OVERSTRAND MUNICIPALITY

AIR QUALITY MANAGEMENT PLAN

(1st REVISION 2017)

FEBRUARY 2017

Munisipaliteit • U-Masipala • Municipality

OVERSTRAND

PREAMBLE

The Overstrand Municipality (OSM) has delegated responsibility and accountability for the management of the natural environment within the Municipal region to the Environmental Management Section (EMS) who advises Council on environmental matters.

The Directorate: Infrastructure and Planning is the overarching Directorate responsible for Air Quality management in the OSM, which includes noise and dust control. This directorate's focus is the planning of infrastructure, development planning and control, property management, environmental management, building control and the corporate GIS system. This directorate consists of a Director, Infrastructural Management, Environmental Management Section, Town Planning, Building Control, Solid Waste and Electricity Services.

The Environmental Management Section is directly responsible for addressing the concerns of environmental management policy, public participation, scientific decision support and compliance with the provisions of Environmental Legislation. This focus will guide and promote continual improvement in the management of the natural environment within the municipal region. The functional strategies of the EMS Section are:

- Effective management of Municipal Nature Reserves and Municipal Open Spaces (Zone I)
- Progressive development and implementation of a corporate Environmental Management System to reduce the environmental footprint of the Municipality.
- Evaluate all developments (development proposals, town planning applications, building plans and infrastructure projects) for environmental sustainability.
- Liaise and engage with stakeholders concerning the state of the environment and to advise the Municipal Council and Municipal officials on environmental matters.

Vision

The Environmental Management Section strives towards sustainable environmental management by means of environmental best practice. Accordingly, the section strives to coordinate, plan and manage all human activities in a defined environmental system to accommodate the broadest possible range of sustainable short and long term environmental, social and economic development objectives. The section also strives to ensure that the human right to clean air is maintained at a standard where economic and social development will increase and grow without a negative impact on the environment.

Mission

The mission of the section is to promote the use of sound environmental management principles to ensure a healthy environment within the OSM. Through this the section will strive to ensure the effective management of sustainable air quality practices in order to support the Overberg District Municipality to achieve the greater air quality goals.

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1. DEFINITIONS

‘‘air pollution’’ means any change in the environment caused by any substance emitted into the atmosphere from any activity, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future;

‘‘Air Quality Act’’ means the National Environment Management: Air Quality Act, 2004(Act No. 39 of 2004);

‘‘air quality management plan’’ means the air quality management plan referred to in section 15 of the Air Quality Act;

‘‘air quality officer’’ means the air quality officer designated as such in terms of section 14(3) of the Air Quality Act;

‘‘ambient air’’ means **‘‘ambient air’’** as defined in section 1 of the Air Quality Act;

‘‘atmosphere’’ means air that is not enclosed by a building, machine, chimney or other similar structure;

‘‘atmospheric emission’’ or **‘‘emission’’** means any emission or entrainment process emanating from a point, non-point or mobile source that results in air pollution;

‘‘Council’’ means the Council of the City or any of the other political structures, political office bearers, councillors or staff members, of the City duly authorised by delegation;

‘‘environmental management inspector’’ means an environmental management inspector referred to in section 5; 30 July 2010 Province of Western Cape: Provincial Gazette 6772 1227

‘‘environment’’ means the surroundings within which humans exist and that are made up of—

(a) the land, water and atmosphere of the earth;

(b) micro-organisms, plant and animal life;

(c) any part or combination of (a) and (b) and the interrelationships among and between them; and

(d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being;

