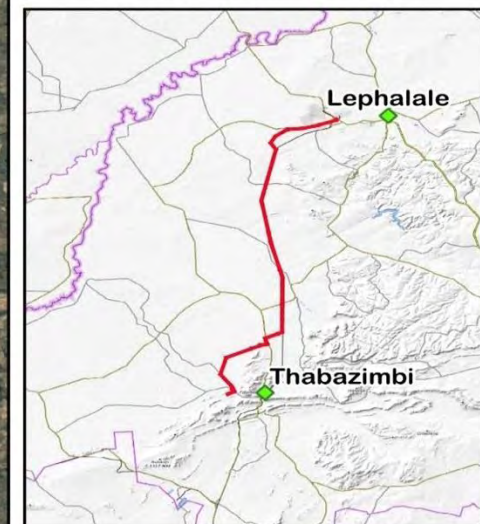
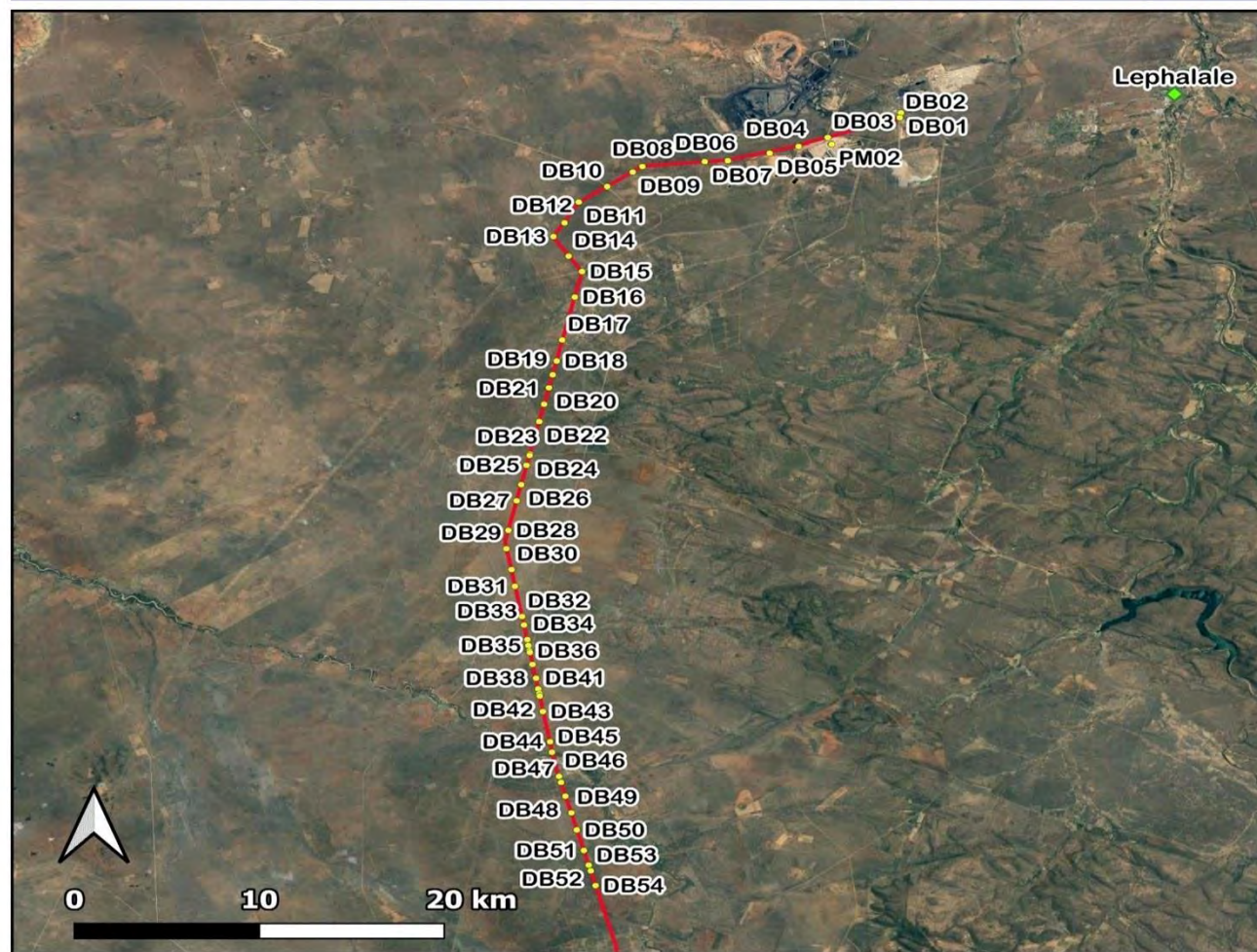


Figure 1: GBN-JV Air Quality Monitoring Localities

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		5



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



### Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points

"Your Partner in Calculating Environmental Solutions"



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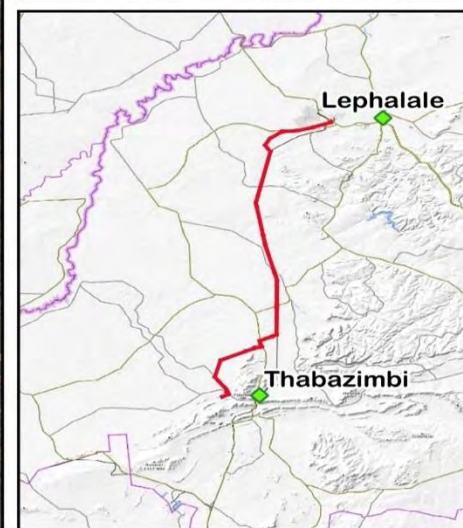
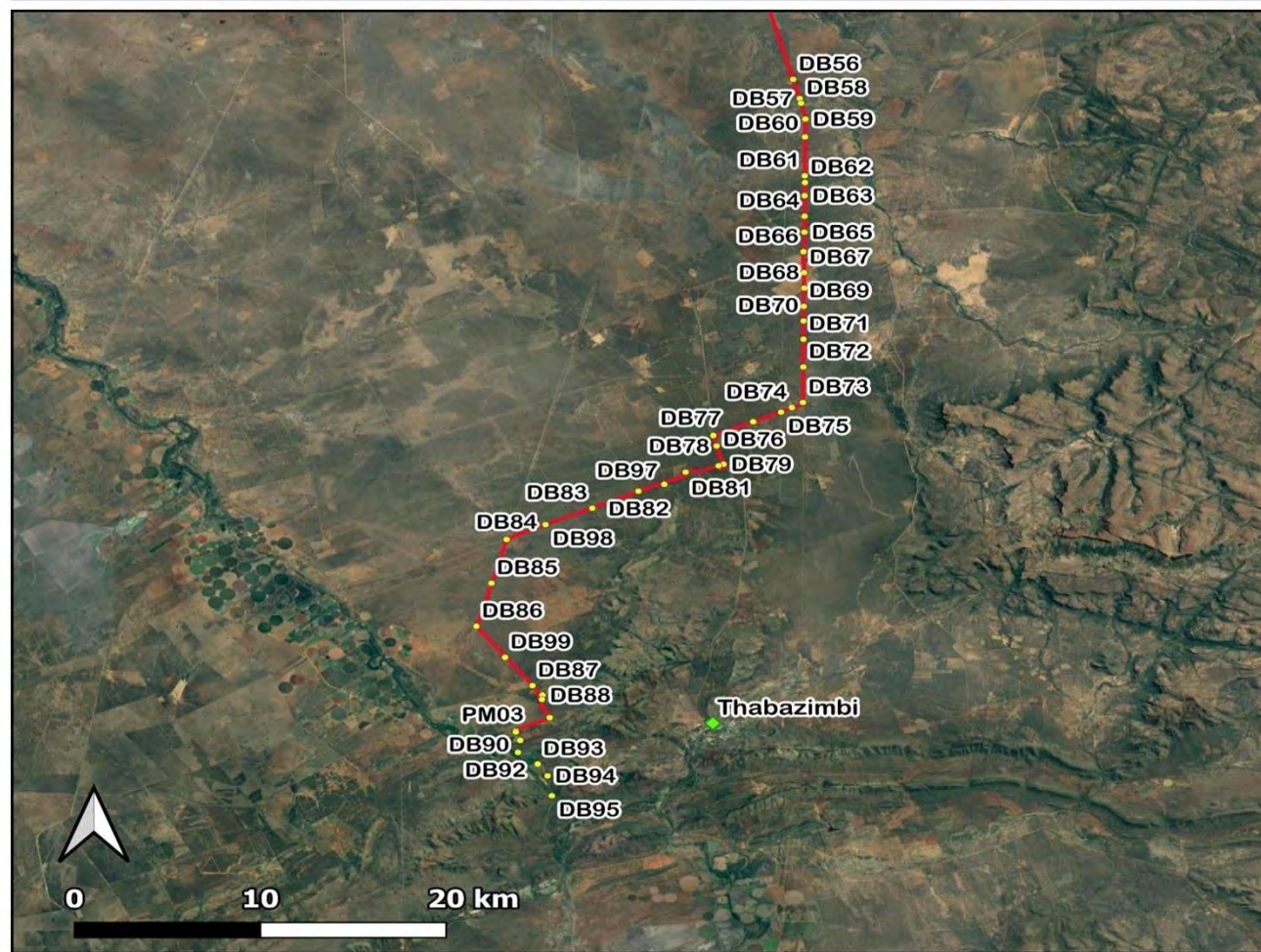


Figure 2: GBN-JV Air Quality Monitoring Localities (Northern Region)

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		6



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



### Legend

- ◆ Towns
- Pipeline
- Air Quality Monitoring Points

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Project: 224-20\_21

Map by: Richard Viljoen

Date: 11/02/2021

Coordinate System: EPSG 3857

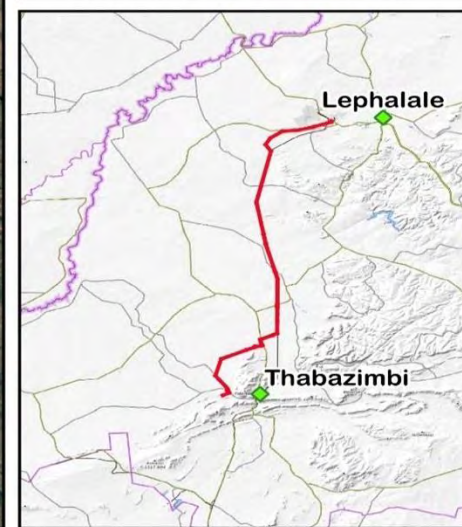


Figure 3: GBN-JV Air Quality Monitoring Localities (Southern Region)