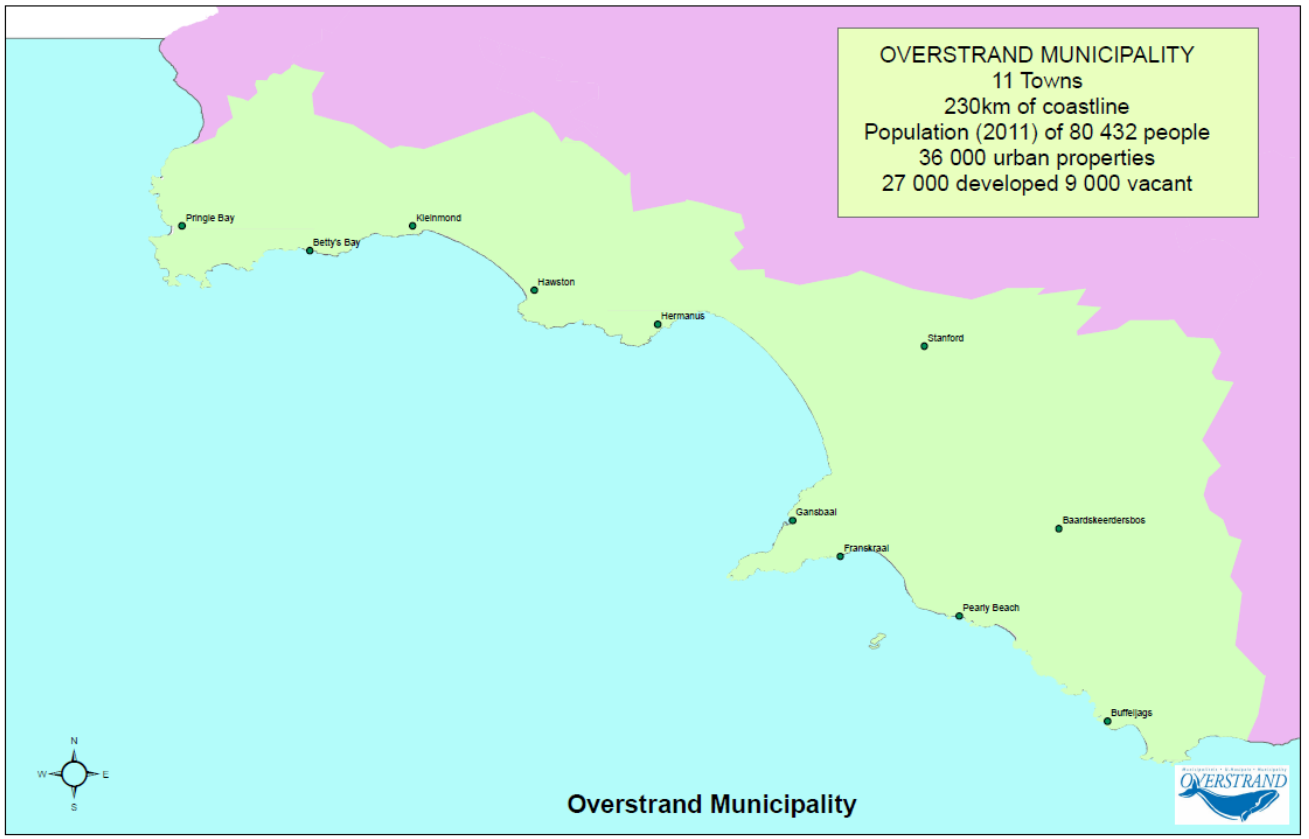
''Systems Act'' means the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000);

''the NEMA'' means the National Environmental Management Act, 1998 (Act No.107 of 1998);

2. INTRODUCTION

OSM is located along the south western coastline of the Overberg District Municipal area bordering the City of Cape Town in the west and Cape Agulhas Municipality in the east. The Overstrand is a dynamic area, combining great potential and a beautiful setting. Our task is to bring about growth and development to the benefit of all our people, in their different communities, whilst maintaining a balance with nature.

The Municipality covers a land area of approximately 2 125 km², with a population of 80 432 people according to Census statistics of 2011 and includes the areas of Hangklip/Kleinmond, Greater Hermanus, Stanford and Greater Gansbaai. The municipal area has a coastline of approximately 230 km, stretching from Rooi Els in the west to Quoin Point in the east. The natural beauty of the area is an outstanding asset with South Africa's first biosphere reserve as well as the best land-based whale watching in the world. Figure 1 below indicates the boundaries of the Overstrand Municipal area.