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 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 PM<sub>10</sub>, PM<sub>2.5</sub>, 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 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 <sub>10</sub>	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 ( $\pm 2$ ) 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 ( $\pm 0.2$ ) 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 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 <sup>2</sup> /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 <sup>2</sup> / 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 PM<sub>10</sub>, carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>) 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), PM<sub>10</sub> (particulate matter with a diameter of less than or equal to 10 microns), PM<sub>4</sub> (particulate matter with a diameter of less than or equal to 4 microns), very fine particles such as PM<sub>2.5</sub> (particulate matter with a diameter of less than or equal to 2.5 microns) and PM<sub>1</sub> (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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		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<sub>2.5</sub> 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/m<sup>3</sup>)**. 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/m<sup>3</sup>) 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		12



## 7. RESULTS AND DISCUSSION

### 7.1. MONTHLY SAMPLING REGISTER

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

Table 5: June 2021 Monthly Sampling Register

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB01	Grootestryd 465 LQ Portion 5	23°40'41.16"S	27°36'4.24"E	Damon Nell/ Enock Machete	20 <sup>th</sup> July 2021	16:12	Sampled
DB02	Grootestryd 465 LQ Portion 5	23°40'52.25"S	27°36'2.03"E		20 <sup>th</sup> July 2021	16:09	Sampled
DB03	Along D1675 outside of Turfvlakte 463 LQ farm	23°41'37.30"S	27°33'44.10"E		20 <sup>th</sup> July 2021	14:21	Sampled
DB04	Along D1675 outside of Hierontrent 460 LQ farm	23°41'57.80"S	27°32'48.26"E		20 <sup>th</sup> July 2021	14:17	Not Sampled - Stolen
DB05	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'13.03"S	27°31'52.68"E		20 <sup>th</sup> July 2021	14:12	Sampled
DB06	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'29.97"S	27°30'32.64"E		20 <sup>th</sup> July 2021	14:09	Sampled
DB07	Along D1675 outside of Eenzaamheid 687 LQ farm	23°42'32.26"S	27°29'48.38"E		20 <sup>th</sup> July 2021	14:05	Sampled
DB08	Along D1675 outside of Pontes Estate 744 LQ farm	23°42'43.21"S	27°27'48.78"E		20 <sup>th</sup> July 2021	13:26	Sampled
DB09	Pontes Estate 744 LQ (Buffels Jag)	23°42'55.98"S	27°27'30.40"E		20 <sup>th</sup> July 2021	13:47	Sampled
DB10	Pontes Estate 744 LQ (Buffels Jag)	23°43'28.90"S	27°26'41.33"E		20 <sup>th</sup> July 2021	13:53	Sampled
DB11	Pontes Estates 712 LQ	23°44'4.06"S	27°25'46.60"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	13:09	Sampled
DB12						NA	Access Restriction – Will be installed along the Servitude Road during the August 2021 monitoring period.
DB13	D729 dirt road	24°38'30.48"S	27°18'53.46"E		19 <sup>th</sup> July 2021	06:26	Stand Installed

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		13

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB14	Along unnamed dirt road bordering Exxaro mine	23°41'8.24"S	27°35'18.63"E		20 <sup>th</sup> July 2021	14:37	Stand Installed
DB15	Servitude Road	23°46'41.92"S	27°25'52.99"E		20 <sup>th</sup> July 2021	15:21	Sampled
DB16	Servitude Road	23°47'39.91"S	27°25'39.16"E		20 <sup>th</sup> July 2021	15:27	Sampled
DB17	Servitude Road	23°49'17.37"S	27°25'15.13"E	Damon Nell/ Enock Machete	20 <sup>th</sup> July 2021	15:34	Sampled
DB18	Servitude Road	23°50'5.11"S	27°25'4.54"E		21 <sup>st</sup> July 2021	12:01	Sampled
DB19	Servitude Road	23°50'36.53"S	27°24'56.77"E		21 <sup>st</sup> July 2021	11:57	Sampled
DB20	Servitude Road	23°51'5.81"S	27°24'49.59"E		21 <sup>st</sup> July 2021	11:53	Sampled
DB21	Servitude Road	23°51'43.25"S	27°24'40.22"E		21 <sup>st</sup> July 2021	11:49	Sampled
DB22	Servitude Road	23°52'22.70"S	27°24'31.05"E		21 <sup>st</sup> July 2021	11:45	Sampled
DB23	Servitude Road	23°53'36.73"S	27°24'13.40"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	11:39	Sampled
DB24	Servitude Road	23°53'39.51"S	27°24'12.55"E		21 <sup>st</sup> July 2021	11:36	Sampled
DB25	Servitude Road	23°54'1.90"S	27°24'6.76"E		21 <sup>st</sup> July 2021	11:33	Sampled
DB26	Servitude Road	23°54'46.08"S	27°23'56.64"E		21 <sup>st</sup> July 2021	11:29	Sampled
DB27	Servitude Road	23°55'22.69"S	27°23'47.77"E		21 <sup>st</sup> July 2021	11:26	Sampled
DB28	Servitude Road	23°56'29.84"S	27°23'31.71"E		21 <sup>st</sup> July 2021	11:21	Sampled
DB29	Servitude Road	23°57'11.41"S	27°23'28.14"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	11:18	Sampled
DB30	Servitude Road	23°57'58.79"S	27°23'37.97"E		21 <sup>st</sup> July 2021	11:14	Sampled
DB31	Servitude Road	23°58'36.77"S	27°23'44.50"E		21 <sup>st</sup> July 2021	11:10	Sampled
DB32	Servitude Road	23°59'45.59"S	27°23'58.25"E		21 <sup>st</sup> July 2021	11:05	Sampled
DB33	Servitude Road	24° 0'4.67"S	27°24'1.95"E		21 <sup>st</sup> July 2021	11:02	Sampled
DB34	Servitude Road	24° 0'37.82"S	27°24'8.36"E		21 <sup>st</sup> July 2021	10:58	Sampled
DB35	Servitude Road	24° 0'51.33"S	27°24'10.07"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	10:56	Sampled
DB36	Servitude Road	24° 1'3.54"S	27°24'12.35"E		21 <sup>st</sup> July 2021	10:52	Sampled
DB37	Servitude Road	24° 1'7.07"S	27°24'13.15"E		21 <sup>st</sup> July 2021	10:50	Sampled
DB38	Servitude Road	24° 1'34.37"S	27°24'18.32"E		21 <sup>st</sup> July 2021	10:47	Sampled

Document No:  
Revision:  
Date:

MON-AQR-244-20\_21 (21-06)  
0.1  
June 2021



Environmental Assurance (Pty) Ltd

Client Restricted  
Author: D Nell  
14

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB39	Servitude Road	23°41'35.31"S	27°38'51.43"E		21 <sup>st</sup> July 2021	10:43	Sampled
DB40	Servitude Road	24° 2'29.74"S	27°24'28.91"E		21 <sup>st</sup> July 2021	10:39	Sampled
DB41	Servitude Road	24° 2'40.69"S	27°24'31.20"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	10:36	Sampled
DB42	Servitude Road	24° 2'46.02"S	27°24'32.19"E		21 <sup>st</sup> July 2021	10:32	Sampled
DB43	Servitude Road	24° 3'21.38"S	27°24'37.93"E		21 <sup>st</sup> July 2021	10:28	Sampled
DB44	Servitude Road	24° 4'29.95"S	27°24'51.86"E		21 <sup>st</sup> July 2021	10:21	Sampled
DB45	Servitude Road	24° 4'53.87"S	27°24'55.26"E		21 <sup>st</sup> July 2021	10:16	Sampled
DB46	Servitude Road	24° 5'48.56"S	27°25'8.99"E		21 <sup>st</sup> July 2021	09:49	Sampled
DB47	Servitude Road	24° 6'2.39"S	27°25'12.90"E		21 <sup>st</sup> July 2021	09:46	Sampled
DB48	Servitude Road	24° 6'33.52"S	27°25'21.12"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	09:41	Sampled
DB49	Servitude Road	24° 7'11.42"S	27°25'32.63"E		21 <sup>st</sup> July 2021	09:37	Sampled
DB50	Servitude Road	24° 7'50.30"S	27°25'43.01"E		21 <sup>st</sup> July 2021	09:32	Sampled
DB51	Servitude Road	24° 8'36.82"S	27°25'56.47"E		21 <sup>st</sup> July 2021	09:28	Sampled
DB52	Servitude Road	24° 9'10.22"S	27°26'5.85"E		21 <sup>st</sup> July 2021	09:25	Sampled
DB53	Servitude Road	24° 9'23.38"S	27°26'10.00"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	09:20	Sampled
DB54	Servitude Road	24° 9'56.57"S	27°26'19.10"E		21 <sup>st</sup> July 2021	09:16	Sampled
DB55	Servitude Road	24°10'32.51"S	27°26'26.49"E		21 <sup>st</sup> July 2021	09:11	Sampled
DB56	Servitude Road	24°10'55.15"S	27°26'36.17"E		21 <sup>st</sup> July 2021	09:08	Sampled
DB57	Servitude Road	24°11'38.61"S	27°26'48.79"E		21 <sup>st</sup> July 2021	09:04	Sampled
DB58	Servitude Road	24°11'49.30"S	27°26'51.53"E		21 <sup>st</sup> July 2021	06:35	Sampled
DB59	Servitude Road	24°12'25.42"S	27°26'59.45"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	06:41	Sampled
DB60	Servitude Road	24°13'6.00"S	27°26'59.07"E		21 <sup>st</sup> July 2021	06:47	Sampled
DB61	Servitude Road	24°14'34.19"S	27°26'58.48"E		21 <sup>st</sup> July 2021	06:54	Sampled
DB62	Servitude Road	24°14'49.64"S	27°26'58.86"E		21 <sup>st</sup> July 2021	06:58	Sampled
DB63	Servitude Road	24°15'19.44"S	27°26'58.33"E		21 <sup>st</sup> July 2021	07:03	Sampled