3. LEGISLATIVE FRAMEWORK

The Council of the OSM implements Air Quality management in terms of the following legislation:

- Constitution of the Republic of South Africa (1996) - section 156(2), Schedule 4 part B, Schedule 5 part B
- Local Government Municipal Systems Act, 2000 (Act No. 32 of 2000) - section 13(a)
- Local Government Municipal Structures Act, 1998 (Act No. 117 of 1998) – section 83
- National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) - section 11 (1).
- National Environmental Management Act: Air Quality Act, 2004 (Act No. 39 of 2004) – The 2012 National Framework for Air Quality Management

4. PURPOSE

In accordance with the National Framework for Air Quality Management, the following air quality governance functions are the principle responsibility in the relevant jurisdiction of a Local Authority:

- Monitor ambient air quality and point, non-point and mobile source emissions.
- The development of air quality management plans as a component of integrated development plans as required by the Municipal Systems Act.
- The setting of municipal standards for emissions of point, non-point or mobile sources in the municipality in respect of identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment in the municipality.
- Monitoring compliance in respect to reasonable steps to prevent the emission of any offensive odour caused by any activity.
- Monitoring compliance with directives to submit an atmospheric impact report.

Air Quality Control is part of the District Municipality's function under the Municipal Health Section of the Community Services Department, with the Head: Municipal Health designated as the Air Quality Officer. According to Chapter 5 of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), it makes provision for the District Municipality, as licensing authority, to generate funds for the management of Air Quality through the licensing. ODM has appointed District Health Officials who actively deals with the air quality transgressions within the Overstrand Municipal area. The OSM works closely with the District and Province to deal with any complaints that are logged with the Municipality.

5. CO-OPERATIVE GOVERNANCE

The District Municipality's Municipal Health Services Section has 1 Manager, 4 Area managers and 12 Environmental Health Practitioners that are responsible for the execution of the following functions within the district which includes; water quality monitoring, food control, environmental pollution control, waste management, health surveillance premises, surveillance and prevention of communicable diseases, vector control disposal of the dead and chemical safety.

Each District Municipality has to establish a forum to perform an advisory function to local municipalities in matters relating to air quality. OSM is represented on the Overberg Air Quality Officers Forum (AQOF), which is chaired by ODM. This forum is made up of all Local Municipalities being Cape Agulhas, Overstrand, Swellendam and Theewaterskloof. The Forum deals with matters relevant to air quality impacting on the water and coastal zone area, as well as any inland area within the area of jurisdiction of the ODM, as long as the issue is of direct consequence to air quality, including noise and dust pollution.

6. SUMMARY OF STATUS QUO OF AIR QUALITY MANAGEMENT IN OVERSTRAND

The Environmental Management Section falls under the Directorate: Infrastructure & Planning. The OSM has designated the Senior Manager: Environmental Management as the Air Quality officer. The Environmental Officers' appointed in each region of the Municipality, namely Kleinmond, Hermanus and Gansbaai assists with the air quality function. It is not foreseen that any additional staff structures will be appointed to implement this plan.

Air Pollution Sources in the Overstrand are as follow:

- Industrial operations especially fish factories in Gansbaai and clay brick manufacturing near Bot River
- Agricultural activities such as crop burning and spraying
- Biomass burning (veld fires)
- Domestic fuel burning (wood and paraffin)
- Vehicle emissions
- Waste water treatment and disposal
- Landfill sites
- Dust

- Other fugitive dust sources such as wind erosion of exposed area.

There are few sources of air pollutants in the Overstrand and the area only has light industrial sites. The ambient air quality is generally good but the motor vehicle congestion during the holiday season could result in elevated ambient concentrations of particulates and Nox (Nitrogen Oxides) at times.

7. AIR QUALITY MONITORING

There are very few sources of air pollutants in the Overberg District Municipality. As a result, the ambient air quality is generally good. However, emissions from industrial boilers are likely to result in local areas of elevated concentrations of air pollutants. Ambient particulate concentrations are likely to be high in low-income. residential areas where wood is used as the primary fuel source and activities such as refuse burning occur. Motor vehicle congestion in holiday towns such as Kleinmond and Hermanus results in elevated ambient concentrations of particulates and NOx at times. Pesticide spraying of crops results in local areas of poor air quality.

Report back on the status of Hermanus air quality: (compiled by L.Wildschut, Njabulo Masuku – DEA&DP)

The Hermanus ambient air quality monitoring station is located at the Mount Pleasant Primary School which is located to the west of the town and between the major road (R43) into Hermanus and the coastline to the south. The monitoring station was commissioned in March 2014 and measures the following parameters: CO, CO2, VOC (Benzene) NO2, SO2, O3, PM10, PM2.5 and meteorological parameters. The site co-ordinates of the monitoring station are 34°25'12.40"S, 19°12'47.17"E. No PM_{10} data was collected during 2015 due to the instruments being out for repairs. Long term trends in air quality parameters, measured at Hermanus, are presented in **Figure 1 to Figure 4.**

1. Hermanus Sulphur Dioxide

Sulphur dioxide (SO_2) is a colourless heavy gas which can cause upper respiratory irritation to humans in an event whereby the measured SO_2 concentration are exceeding the SO_2 National Ambient Air Quality Standards (NAAQS). **Figure 1** shows the monthly averages for SO_2 concentrations monitored at Hermanus ambient air quality monitoring station which are generally far below NAAQS. However, data collection was affected by power outages during the periods June 2014 – September 2014 and April 2015 – October 2015.

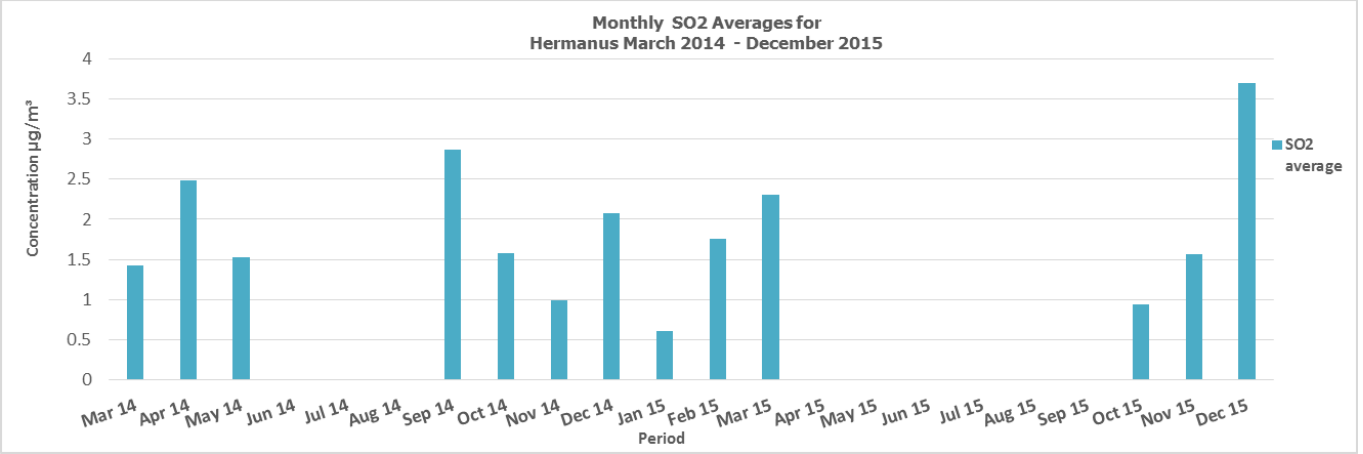


Figure 1: Long term SO_2 monthly averages at Hermanus AQMS (March 2014 – December 2015)