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		15

GBN-JV Air Quality Monitoring							
Locality ID	Description	Co-ordinates		Sampler Name	Sampling Date	Sampling Time	Comments
		Latitude	Longitude				
DB64	Servitude Road	24°16'6.23"S	27°26'58.26"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	07:07	Sampled
DB65	Servitude Road	24°16'42.57"S	27°26'57.57"E		21 <sup>st</sup> July 2021	07:17	Sampled
DB66	Servitude Road	24°17'26.82"S	27°26'56.01"E		21 <sup>st</sup> July 2021	07:22	Sampled
DB67	Servitude Road	24°18'14.46"S	27°26'56.97"E		21 <sup>st</sup> July 2021	07:28	Sampled
DB68	Servitude Road	24°18'49.52"S	27°26'57.63"E		21 <sup>st</sup> July 2021	07:32	Sampled
DB69	Servitude Road	24°19'31.03"S	27°26'56.52"E		21 <sup>st</sup> July 2021	07:39	Sampled
DB70	Servitude Road	24°20'4.26"S	27°26'56.14"E		21 <sup>st</sup> July 2021	07:45	Sampled
DB71	Servitude Road	24°20'45.70"S	27°26'55.87"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	07:51	Sampled
DB72	Servitude Road	24°21'48.85"S	27°26'55.81"E		21 <sup>st</sup> July 2021	08:00	Sampled
DB73	Servitude Road	24°23'9.52"S	27°26'54.85"E		21 <sup>st</sup> July 2021	08:05	Sampled
DB74	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'21.10"S	27°26'33.71"E		21 <sup>st</sup> July 2021	08:13	Sampled
DB75	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'31.60"S	27°26'13.03"E		21 <sup>st</sup> July 2021	08:17	Sampled
DB76	Between Tarentaalpan 132 KQ portion 2 and Diepkuil 135 Portion 5	24°23'53.46"S	27°25'19.77"E		21 <sup>st</sup> July 2021	08:22	Sampled
DB77	Along the R510	24°24'24.61"S	27°24'3.45"E	Damon Nell/ Enock Machete	21 <sup>st</sup> July 2021	08:29	Sampled
DB78	Along the R510	23°41'35.31"S	27°38'51.43"E		21 <sup>st</sup> July 2021	08:32	Sampled
DB79	Along the R510	24°25'29.93"S	27°24'23.06"E		19 <sup>th</sup> July 2021	09:29	Sampled
DB80	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°25'33.45"S	27°24'13.50"E		19 <sup>th</sup> July 2021	09:25	Sampled
DB81	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°25'47.88"S	27°23'10.20"E		19 <sup>th</sup> July 2021	09:20	Sampled
DB82	Between Buffelsvley 127 KQ and Karoobult 126 KQ	24°26'31.14"S	27°21'39.92"E		19 <sup>th</sup> July 2021	08:34	Sampled
DB83	Between Buffelsvley 127 KQ and Karoobult 126 KQ	24°27'9.88"S	27°20'11.67"E	Damon Nell/ Enock Machete	19 <sup>th</sup> July 2021	08:26	Sampled
DB84	Paarl 124 KQ Portion 6	24°28'20.86"S	27°17'27.36"E		19 <sup>th</sup> July 2021	15:09	Sampled

Document No:  
Revision:  
Date:

MON-AQR-244-20\_21 (21-06)  
0.1  
June 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				
DB85	Paarl 124 KQ Portion 3	24°30'0.19"S	27°16'58.48"E		19 <sup>th</sup> July 2021	15:01	Sampled
DB86	D769 dirt road	24°31'38.11"S	27°16'29.83"E		19 <sup>th</sup> July 2021	11:18	Sampled
DB87	D769 dirt road	24°33'53.16"S	27°18'16.95"E		19 <sup>th</sup> July 2021	11:08	Sampled
DB88	Within small community near Stratford 462 KQ	24°34'14.79"S	27°18'36.10"E		19 <sup>th</sup> July 2021	14:29	Sampled
DB89	Near Primary School	24°34'24.25"S	27°18'35.18"E	Damon Nell/ Enock Machete	19 <sup>th</sup> July 2021	14:25	Sampled
DB90	Mooivallei 342 KQ – Portion 1	24°35'35.70"S	27°17'45.31"E		19 <sup>th</sup> July 2021	10:27	Sampled
DB91	Mooivallei 342 KQ – Portion 2	24°35'59.20"S	27°17'38.40"E		22 <sup>nd</sup> July 2021	08:30	Sampled
DB92	Mooivallei 342 KQ – Portion 4	24°36'25.02"S	27°17'49.23"E		19 <sup>th</sup> July 2021	13:26	Sampled
DB93	Mooivallei 342 KQ – Portion 7	24°36'51.37"S	27°18'27.13"E		19 <sup>th</sup> July 2021	13:16	Sampled
DB94	Mooivallei 342 KQ – Portion 9	24°37'18.10"S	27°18'45.97"E		19 <sup>th</sup> July 2021	13:12	Sampled
DB95	D729 dirt road	24°38'3.48"S	27°18'54.13"E	Damon Nell/ Enock Machete	19 <sup>th</sup> July 2021	06:40	Sampled
DB96	Along unnamed dirt road bordering Exxaro mine	23°41'25.22"S	27°34'18.42"E		20 <sup>th</sup> July 2021	14:25	Sampled
DB97	Between Zondagsuil 137 KQ and Diepkuil 135 KQ portion 1	24°26'15.46"S	27°22'29.41"E		19 <sup>th</sup> July 2021	08:40	Sampled
DB98	Buffelsvley 127 KQ	24°26'48.84"S	27°18'57.38"E		19 <sup>th</sup> July 2021	08:18	Sampled
DB99	D769 dirt road	24°32'48.86"S	27°17'24.55"E		19 <sup>th</sup> July 2021	11:14	Sampled
DB100	Mooivallei 342 KQ – Portion 1	24°35'5.76"S	27°18'49.94"E		19 <sup>th</sup> July 2021	10:33	Sampled

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		17



## 7.2. PARTICULATE MATTER RESULTS

Particulate matter will be measured at the three (3) stationed Met One E-Samplers and compared to the SANS 1929:2011 24-hour limit of 75 mg/m<sup>3</sup> for both PM<sub>10</sub> to determine compliance. Two (2) E-samplers were installed during the June 2021 monitoring period. One (1) E-sampler could not be installed during the monitoring period due to access restrictions and time constraints, it will however be installed during the August 2021 monitoring period.

## 7.3. GRAVIMETRIC DUST FALLOUT RESULTS

The June 2021 monitoring period occurred between the 1<sup>st</sup> of June to the 22<sup>nd</sup> of July 2021. During the June to July 2021 monthly monitoring period, ninety-six (96) out of the 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/m<sup>2</sup>/day were recorded at sample localities DB86 and DB99, while the Industrial Limit of 1200 mg/m<sup>2</sup>/day was exceeded at DB87 and DB99 monitoring localities. The highest value was recorded at the DB87 monitoring point during the May to June 2021 monitoring period, measuring at 1921 mg/m<sup>2</sup>/day. The monthly median was calculated at 238 mg/m<sup>2</sup>/day, well below the residential limit. All sample localities which recorded exceedances during the monitoring period were situated near the D769 and D727 dirt road. No major activities were recorded at the proposed pipeline area, with minimal air pollution. It should be noted that during the May to June 2021 monitoring period, the dust bucket of sample locality DB75 was recorded as being stolen from the dust stand and therefore no data was obtained.

Gravimetric 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/m<sup>2</sup>/day and thus can be classified as Ideal namely:

- Ninety-three (93) 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/m<sup>2</sup>/day and 1200 mg/m<sup>2</sup>/day. This category can be classified as Acceptable to Tolerable.

- Two (2) of the monitoring points (DB 86 and DB 99) fell into this category during the monitoring period.

The third category consists of monitoring points with gravimetric dust fallout between 1200 mg/m<sup>2</sup>/day and 2400 mg/m<sup>2</sup>/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.

- One (1) of the monitoring points (DB 87) fell into this category during the monitoring period.

The fourth category consists of monitoring points exceeding dust fallout of 2400 mg/m<sup>2</sup>/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.

Document No:	MON-AQR-244-20_21 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		18

Table 6: Gravimetric Dust Fallout Results

GBN-JV Air Quality Results				
Gravimetric Dust Fallout (mg/m <sup>2</sup> /day)				
Location	Apr-21 to May-21	May-21 to Jun-21	Jun to Jul-21	Average
DB - 1	21	5	86	37
DB - 2	170	297	543	337
DB - 3	27	126	190	114
DB - 4	75	137	Stolen	106
DB - 5	127	107	365	200
DB - 6	41	137	200	126
DB - 7	134	98	198	143
DB - 8	61	10	135	69
DB - 9	91	9	140	80
DB - 10	46	126	128	100
DB - 11	Tampered With	161	55	108
DB - 12	Not Installed	Not Installed	Stand Installed	-
DB - 13	Not Installed	Not Installed	Stand Installed	-
DB - 14	Not Installed	Not Installed	Stand Installed	-
DB - 15	6	277	47	110
DB - 16	10	281	27	106
DB - 17	11	88	15	38
DB - 18	39	331	61	144
DB - 19	5	273	22	100
DB - 20	14	290	99	134
DB - 21	12	305	103	140
DB - 22	14	155	104	91
DB - 23	2	300	106	136
DB - 24	11	392	149	184
DB - 25	7	476	95	193
DB - 26	4	324	33	120
DB - 27	14	457	107	193
DB - 28	18	301	29	116
DB - 29	4	337	6	116
DB - 30	92	338	36	155
DB - 31	13	488	88	196
DB - 32	244	335	165	248
DB - 33	10	479	103	197
DB - 34	13	18	3	11

## GBN-JV Air Quality Results

### Gravimetric Dust Fallout (mg/m<sup>2</sup>/day)

Location	Apr-21 to May-21	May-21 to Jun-21	Jun to Jul-21	Average
DB - 35	11	7	39	19
DB - 36	2	18	28	16
DB - 37	8	8	12	9
DB - 38	8	104	26	46
DB - 39	5	92	19	39
DB - 40	3	18	17	13
DB - 41	3	101	11	38
DB - 42	10	248	13	90
DB - 43	9	91	13	38
DB - 44	7	98	13	39
DB - 45	14	86	4	35
DB - 46	7	238	18	88
DB - 47	6	245	21	91
DB - 48	15	240	4	86
DB - 49	3	277	10	97
DB - 50	1	80	20	34
DB - 51	1	268	16	95
DB - 52	42	111	23	59
DB - 53	11	289	24	108
DB - 54	13	78	52	48
DB - 55	8	247	6	87
DB - 56	8	282	30	107
DB - 57	6	258	95	120
DB - 58	3	309	70	127
DB - 59	1	15	114	43
DB - 60	6	19	113	46
DB - 61	5	244	185	145
DB - 62	10	73	2	28
DB - 63	4	269	9	94
DB - 64	11	158	4	58
DB - 65	13	98	13	41
DB - 66	168	237	9	138
DB - 67	14	267	14	98
DB - 68	10	267	23	100
DB - 69	6	295	33	111

## GBN-JV Air Quality Results

### Gravimetric Dust Fallout (mg/m<sup>2</sup>/day)

Location	Apr-21 to May-21	May-21 to Jun-21	Jun to Jul-21	Average
DB - 70	85	159	76	107
DB - 71	13	294	13	107
DB - 72	13	195	39	82
DB - 73	48	261	17	109
DB - 74	3	285	56	115
DB - 75	39	16	104	53
DB - 76	16	216	87	106
DB - 77	39	192	123	118
DB - 78	13	191	26	77
DB - 79	133	141	11	95
DB - 80	279	186	250	238
DB - 81	42	279	100	140
DB - 82	12	184	43	80
DB - 83	46	344	48	146
DB - 84	2	148	73	74
DB - 85	15	417	78	170
DB - 86	886	704	883	824
DB - 87	2167	1921	1472	1853
DB - 88	969	262	71	434
DB - 89	119	183	102	135
DB - 90	40	81	5	42
DB - 91	78	265	85	143
DB - 92	315	272	438	342
DB - 93	45	322	6	124
DB - 94	48	158	23	76
DB - 95	142	1057	370	523
DB - 96	Installed	114	54	84
DB - 97	47	166	155	123
DB - 98	34	7	15	19
DB - 99	1085	1336	1059	1160
DB - 100	138	257	49	148
3 Month Average	92	169	149	Total Average for all
Residential Limit	600	600	600	points for 12 months:
Industrial Limit	1200	1200	1200	149

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

Table 7: PM meter results

GBN-JV PM Data						
Locality Name	Month	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>4</sub>	PM <sub>10</sub>	TSP
SANS Limits					75	
DB - 1	Jun-21 to Jul-21	1,2	13,3	20,7	72,4	154,4
DB - 2	Jun-21 to Jul-21	1,9	26,4	37,7	96,6	138,5
DB - 3	Jun-21 to Jul-21	1	11,1	23,4	146,5	332
DB - 4	Jun-21 to Jul-21	1,1	3,9	28,4	255,5	710,4
DB - 5	Jun-21 to Jul-21	4,2	71,2	92,8	203,3	300,7
DB - 6	Jun-21 to Jul-21	0,6	2,8	8,7	41,2	54,2
DB - 7	Jun-21 to Jul-21	0,6	2,9	5,5	12,1	14,6
DB - 8	Jun-21 to Jul-21	0,7	5,5	13,5	62,9	107,8
DB - 9	Jun-21 to Jul-21	0,6	2,1	4,6	12	14,4
DB - 10	Jun-21 to Jul-21	0,7	5,4	11	49,1	79,3
DB - 11	Jun-21 to Jul-21	2,2	23	35,5	79,4	98,5
DB - 12	Jun-21 to Jul-21	-	-	-	-	-
DB - 13	Jun-21 to Jul-21	59,1	1260,1	3339,3	11149,6	15194,7
DB - 14	Jun-21 to Jul-21	1,1	5,9	33,9	227,7	359
DB - 15	Jun-21 to Jul-21	1,8	21	47,6	160,9	220,7
DB - 16	Jun-21 to Jul-21	0,9	7,3	21,4	120,4	233,8
DB - 17	Jun-21 to Jul-21	102,3	0,7	1,2	6,7	46,2
DB - 18	Jun-21 to Jul-21	1,4	20,2	35	124,7	187,5
DB - 19	Jun-21 to Jul-21	0,9	11	19,8	75,6	142,1
DB - 20	Jun-21 to Jul-21	0,7	5,6	14	68,3	155,2
DB - 21	Jun-21 to Jul-21	0,7	4,1	8,5	30,2	41,9
DB - 22	Jun-21 to Jul-21	0,7	2,6	12	75,6	135,4
DB - 23	Jun-21 to Jul-21	0,6	0,7	7,6	82,4	206,9
DB - 24	Jun-21 to Jul-21	4,5	85,7	126,6	321,7	410,4
DB - 25	Jun-21 to Jul-21	0,8	2,4	10,6	93,2	219
DB - 26	Jun-21 to Jul-21	0,8	3,3	7,1	18,3	24,4
DB - 27	Jun-21 to Jul-21	0,8	5,1	8,6	20,3	25,9
DB - 28	Jun-21 to Jul-21	0,8	5,7	9,4	28,1	49,1
DB - 29	Jun-21 to Jul-21	0,7	2	9,3	44,3	78,2
DB - 30	Jun-21 to Jul-21	1,8	31,4	37	63,2	79,8

GBN-JV PM Data						
Locality Name	Month	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>4</sub>	PM <sub>10</sub>	TSP
SANS Limits					75	
DB - 31	Jun-21 to Jul-21	0,7	4,5	8,7	25,1	32,5
DB - 32	Jun-21 to Jul-21	0,7	1,8	7,5	34,6	67,3
DB - 33	Jun-21 to Jul-21	0,7	2,2	8,6	89	225,8
DB - 34	Jun-21 to Jul-21	0,7	2,2	7,2	39,5	90,7
DB - 35	Jun-21 to Jul-21	0,7	2,7	8,4	64,5	163,7
DB - 36	Jun-21 to Jul-21	0,8	5,8	10,8	35,7	53,5
DB - 37	Jun-21 to Jul-21	0,7	6,3	16,3	66,3	107,6
DB - 38	Jun-21 to Jul-21	0,7	3,6	8,3	31,7	64,4
DB - 39	Jun-21 to Jul-21	1,3	11,5	19,6	69,9	130,9
DB - 40	Jun-21 to Jul-21	1,4	18	27,4	95,2	170,4
DB - 41	Jun-21 to Jul-21	0,8	3,1	7,6	27,8	53,1
DB - 42	Jun-21 to Jul-21	1	9,4	15	46,8	83,1
DB - 43	Jun-21 to Jul-21	0,8	4,4	12,8	69,9	1495
DB - 44	Jun-21 to Jul-21	0,8	4,3	12,6	47,7	71,7
DB - 45	Jun-21 to Jul-21	0,7	4	11,6	37,7	56,2
DB - 46	Jun-21 to Jul-21	2,2	48,1	64,8	145,5	212,6
DB - 47	Jun-21 to Jul-21	0,8	6,6	11,9	33,2	44,9
DB - 48	Jun-21 to Jul-21	1	21	30,4	71,9	107
DB - 49	Jun-21 to Jul-21	0,8	9,6	14,4	31,2	39,8
DB - 50	Jun-21 to Jul-21	2,2	46,3	63,7	141,3	223,9
DB - 51	Jun-21 to Jul-21	0,8	6,7	17	62,9	93,7
DB - 52	Jun-21 to Jul-21	0,8	8,1	12,9	49,1	102,1
DB - 53	Jun-21 to Jul-21	0,6	3,3	7,4	20,2	30,1
DB - 54	Jun-21 to Jul-21	0,6	0,6	8,9	100	190,6
DB - 55	Jun-21 to Jul-21	0,9	8,9	19,5	70,5	101,3
DB - 56	Jun-21 to Jul-21	6,5	181,4	207,4	306,7	349,2
DB - 57	Jun-21 to Jul-21	0,7	4	12,3	42	64,2
DB - 58	Jun-21 to Jul-21	3,1	67,5	133,1	311,6	388,7
DB - 59	Jun-21 to Jul-21	0,9	10,9	28,3	103	157,3
DB - 60	Jun-21 to Jul-21	0,5	2,2	9,6	35	48,6
DB - 61	Jun-21 to Jul-21	1,9	41,2	66,7	214,7	360,8
DB - 62	Jun-21 to Jul-21	4,9	135	170,2	270,7	324,9
DB - 63	Jun-21 to Jul-21	1,3	28,2	48,1	120,5	166,8
DB - 64	Jun-21 to Jul-21	0,6	2,1	7,9	29,7	45,7
DB - 65	Jun-21 to Jul-21	1,3	22,1	42,5	124,9	155,7
DB - 66	Jun-21 to Jul-21	2,6	66,4	150,8	520,2	746,4
DB - 67	Jun-21 to Jul-21	0,6	3,2	13,8	57,5	82,2
DB - 68	Jun-21 to Jul-21	1,7	27,6	137,1	731,4	936,6

GBN-JV PM Data						
Locality Name	Month	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>4</sub>	PM <sub>10</sub>	TSP
SANS Limits					75	
DB - 69	Jun-21 to Jul-21	0,4	2,5	6,7	25	32,3
DB - 70	Jun-21 to Jul-21	0,7	4,7	28,9	151,9	212,9
DB - 71	Jun-21 to Jul-21	1,6	31,1	73,5	356,3	641,1
DB - 72	Jun-21 to Jul-21	5,6	184	262,8	688,4	966,4
DB - 73	Jun-21 to Jul-21	4,1	46,7	228,6	1007,2	1384,4
DB - 74	Jun-21 to Jul-21	0,5	2,5	12,3	111,9	188,3
DB - 75	Jun-21 to Jul-21	0,5	1,5	11,4	46,3	70,3
DB - 76	Jun-21 to Jul-21	5,4	83,9	95	122,7	136,8
DB - 77	Jun-21 to Jul-21	4,4	94	165,9	421,4	544,1
DB - 78	Jun-21 to Jul-21	3,6	89,8	124,1	280,1	412
DB - 79	Jun-21 to Jul-21	2,5	27,8	34,3	54,9	65,4
DB - 80	Jun-21 to Jul-21	1,9	10,8	17	33,2	40
DB - 81	Jun-21 to Jul-21	1,4	5,1	18,1	54	64,5
DB - 82	Jun-21 to Jul-21	2	16,7	26,5	56,2	66,7
DB - 83	Jun-21 to Jul-21	1,7	8	13,2	29,7	39
DB - 84	Jun-21 to Jul-21	1,7	8,1	21,9	78,2	98,5
DB - 85	Jun-21 to Jul-21	1,5	5,3	15,8	55,5	84,4
DB - 86	Jun-21 to Jul-21	5,8	52,3	82	156,2	175,3
DB - 87	Jun-21 to Jul-21	2,3	2,3	2,3	785	1254
DB - 88	Jun-21 to Jul-21	1,5	1,5	24,5	160,6	201,9
DB - 89	Jun-21 to Jul-21	1,6	3,9	15,2	92,4	146,7
DB - 90	Jun-21 to Jul-21	80,8	2,3	14,7	24,2	59,8
DB - 91	Jun-21 to Jul-21	1,4	2,5	13,8	48	100
DB - 92	Jun-21 to Jul-21	2,6	37,2	60	137	167,2
DB - 93	Jun-21 to Jul-21	12,9	187,7	215	292,4	334,3
DB - 94	Jun-21 to Jul-21	2,1	15,3	36,1	169,7	322,5
DB - 95	Jun-21 to Jul-21	20,2	238,6	788,7	2424	2965,8
DB - 96	Jun-21 to Jul-21	5,6	74,6	90	145,2	180,3
DB - 97	Jun-21 to Jul-21	1,8	10,9	22,5	68,7	102,6
DB - 98	Jun-21 to Jul-21	1,5	7,2	17,2	48,2	63,6
DB - 99	Jun-21 to Jul-21	7	117,8	145	258,9	324,9
DB - 100	Jun-21 to Jul-21	2,2	10,1	18,6	46,7	57,8
Average		4,38	39,03	82,76	268,16	395,53