2. Hermanus Ozone

Ozone (O_3) in the lower atmosphere (troposphere) form as a secondary pollutant when Nitrogen Dioxide reacts with volatile organic compounds in the presence of sunlight. Human exposure to elevated O_3 concentrations can results into irritation of lungs, eyes, nose and throat. The NAAQS for O_3 is 120 µg/m^3 calculated on running 8-hour averages. **Figure 2** shows monthly averages for O_3 monitored at Hermanus ambient air quality monitoring station with the maximum monthly average in September 2014 (~50 µg/m^3) and minimum monthly average in October (~7 µg/m^3). The measured O_3 concentrations did not exceed the NAAQS during the monitoring period. However, data collection was affected by power outages during the periods June 2014 – September 2014 and April 2015 – October 2015.

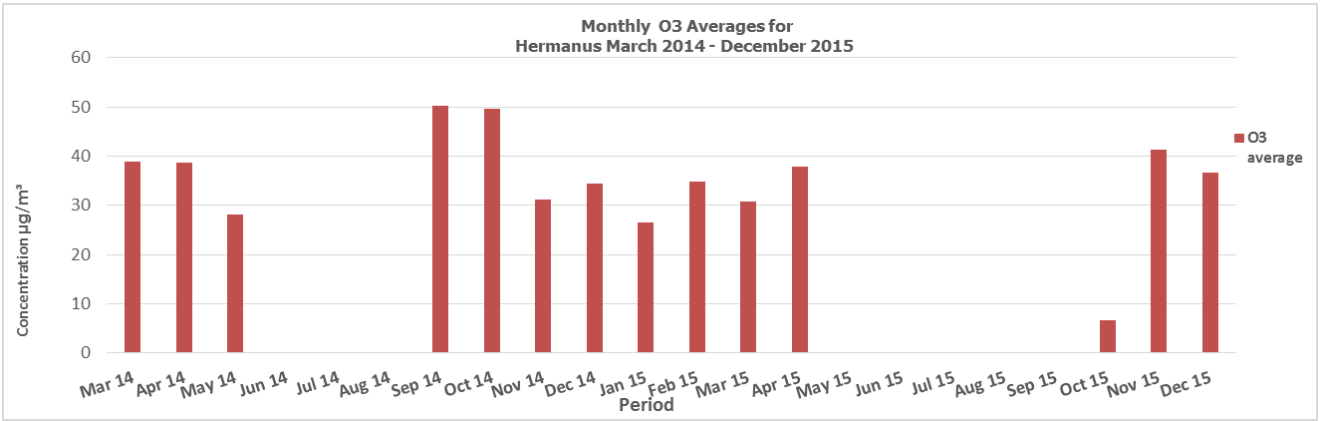


Figure 2: Long term O_3 monthly averages at Hermanus AQMS (March 2014 – December 2015)

3. Hermanus Nitrogen Dioxide

Nitrogen dioxide (NO_2) forms from emissions from vehicle and industrial combustion processes. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases. The NAAQS for NO_2 is 200 µg/m^3 calculated on hourly averages and 40 µg/m^3 calculated on annual averages. **Figure 3** shows monthly averages for NO_2 monitored at Hermanus ambient air quality monitoring station with the maximum monthly average in October 2015 (~11 µg/m^3) and minimum monthly average in Feb 2015 (~2 µg/m^3). The measured NO_2 concentrations did not exceed the NAAQS during the monitoring period. However, data collection was affected by power outages during the periods June 2014 – September 2014 and April 2015 – October 2015.

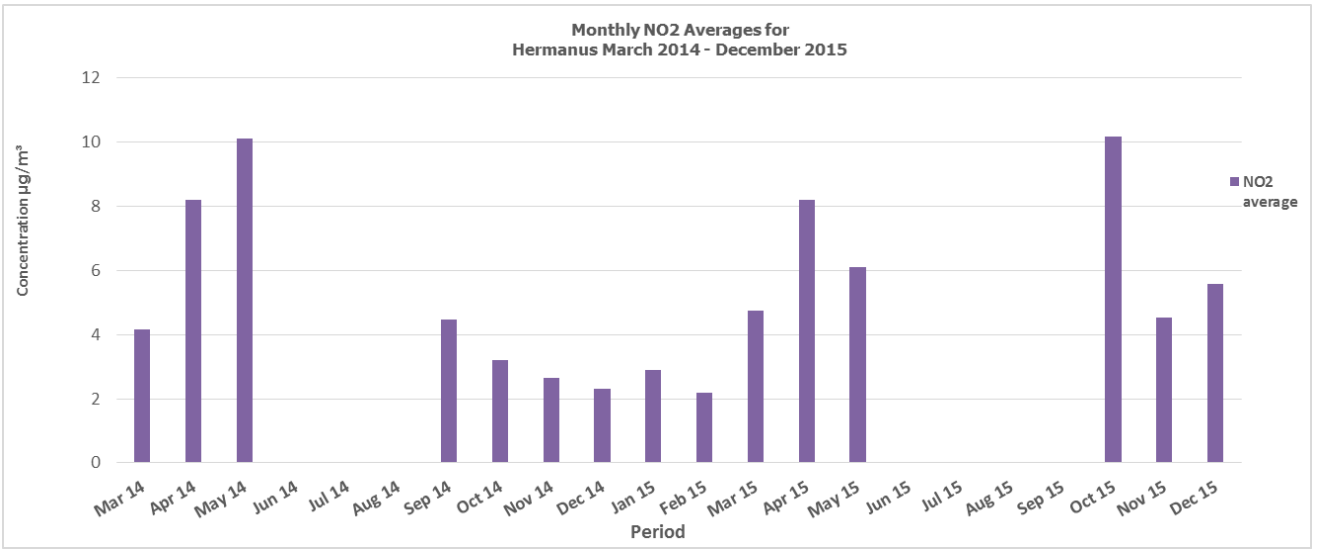


Figure 3: Long term NO_2 monthly averages at Hermanus AQMS (March 2014 – December 2015)

4. Hermanus Carbon Monoxide

Ambient sources of Carbon Monoxide (CO) include motor vehicle and industrial emissions. CO is formed during the incomplete combustion of fuels and at low concentrations may cause lethargy and headaches. CO is a suffocating gas which can impair the functioning of the central nervous system. The NAAQS for CO is 30 mg/m^3 calculated on hourly averages and 10 mg/m^3 calculated on 8 hourly averages (calculated on one hourly averages). **Figure 4** shows monthly averages for CO monitored at Hermanus ambient air quality monitoring station with the maximum monthly average in April 2014 (~0.24 mg/m^3) and minimum monthly average in Feb 2015 (~0.10 mg/m^3). The measured CO concentrations did not exceed the NAAQS during the monitoring period. However, data collection

was affected by power outages during the periods June 2014 – September 2014 and April 2015 – October 2015.