## 7.4. WEATHER DATA

The possibility of emissions becoming a nuisance is determined by various factors. Specifically, PM<sub>10</sub> (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 8 & 9 and Figure 6 & 7, it is clear that from the average dominating wind direction was from a West-Southwest and to a lesser extent from the north. Moreover, average wind speeds presented a light air to light breeze (0.4 – 2.7 m/s) during the monitoring period.

Table 8: Wind Direction

Wind Direction: June to July 2021	
Direction	Direction Frequency
North	32
NNE	18
NE	23
ENE	26
East	17
ESE	13
SE	5
SSE	3
South	14
SSW	7
SW	16
WSW	35
West	27
WNW	9
NW	12
NNW	11



Table 9: Average Wind Speeds

Average Wind Speeds: June 2021	
Day of Month	Wind Speed (m/s)
1	2.7
2	1.2
3	2.0
4	1.9
5	1.5
6	1.4
7	1.0
8	1.0
9	1.1
10	1.1
11	0.9
12	1.0
13	1.3
14	1.0
15	1.0
16	1.3
17	0.8
18	1.1
19	0.9
20	0.8
21	0.6
22	1.0
23	0.9
24	0.8
25	0.6
26	1.6
27	0.8
28	1.1
29	1.6
30	1.0

Average Wind Speeds: July 2021	
Day of Month	Wind Speed (m/s)
1	1.3
2	0.9
3	0.9
4	0.4
5	1.5
6	1.3
7	0.6
8	1.1
9	0.6
10	0.9
11	0.9
12	1.1
13	2.5
14	1.0
15	1.3
16	0.6
17	0.9
18	1.9
19	1.3
20	1.0
21	1.8
22	2.0
Max	2.7
Min	0.4

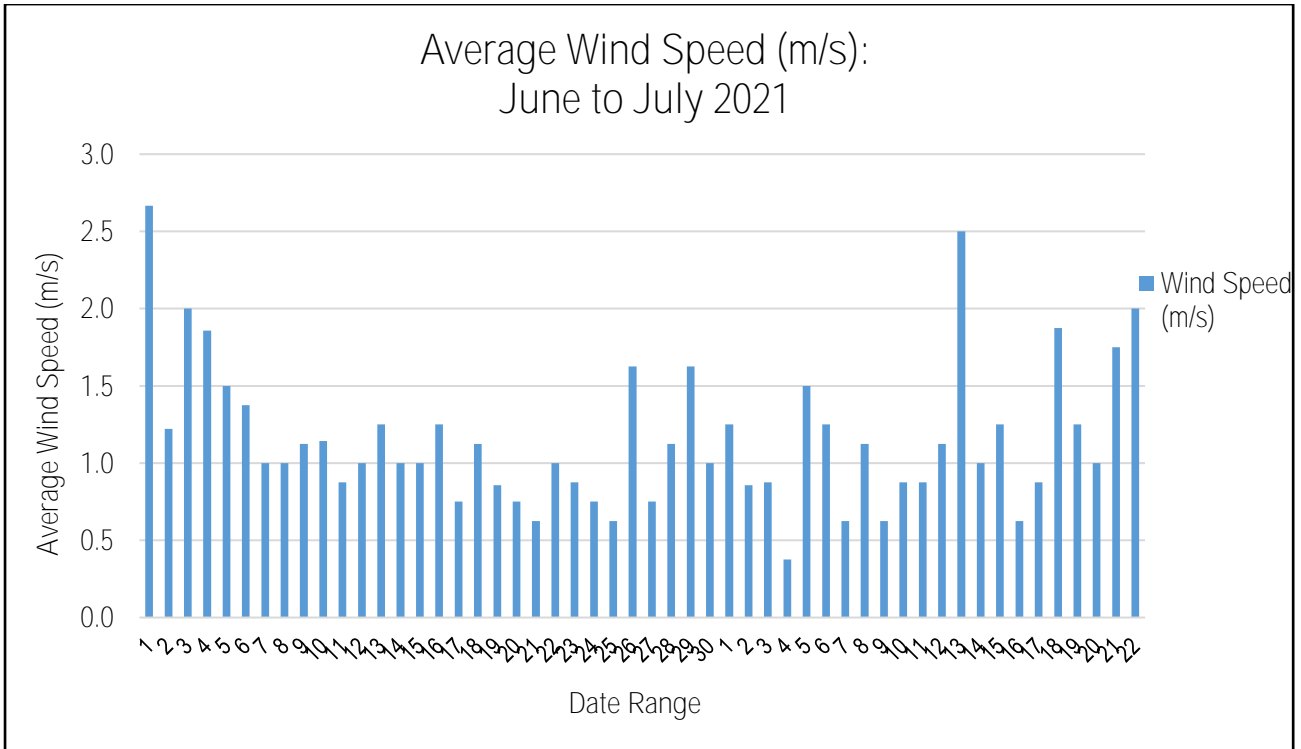


Figure 5: Wind Direction Frequency Average

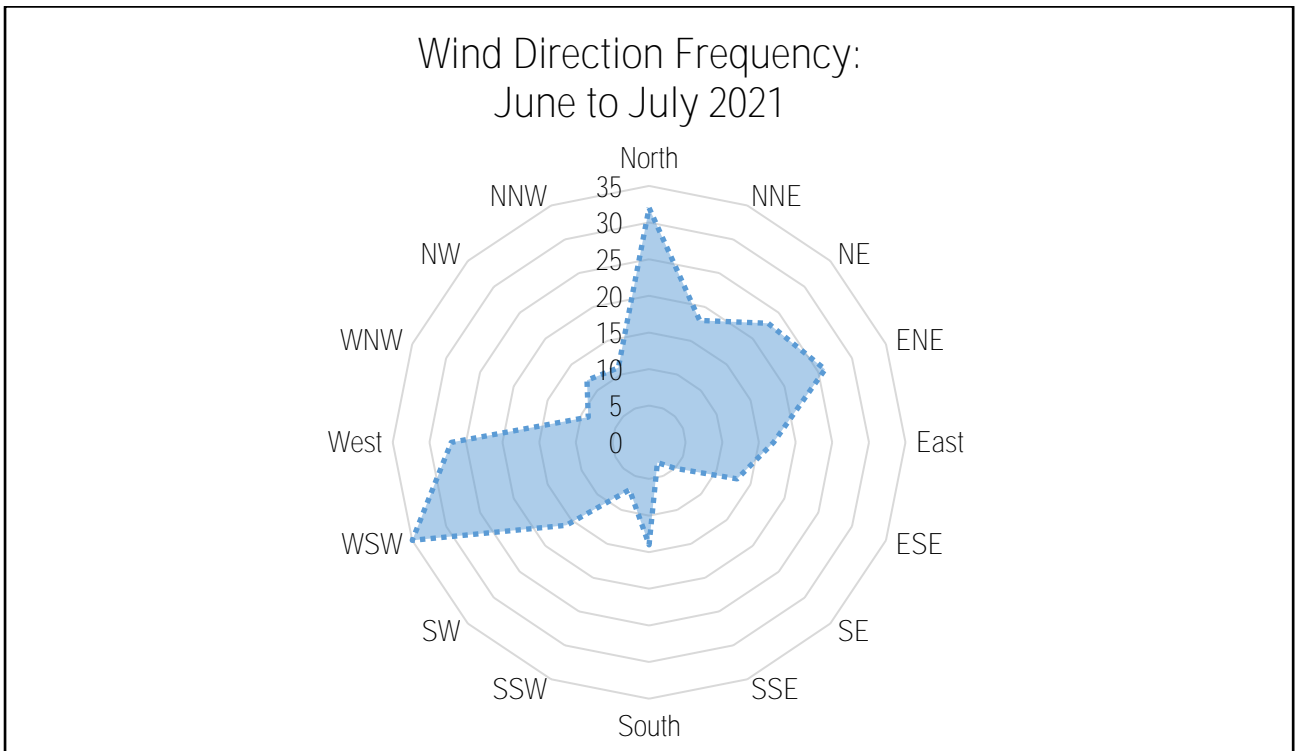


Figure 6: Windrose Diagram

Table 10: 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 11: Rainfall

Rainfall Summary: May to June 2021	
Day of Month	Rainfall (mm)
19-June-21	1.2
20-June-21	1.2
25-June-21	0.6
26-June-21	1.2
28-June-21	0.4
29-June-21	1.6
30-June-21	3.6
1-July-21	3.0
2-July-21	2.0
8-July-21	0.8
9-July-21	0.8
12-July-21	1.6
13-July-21	1.6
14-July-21	2.0
15-July-21	2.0
16-July-21	1.2
17-July-21	1.2
18-July-21	0.2
19-July-21	0.4
Total	26.6

*\*Rainfall was not recorded on the omitted days*

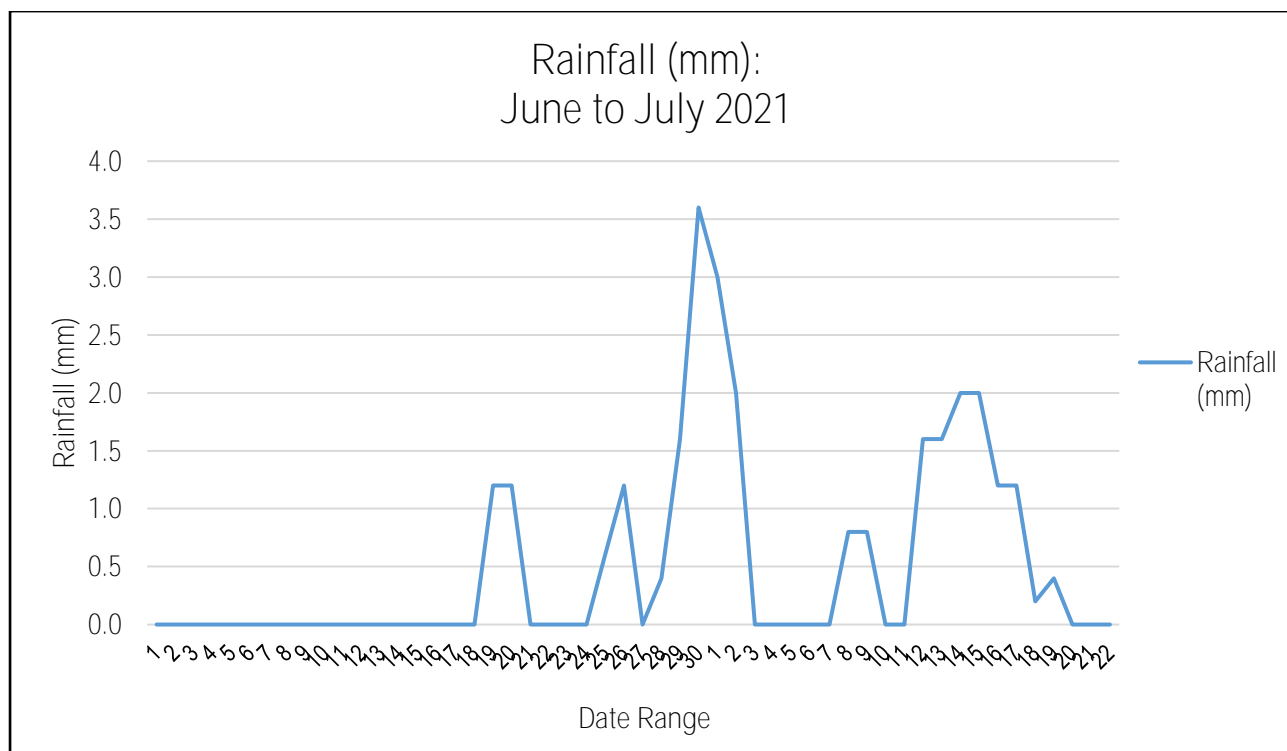


Figure 7: Rainfall for monitoring period

## 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.
<b>Aspect: Operating vehicle/machinery and sustainable travel</b>	
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.
<b>Aspect: Operations</b>	
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.
<b>Waste management</b>	
20	Only use registered waste carriers to take waste off-site.
<b>Measures specific to earthworks</b>	
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.
<b>Aspect: Measures specific to construction</b>	
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.
<b>Aspect: Measures specific to track-out</b>	
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"> <li>Spray areas to be cleared with water.</li> <li>Ensure minimum travel distance between working areas and stockpiles.</li> <li>Ensure that topsoil for stockpiles is sprayed with water before tipping to prevent dust generation.</li> </ul>	Environmental Site Officer  Contractors & Sub-Contractor Safety and Environmental Officers	Duration of the construction phase
Land clearing			
Excavation			
Material Transport			
Material Handling			
Construction	<ul style="list-style-type: none"> <li>Ensure graded areas are sprayed with water.</li> <li>Minimise the amount of graded areas.</li> <li>Ensure that shortest routes are used for material transport.</li> <li>Load and offload material, as far as possible, downwind of stockpiles.</li> <li>Actively monitor dust fallout generated on the borders of the site.</li> <li>Implement monthly site inspection to check for possible areas of dust generation not addressed or not effectively managed.</li> </ul>		

## 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		35

## APPENDIX A – EQUIPMENT CHECKLIST

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

## APPENDIX B – ENVASS CHAIN OF CUSTODY (COC) FORM

GBN-JV 2A-C-B.9 Air Monitoring				
No	Sample ID	Sample Date	Sample Time	Comment
1	DB01	20-7-21	16:10	TSR=153.4
2	DB02	20-7-21	16:10	TSR=153.4
3	DB03	20-7-21	16:10	TSR=153.4
4	DB04	20-7-21	16:10	TSR=153.4
5	DB05	20-7-21	16:10	TSR=153.4
6	DB06	20-7-21	16:10	TSR=153.4
7	DB07	20-7-21	16:10	TSR=153.4
8	DB08	20-7-21	16:10	TSR=153.4
9	DB09	20-7-21	16:10	TSR=153.4
10	DB10	20-7-21	16:10	TSR=153.4
11	DB11	20-7-21	16:10	TSR=153.4
12	DB12	20-7-21	16:10	TSR=153.4
13	DB13 (New 1)	19/07/2021	06:44	TSR=153.4
14	DB14 (New 2)	20-7-21	16:10	TSR=153.4
15	DB15	20-7-21	16:10	TSR=153.4
16	DB16	20-7-21	16:10	TSR=153.4
17	DB17	20-7-21	16:10	TSR=153.4
18	DB18	20-7-21	16:10	TSR=153.4
19	DB19	20-7-21	16:10	TSR=153.4
20	DB20	20-7-21	16:10	TSR=153.4
21	DB21	20-7-21	16:10	TSR=153.4
22	DB22	20-7-21	16:10	TSR=153.4
23	DB23	20-7-21	16:10	TSR=153.4
24	DB24	20-7-21	16:10	TSR=153.4
25	DB25	20-7-21	16:10	TSR=153.4
26	DB26	20-7-21	16:10	TSR=153.4
27	DB27	20-7-21	16:10	TSR=153.4
28	DB28	20-7-21	16:10	TSR=153.4
29	DB29	20-7-21	16:10	TSR=153.4
30	DB30	20-7-21	16:10	TSR=153.4
31	DB31	20-7-21	16:10	TSR=153.4
32	DB32	20-7-21	16:10	TSR=153.4
33	DB33	20-7-21	16:10	TSR=153.4
34	DB34	20-7-21	16:10	TSR=153.4
35	DB35	20-7-21	16:10	TSR=153.4
36	DB36	20-7-21	16:10	TSR=153.4
37	DB37	20-7-21	16:10	TSR=153.4
38	DB38	20-7-21	16:10	TSR=153.4
39	DB39	20-7-21	16:10	TSR=153.4
40	DB40	20-7-21	16:10	TSR=153.4
41	DB41	20-7-21	16:10	TSR=153.4
42	DB42	20-7-21	16:10	TSR=153.4
43	DB43	20-7-21	16:10	TSR=153.4
44	DB44	20-7-21	16:10	TSR=153.4

45	DB45	21.7.10:16/Y/TSP=36.2	P1=2.7 P2=4.0 P3=11.5 P4=37.7
46	DB46	21.7.9:49/Y/TSP=211.6	P1=2.2 P2=12.1 P3=145.5 P4=12.9
47	DB47	21.7.9:46/Y/TSP=44.9	P1=2.5 P2=6.6 P3=33.2 P4=20.4
48	DB48	21.7.9:46/Y/TSP=107.8	P1=1.0 P2=21.0 P3=71.4 P4=14.4
49	DB49	21.7.21:9:57/Y/TSP=39.8	P1=2.2 P2=9.6 P3=31.2 P4=21.2
50	DB50	21.7.21:9:32/Y/TSP=223.7	P1=2.2 P2=16.3 P3=141.8 P4=19.6
51	DB51	21.7.21:9:28/Y/TSP=93.7	P1=0.8 P2=16.2 P3=62.4 P4=12.4
52	DB52	21.7.21:9:14/Y/TSP=102.1	P1=2.2 P2=3.1 P3=49.1 P4=7.6
53	DB53	21.7.21:9:20/Y/TSP=30.1	P1=0.6 P2=3.3 P3=20.6 P4=8.4
54	DB54	21.7.21:9:16/Y/TSP=19.6	P1=0.6 P2=0.6 P3=100 P4=14.5
55	DB55	21.7.21:9:8/Y/TSP=104.3	P1=0.4 P2=5.4 P3=70.5 P4=207.4
56	DB56	21.7.21:9:7/Y/TSP=348.2	P1=6.5 P2=181.4 P3=206.7 P4=12.3
57	DB57	21.7.21:9:7/Y/TSP=66.2	P1=0.7 P2=4.0 P3=42.8 P4=12.3
58	DB58	21.7.21:9:7/Y/TSP=328.7	P1=3.1 P2=67.8 P3=311.6 P4=28.3
59	DB59	21.7.21:6:41/Y/TSP=157.3	P1=10.9 P2=10.9 P3=103.0 P4=14.6
60	DB60	21.7.21:6:47/Y/TSP=48.6	P1=0.3 P2=2.2 P3=35.0 P4=214.7
61	DB61	21.7.21:6:54/Y/TSP=360.8	P1=1.4 P2=91.2 P3=214.7 P4=170.2
62	DB62	21.7.21:6:58/Y/TSP=524.7	P1=6.4 P2=135 P3=230.7 P4=68.1
63	DB63	21.7.21:7:03/Y/TSP=116.8	P1=1.3 P2=22.2 P3=120.2 P4=7.4
64	DB64	21.7.21:7:08/Y/TSP=45.7	P1=2.1 P2=2.1 P3=24.7 P4=42.8
65	DB65	21.7.21:7:17/Y/TSP=156.7	P1=1.3 P2=22.1 P3=124.7 P4=180.8
66	DB66	21.7.21:7:24/Y/TSP=74.6	P1=2.6 P2=64.4 P3=202.2 P4=13.2
67	DB67	21.7.21:7:28/Y/TSP=22.2	P1=0.3 P2=3.2 P3=81.5 P4=137.1
68	DB68	21.7.21:7:34/Y/TSP=136.6	P1=1.4 P2=27.6 P3=251.4 P4=3006.7
69	DB69	21.7.21:7:38/Y/TSP=32.5	P1=0.4 P2=2.8 P3=2.5 P4=24.7
70	DB70	21.7.21:7:43/Y/TSP=112.9	P1=0.7 P2=4.7 P3=167.4 P4=73.8
71	DB71	21.7.21:7:51/Y/TSP=441.1	P1=1.6 P2=31.1 P3=285.3 P4=241.6
72	DB72	21.7.21:8:00/Y/TSP=116.6	P1=8.4 P2=214 P3=68.4 P4=228.4
73	DB73	21.7.21:8:05/Y/TSP=138.4	P1=0.1 P2=6.7 P3=100.2 P4=18.8
74	DB74	21.7.21:8:13/Y/TSP=128.3	P1=0.8 P2=3.5 P3=111.9 P4=11.4
75	DB75	21.7.21:8:17/Y/TSP=70.3	P1=0.8 P2=1.3 P3=46.3 P4=48.0
76	DB76	21.7.21:8:24/Y/TSP=136.3	P1=8.9 P2=23.7 P3=132.7 P4=121.4
77	DB77	21.7.21:8:29/Y/TSP=346.1	P1=4.2 P2=113.7 P3=249 P4=14.1
78	DB78	21.7.21:8:32/Y/TSP=412.0	P1=3.4 P2=29.8 P3=280.1 P4=24.3
79	DB79	19-07 09:19/Y/TSP=64	P1=2.3 P2=27.3 P3=54.4 P4=17.0
80	DB80	19-07 09:25/Y/TSP=	P1=1.4 P2=10.8 P3=35.2 P4=17.0
81	DB81	19-07 9:20	P1=1.4 P2=5.1 P3=54 P4=12.0
82	DB82	19-07 8:34	P1=1.7 P2=16.7 P3=53.2 P4=24.7
83	DB83	19-07 8:26	P1=1.7 P2=15.2 P3=31 P4=21.4
84	DB84	19-07 10:09/Y/TSP=75.5	P1=1.3 P2=8.1 P3=78.2 P4=1.3
85	DB85	19-07 15:01/Y/TSP=84.4	P1=1.3 P2=8.8 P3=53.3 P4=10.8
86	DB85	19-07 11:18/Y/TSP=105.5	P1=1.3 P2=8.8 P3=105.3 P4=10.8
87	DB87	19-07 11:08/Y/TSP=125.6	P1=1.3 P2=8.8 P3=125.6 P4=10.8
88	DB88	19-07 14:29/Y/TSP=201.4	P1=1.3 P2=1.8 P3=150.6 P4=10.8
89	DB89	19/07/2021 14:25/Y/TSP=146.7	P1=1.3 P2=3.9 P3=146.7 P4=10.8
90	DB90	19-07 10:27/Y/TSP=80.3	P1=1.3 P2=3.9 P3=80.3 P4=10.8