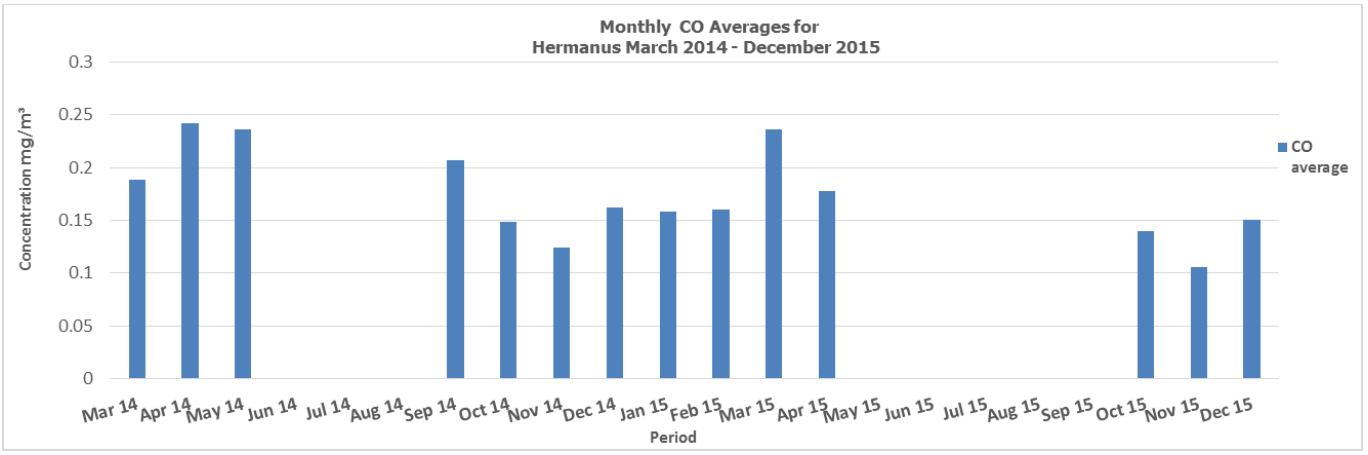


Figure 4: Long term CO monthly averages at Hermanus AQMS (March 2014 – December 2015)

Gansbaai (compiled by N. Dreyer-ODM):

Gansbaai Marine has been granted an Atmospheric Emissions Licence by the Overberg District municipality in terms of Section 40 (1) (a) of the National Environmental Management: Air Quality Act, 2004 (Act No. 34 of 2004) in respect of Listed Activity Category 10: Animal Matter Processing. Upon reviewing the Atmospheric Emission Licence and an inspection of the facility in terms of existing environmental authorisations, no current non- compliance were noted or experienced. The facility undertook Stack emission surveys on the three boilers to measure for particulates and on the scrubber to measure for H_2S emissions. The particulates for the boilers were above the standards. The SO_2 concentrations were well below the standards. Although there is no standard for H_2S, it is recommended that the facility (Gansbaai Marine) investigate the mitigation of odour (H_2S) and comply with the licencing conditions in terms of section 28 of NEMA: Duty of Care. The facility is in a process of implementing the conditions that were set out in the Atmospheric Emissions Licence.

Environmental Management System:

Overstrand Municipality implementing an Environmental Management System (EMS), by which the municipal impacts on the environment are managed. As part of the EMS an audit system has been

put in place to evaluate how municipal services and the process of service delivery may impact on air quality.

8. GAPS AND CHALLENGES

- The division of roles and responsibilities between local and district municipalities are not clearly understood or have not yet been accepted by certain local municipalities. This uncertainty has made the implementation of the air quality function difficult.
- Until consensus has been reached regarding the above mentioned, the ODM will accept responsibility for the licencing of listed activities and the enforcement of legislation will be the responsibility of the local municipality.
- The appointment of a suitably skilled and qualified environmental officer dedicated to a single function, instead of dividing duties between officials.
- No air quality by-law has been promulgated

9. GOALS & OBJECTIVES

9.1 To ensure effective and consistent air quality management, linked to climate change response

- Effective air quality management
- Develop, implement and maintain an Air Quality Management System
- Establish an emissions reduction strategy.
- Establish a climate change response strategy.

9.2 To engage with stakeholders to raise awareness with respect to air quality management and climate change response.

- To promote co-operation amongst all spheres of Government, business, industry and civil society.

9.3 To ensure effective and consistent air quality compliance monitoring and enforcement

- To improve compliance monitoring and enforcement
- To promote continuous improvement with respect to compliance

10. MONITORING, EVALUATION & REVIEW

10.1. Monitoring & Reporting

Monitoring and reporting on progress with regards to the implementation of the AQMP is a key factor in ensuring implementation of the goals and objectives. Reporting is done through the Service Delivery and Budget Implementation (SDBIP) process.

10.2 Evaluation

Continuous evaluation is an essential element of the AQMP implementation as it allow for a thorough assessment of the AQMP including the shortcomings and strengths evident in implementation. This evaluation process will be done through the Key Performance Indicator review process, which is conducted quarterly.