91	DB91	22/07/2021	15:41	Y	
92	DB92	19/07/2021	13:26	Y	TSP=167.2 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
93	DB93	19/07/2021	13:16	Y	TSP=536.3 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
94	DB94	19/07/2021	13:12	Y	TSP=321.5 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
95	DB95	19/07/2021	06:40	O	TSP=100.3 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
96	DB96	20/07/2021	14:25	T	TSP=100.3 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
97	DB97	19/07/2021	08:40	Y	TSP=100.3 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
98	DB98	19/07/2021	08:19	Y	TSP=100.3 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
99	DB99	19/07/2021	11:46	Y	TSP=326.9 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4
100	DB100	19-07-2021	10:55	Y	TSP=67.8 P1=2.6 P2=37.2 P3=137.0 P4=21.5 P5=187.7 P6=212.4

# YANKA LABORATORIES

PHONE: 1 800 667 422 / 08 9450 1111 FAX: 08 9450 1111

22nd July 2021

## SAMPLE CONDITION REPORT

CLIENT: Ennass GBH-JV MONTHLY DUST

EO:

JOB NO: 19181

ATTENTION: Damon, Anton and Carl

Adv. Note

DATE RECEIVED:

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLED	IL CHEMISTRY SAMPLE	SEM MICROBIOLOGY SAMPLE	SOB	BOO & COO	COMMENTS
SpEnvas 1	DB 1	Y					
SpEnvas 2	DB 2	Y					
SpEnvas 3	DB 3	Y					
SpEnvas 4	DB 4	NO					49 Days
SpEnvas 5	DB 5	Y					Stolen
SpEnvas 6	DB 6	Y					
SpEnvas 7	DB 7	Y					49 Days
SpEnvas 8	DB 8	Y					
SpEnvas 9	DB 9	Y					
SpEnvas 10	DB 10	Y					
SpEnvas 11	DB 11						
SpEnvas 12	DB 12	NO					NO POWER'S
SpEnvas 13	DB 13						Installed
SpEnvas 14	DB 14	NO					Installed
SpEnvas 15	DB 15	Y					
SpEnvas 16	DB 16	Y					
SpEnvas 17	DB 17	Y					
SpEnvas 18	DB 18	Y					
SpEnvas 19	DB 19	Y					
SpEnvas 20	DB 20	Y					
SpEnvas 21	DB 21	Y					
SpEnvas 22	DB 22	Y					49 Days
SpEnvas 23	DB 23	Y					
SpEnvas 24	DB 24	Y					
SpEnvas 25	DB 25	Y					
SpEnvas 26	DB 26	Y					
SpEnvas 27	DB 27	Y					
SpEnvas 28	DB 28	Y					
SpEnvas 29	DB 29	Y					
SpEnvas 30	DB 30	Y					
		TOTAL SAMPLES					

Analysis Required: Domestic :General:

Seepage:

MB

Selected:

RECEIVED BY: Nadine Higgins 22/7/2021

DELIVERED BY: F. M. L.

YANKA LAB

Document No:  
Revision:  
Date:

MON-AQR-244-20\_21 (21-06)  
0.1  
June 2021



Environmental Assurance (Pty) Ltd

Client Restricted  
Author: D Nell  
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# YANKA LABORATORIES

PO BOX 10888 STANBROOK NSW 2168 TEL: 02 9450 8400 FAX 02 9450 8771

## SAMPLE CONDITION REPORT

CUSTOMER: Envass GBH JV MONTHLY DUST

EO:

JOBNO: W18/

ATTENTION: Daniel, Aston and Carl

Adv Note

DATE RECEIVED:

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLED	IL CHEMISTRY SAMPLE	SEM-EDS MICROANALYSIS SAMPLE	BOB & COO	COMMENTS
SpEnvass 1	DB 31	Y				
SpEnvass 2	DB 32	Y				
SpEnvass 3	DB 33	Y				
SpEnvass 4	DB 34	Y				
SpEnvass 5	DB 35	Y				
SpEnvass 6	DB 36	Y				
SpEnvass 7	DB 37	Y				
SpEnvass 8	DB 38	Y				
SpEnvass 9	DB 39	Y				
SpEnvass 10	DB 40	Y				
SpEnvass 11	DB 41	Y				
SpEnvass 12	DB 42	Y				
SpEnvass 13	DB 43	Y				
SpEnvass 14	DB 44	Y				
SpEnvass 15	DB 45	Y				
SpEnvass 16	DB 46	Y				
SpEnvass 17	DB 47	Y				
SpEnvass 18	DB 48	Y				
SpEnvass 19	DB 49	Y				
SpEnvass 20	DB 50	Y				
SpEnvass 21	DB 51	Y				
SpEnvass 22	DB 52	Y				
SpEnvass 23	DB 53	Y				
SpEnvass 24	DB 54	Y				
SpEnvass 25	DB 55	Y				
SpEnvass 26	DB 56	Y				
SpEnvass 27	DB 57	Y				
SpEnvass 28	DB 58	Y				
SpEnvass 29	DB 59	Y				
SpEnvass 30	DB 60	Y				
		TOTAL SAMPLES				

69 Days

Analysis Required : Domestic : General :

Seepage :

MB

Selected:

RECEIVED BY: Nadine Higgs 22/1/2021  
 DELIVERED BY: Emlk

FILE 1 OF 1

Document No:  
Revision:  
Date:

MON-AQR-244-20\_21 (21-06)  
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June 2021



Environmental Assurance (Pty) Ltd

Client Restricted  
Author: D Nell  
41



# YANKA LABORATORIES

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## SAMPLE CONDITION REPORT

CLIENT: Enness DBH-JV MONTHLY DUST  
ATTENTION: Damon, Anson and Carl

EO:

JOBNO: W161

Adv.Note

DATE RECEIVED:

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLED	IL CHEMISTRY SAMPLE	GEN. MICROBIOLOGY SAMPLE (DB)	DOB & COO	COMMENTS
SpEnness 1	DB 61	Y				
SpEnness 2	DB 62	Y				
SpEnness 3	DB 63	Y				
SpEnness 4	DB 64	Y				
SpEnness 5	DB 65	Y				
SpEnness 6	DB 66	Y				
SpEnness 7	DB 67	Y				
SpEnness 8	DB 68	Y				
SpEnness 9	DB 69	Y				
SpEnness 10	DB 70	Y				
SpEnness 11	DB 71	Y				
SpEnness 12	DB 72	Y				
SpEnness 13	DB 73	Y				
SpEnness 14	DB 74	Y				
SpEnness 15	DB 75	Y				
SpEnness 16	DB 76	Y				
SpEnness 17	DB 77	Y				
SpEnness 18	DB 78	Y				
SpEnness 19	DB 79	Y				
SpEnness 20	DB 80	Y				
SpEnness 21	DB 81	Y				
SpEnness 22	DB 82	Y				
SpEnness 23	DB 83	Y				
SpEnness 24	DB 84	Y				
SpEnness 25	DB 85	Y				
SpEnness 26	DB 86	Y				
SpEnness 27	DB 87	Y				
SpEnness 28	DB 88	Y				
SpEnness 29	DB 89	Y				
SpEnness 30	DB 90	Y				
TOTAL SAMPLES						

64 Days

Analysis Required : Domestic : General :

Service :

MB

Selected:

RECEIVED BY:

DELIVERED BY: *Enness*

PAGE 1 OF 1


Public Health and Safety, 1999; 101: 1019-20.