10.3 Review

The AQMP review comprises of a review of the AQMP, and addresses further developments in the science, as well as the management of air quality. The review of the AQMP will be done every five years, subject to funding and political cycles, as well as implementation of outcomes. Therefore an element of flexibility is necessary.

11. IMPLEMENTATION PLAN

Timeframes: Short-term (6-12 months); Medium-term (1-2 years); Long term (3-5 years)

GOAL 1: To ensure effective and consistent air quality management, linked to climate change response

OBJECTIVE 1: Effective air quality management

TARGET	ACTIVITIES	TIMEFRAMES
To strengthen and build capacity in air quality management	Attend and facilitate training and development in air quality management to the staff of the Environmental Management Section	Continuous

GOAL 1: To ensure effective and consistent air quality management, linked to climate change response

OBJECTIVE 2: Develop, implement and maintain an air quality management system

TARGET	ACTIVITIES	TIMEFRAMES
Compilation of an emissions inventory for the Overstrand	Compile an emissions inventory of all industrial sources.	Medium term
Compilation of an emissions inventory for the Overstrand	Compile an inventory of all small boilers.	Long term
Establish an air quality monitoring agreement with District and Province.	Sign Service level agreements with District and Province to assist with air quality monitoring within the Overstrand municipal area.	Long term

GOAL 1: To ensure effective and consistent air quality management, linked to climate change response

OBJECTIVE 3: Establish a climate change response strategy

TARGET	ACTIVITIES	TIMEFRAMES
Compilation and implementation of a climate change response strategy.	To promote environmental best practices and cleaner development technologies amongst all stakeholders	Long term
Compilation and implementation of a climate change response strategy	To reduce ozone depleting substances and greenhouse gas emissions, in line with national and international requirements.	Long term
Compilation and implementation of a climate change response strategy	Establish an emission reduction strategy	Long term

GOAL 1: To ensure effective and consistent air quality management, linked to climate change response

OBJECTIVE 3: Establish an emissions reduction strategy

TARGET	ACTIVITIES	TIMEFRAMES
Biomass burning	Liase with fire services to assist in air pollution practices.	Medium – Long term
	Obtain information from Fire & Rescue Department with regards approved burning permits, location of veld fires and extent of areas burnt, in order to maintain and update a database.	Medium- Long term
Municipal Waste treatment and Disposal.	Develop an emissions inventory of waste burning sources (incinerators, sewage and waste water treatment works)	Medium-Long term
	Ensure all operating incinerators are permitted.	Medium-Long term
	Maintain a current database of permitted and non-permitted landfill sites.	Medium-Long term

GOAL2: To engage with stakeholders to raise awareness with respect to air quality management and climate change response

OBJECTIVE 1: To promote co-operation amongst all spheres of Government, business, industry and civil society.

TARGET	ACTIVITIES	TIMEFRAMES
To strengthen and build capacity in air quality management.	Attend District Air Quality Officer's Forum to engage in air quality and climate change related matters.	Short term
To strengthen and build capacity in air quality management	Attend Provincial Air Quality Officer's Forum to engage in air quality and climate change related matters.	Short-Medium term
To strengthen and build capacity in air quality management	Attend National Air Quality Lekgotla to engage in air quality and climate change related matters.	Medium term
Provide a mechanism where air quality related complaints can be logged.	Establish and facilitate an air quality complaints register.	Continuous
Improve public awareness with issues related to air quality management and climate change.	Conduct and facilitate environmental education sessions with civil society.	Continuous

GOAL 3: To ensure effective and consistent air quality compliance monitoring & enforcement

OBJECTIVE 1: To improve air quality compliance monitoring and enforcement

TARGET	ACTIVITIES	TIMEFRAMES
Promulgation of an Air Quality by-law.	Compilation, approval and implementation of an air quality by-law for Overstrand Municipality.	Long term
Establish a compliance monitoring system.	Ensure that industries/small businesses adhere to air quality by-law.	Long term