## DATE RECEIVED:

**PROPOSED:**

## 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 LQ Portion 5</p> <p>Description: Near Matimba Power Station</p>	
March 2021	Date Installed: 31 <sup>st</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20<sup>th</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

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<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°41'37.30"S; 27°33'44.10"E

Farm: Turfvlakte 463 LQ

Description: Next to D1675



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°41'57.80"S; 27°32'48.26"E

Farm: Hierontrent 460 LQ

Description: Next to D1675



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled


Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: **Not Sampled – Bucket Stolen**



<p>Location: 23°42'13.03"S, 27°31'52.68"E</p> <p>Farm: Eenzaamheid 687 LO</p> <p>Description: Next D1675</p>	
March 2021	Date Installed: 31 <sup>st</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20<sup>th</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>



Location: 23°42'29.97"S, 27°30'32.64"E

Farm: Eenzaamheid 687 LO

Description: Next to D1675



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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

Farm: Eenzaamheid 687 LO

Description: Next to D1675



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°42'43.21"S, 27°27'48.78"E

Farm: Pontes Estate 744 LQ

Description: Outside farm gate next D1675



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 6<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°42'55.98"S, 27°27'30.40"E

Farm: Pontes Estate 744 LQ (Buffels Jag)



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 6<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 3<sup>rd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°43'28.90"S, 27°26'41.33"E

Farm: Pontes Estate 744 LQ (Buffels Jag)



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 6<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 3<sup>rd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>st</sup> March 2021

April 2021

Date Sampled: 6<sup>th</sup> May 2021

Sample Status: **Tampered (Attempted theft)**

Air Quality Class: Ideal

May 2021

Date Sampled: 3<sup>rd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

DB 12	
Location: N/A Farm: N/A Description: N/A	Required to be relocated during August 2021

DB 13	
Location: 24°38'30.48"S, 27°18'53.46"E Farm: N/A Description: N/A	
June 2021	Date Installed: 19 <sup>th</sup> July 2021



Location: 23°41'8.24"S, 27°35'18.63"E


Farm: N/A

Description: N/A



June 2021

Date Installed: 19<sup>th</sup> July 2021

<p>Location: 23°46'41.92"S, 27°25'52.99"E</p> <p>Farm: Zandnek 358 LQ Portion 1</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 31 <sup>st</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 20<sup>th</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

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

Farm: Renosterpan 361 Portion 6

Description: Servitude Road



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°49'17.37"S, 27°25'15.13"E

Farm: Renosterpan 361 Portion 3

Description: Servitude Road



March 2021

Date Installed: 31<sup>st</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 23°50'5.11"S, 27°25'4.54"E

Farm: Renosterpan 361 Portion 4

Description: Servitude Road



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°50'36.53"S, 27°24'56.77"E

Farm: Renosterpan 361 Portion 4

Description: Servitude Road



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°51'5.81"S, 27°24'49.59"E

Farm: Renosterpan 361 Portion 5

Description: Servitude Road



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal


June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



<p>Location: 23°51'43.25"S, 27°24'40.22"E</p> <p>Farm: Naauwpoort 365 LQ</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 30 <sup>th</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21<sup>st</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

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

Farm: Naauwpoort 365 LQ

Description: Servitude Road



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled


Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

<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 <sup>th</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21<sup>st</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled


Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

<p>Location: 23°54'46.08"S, 27°23'56.64"E</p> <p>Farm: Rooipan 357 LQ Portion 4</p> <p>Description: Servitude Dam</p>	
March 2021	Date Installed: 29 <sup>th</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21<sup>st</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Location: 23°55'22.69"S, 27°23'47.77"E

Farm: Zandfontein Portion 2

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 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: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°57'11.41"S, 27°23'28.14"E

Farm: Diepspruit 386 LQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°57'58.79"S, 27°23'37.97"E

Farm: Diepspruit 386 LQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°58'36.77"S, 27°23'44.50"E

Farm: Mabulskop 406 LQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°59'45.59"S, 27°23'58.25"E

Farm: Mabulskop 406 LQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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

Farm: Inkerman 10 KQ Portion 2

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24° 1'3.54"S, 27°24'12.35"E

Farm: Inkerman 10 KQ portion 3

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 23°41'35.31"S; 27°38'51.43"E

Farm: Rietfontein 820 KO

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24° 2'29.74"S, 27°24'28.91"E

Farm: Rietfontein 820 KO

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal


June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



<p>Location: 24° 2'40.69"S, 27°24'31.20"E</p> <p>Farm: Rietfontein 820 KO</p> <p>Description: Servitude Road</p>	
March 2021	Date Installed: 29 <sup>th</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21<sup>st</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

Location: 24° 2'46.02"S, 27°24'32.19"E

Farm: Rietfontein 15 KQ Portion 4

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



<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>	
March 2021	Date Installed: 29 <sup>th</sup> March 2021
April 2021	<p>Date Sampled: 5<sup>th</sup> May 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
May 2021	<p>Date Sampled: 2<sup>nd</sup> June 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>
June 2021	<p>Date Sampled: 21<sup>st</sup> July 2021</p> <p>Sample Status: Sampled</p> <p>Air Quality Class: Ideal</p>

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

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24° 7'11.42"S, 27°25'32.63"E

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24° 7'50.30"S, 27°25'43.01"E

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24° 8'36.82"S, 27°25'56.47"E

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24° 9'10.22"S, 27°26'5.85"E

Farm: Welgewonden 949 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24° 9'23.38"S, 27°26'10.00"E

Farm: Harlemoost 51 KQ portion 13

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 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: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°10'32.51"S, 27°26'26.49"E

Farm: Harlemoost 51 KQ portion 16

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°11'38.61"S, 27°26'48.79"E

Farm: Harlemoost 51 KQ portion 15

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 2<sup>nd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°11'49.30"S, 27°26'51.53"E

Farm: Matlabas 94 KQ Portion 2

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°14'34.19"S, 27°26'58.48"E

Farm: Matsulan 98 KQ Portion 37

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 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: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°15'19.44"S, 27°26'58.33"E

Farm: Witklip 665 KQ Portion 4

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°16'42.57"S, 27°26'57.57"E

Farm: Witklip 665 KQ Portion 4

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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

Farm: Rugtevley 97 KQ Portion 5

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°19'31.03"S, 27°26'56.52"E

Farm: Rugtevley 97 KQ Portion 6

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°20'45.70"S, 27°26'55.87"E

Farm: Blaauwpan 133 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°21'48.85"S, 27°26'55.81"E

Farm: Blaauwpan 133 KQ

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°23'9.52"S, 27°26'54.85"E

Farm: Blaauwpan 133 KO

Description: Servitude Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 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: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

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

Air Quality Class: NA

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°23'53.46"S, 27°25'19.77"E

Description: Dirt road between Tarentaalpan 132 KQ portion 2 and  
Diepkuil 135 Portion 3



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°24'24.61"S, 27°24'3.45"E

Farm: Diepkuil 135 KQ Portion 3

Description: Along the R510



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 23°41'35.31"S; 27°38'51.43"E

Farm: Diepkuil Portion 3

Description: Along the R510



March 2021

Date Installed: 30th March 2021

April 2021

Date Sampled: 5<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 21<sup>st</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 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: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



Location: 24°26'31.14"S, 27°21'39.92"E

Description: Along Dirt road between Buffelsvley 127 KQ and Karoobult 126 KQ



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°28'20.86"S, 27°17'27.36"E

Farm: Paarl 124 KQ Portion 6

Description: Beneath power line



March 2021

Date Installed: 30<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°31'38.11"S, 27°16'29.83"E

Farm: Stratford 462 KO

Description: Along D769 dirt road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Exceeded Residential Limit

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Exceeded Residential Limit

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Exceeded Residential Limit



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

Farm: Stratford 462 KQ

Description: Along D769 dirt road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Exceeded both Residential and Industrial limits

Location: 24°34'14.79"S, 27°18'36.10"E

Farm: Stratford 462 KO

Description: Situated between the houses of the small community



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Exceeded Residential Limit

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°34'24.25"S, 27°18'35.18"E

Farm: Stratford 462 KO

Description: Situated within Primary School Property



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°35'35.70"S, 27°17'45.31"E

Farm: Mooivallei 342 KQ – Portion 1

Description: Situated next to the farmhouse property fence



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°35'59.20"S, 27°17'38.40"E

Farm: Mooivallei 342 KQ – Portion 2

Description: Situated Within the farmhouse boundary fence



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 3<sup>rd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 22<sup>nd</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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

Farm: Mooivallei 342 KQ – Portion 4

Description: Situated near the farmhouse



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°36'51.37"S, 27°18'27.13"E

Farm: Mooivallei 342 KQ – Portion 7

Description: Situated next to the farm work shed



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°37'18.10"S, 27°18'45.97"E

Farm: Mooivallei 342 KQ – Portion 9

Description: Situated within horse paddock



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

Location: 24°38'3.48"S, 27°18'54.13"E

Farm: NA

Description: Along D727 dirt road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Exceeded Residential Limit

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> May 2021

May 2021

Date Sampled: 3<sup>rd</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 20<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal



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<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

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<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal

June 2021

Date Sampled: 19<sup>th</sup> July 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: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Exceeded residential limits

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Exceeded both the Residential and Industrial limits

June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Exceeded residential limits

Location: 24°35'5.76"S, 27°18'49.94"E

Farm: Mooivallei 342 KQ – Portion 1

Description: Near the D1649 Road



March 2021

Date Installed: 29<sup>th</sup> March 2021

April 2021

Date Sampled: 4<sup>th</sup> May 2021

Sample Status: Sampled

Air Quality Class: Ideal

May 2021

Date Sampled: 1<sup>st</sup> June 2021

Sample Status: Sampled

Air Quality Class: Ideal


June 2021

Date Sampled: 19<sup>th</sup> July 2021

Sample Status: Sampled

Air Quality Class: Ideal

PM 01	
Location:  Description: Primary School	To be included during the August 2021 monitoring report
June 2021	During the monitoring period a delay in instance resulted in time constraints for the monitoring period. The time constraints along with access requests for the locality resulted in the E-Sampler installation being postponed to the next monitoring period (July 2021).

PM 02	
Location: 23°41'51.31"S, 27°34'6.52"E  Description: Medupi Power Station	
June 2021	Date Installed: 19 <sup>th</sup> July 2021



Location: 24°35'37.25"S, 27°17'43.45"E

Farm: Mooivallei 342 KQ – Portion 1

Description: Situated within the farmhouse property fence



June 2021


Date Installed: 19<sup>th</sup> July 2021

## 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: 24-08-2021

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 <b>assessments, specialist input services, mine closure quantum's and environmental audits.</b> 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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		146

## 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)

	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

## REFERENCES

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



To verify this certificate scan this code

## 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: 23-08-2021

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 (21-06)	 Environmental Assurance (Pty) Ltd	Client Restricted
Revision:	0.1		Author: D Nell
Date:	June 2021		151

## 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



To verify this certificate scan this code

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Revision:	0.1	Environmental Assurance (Pty) Ltd	Author: D Nell
Date:	June 2021		153