NKANGALA DISTRICT MUNICIPALITY

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My Ref.:
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Atmospheric Emission Licence Holder: Eskom Kendal Power Station (SOC) Ltd

Atmospheric Emission Licence No.: 17/4/AEL/MP312/11/15

ATMOSPHERIC EMISSION LICENCE AS CONTEMPLATED IN SECTION 43 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004, (ACT NO. 39 OF 2004)

I, M M Skosana in my capacity as Municipal Manager of Nkangala District Municipality (hereinafter referred to as "the Licensing Authority ", in terms of Section 36(1) of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004, hereinafter referred to as the "Act"), and as provided for in Section 40 (1) (a) of the Act, hereby grant the authorisation of the above-mentioned Atmospheric Emission Licence subject to Section 43 of the Act to the conditions specified herein.

This Atmospheric Emission Licence is issued to **Eskom Kendal Power Station SOC Ltd** in terms of Section 42 of the Act as amended, in respect of Listed Activity **No.1.1, 2.4 and 5.1** The Atmospheric Emission Licence is issued on the basis of information provided in the company's application dated 23 January 2019 and information that became available during processing of the application also the site visit conducted on the 15 March 2019.

The Atmospheric Emission Licence is valid for five (5) years, until **30 September 2024** or from the date of signature of this licence.

This Atmospheric Emission Licence is issued subject to the conditions and requirements set out below which form part of the Atmospheric Emission Licence and which are binding on **Eskom Kendal Power Station SOC Ltd** (hereinafter referred to as "the Licence Holder")

Acting Air Quality Officer: _____ Date: 09/09/2019 AEL Ref. No.:17/4/AEL/MP312/11/15

1. ATMOSPHERIC EMISSION LICENCE ADMINISTRATION

Name of the Licensing Authority	Nkangala District Municipality
Atmospheric Emission Licence Number	17/4/AEL/MP312/11/15
Atmospheric Emission Licence Issue Date	30 September 2019
Atmospheric Emission Licence Type	Atmospheric Emission Licence
Review Date, not later than	31 August 2024

2. ATMOSPHERIC EMISSION LICENCE HOLDER DETAILS

Enterprise Name	Eskom Kendal Power Station
Enterprise Registration Number (Registration Numbers if Joint Venture)	2005/015527/06
Registered Address	Portion 22 Schoongezicht No 218 IR, Emalahleni Local Municipality, Mpumalanga 1035
Postal Address	Private Bag x7272 Witbank, 1035
Telephone Number (General)	013 647 9111
Industry Sector	Generation of electricity
Contact Name	Tebogo Lekalakala
Telephone Number	013 647 6740
Cell Phone Number	082 893 7684
Fax Number	013 647 6904
Email Address	LekalaT@eskom.co.za
Contact Details	013 647 6740
Emission control officer	Tebogo Lekalakala
Cell Phone Number	082 893 7684
Email Address	LekalaT@eskom.co.za
After Hours Contact Details	072 2121 710
Land Use Zoning as per Town Planning Scheme	Agricultural/ Heavy Industry

3. LOCATION AND EXTENT OF PLANT

Physical Address of the Premises	Portion 22 Schoongezicht no 218 IR
Description of Site (Erf)	Kendal Power Station is mostly surrounded by Farming activities. The R545 motor way is also situated about 3 km away from the station. Ogies is about 8.8 km north-east from the power station. Railway line and Khayalethu village are about 5km north of the station.
Coordinates of Approximate Centre of Operations	Lat:26,0897349 Long: 28, 964867.524
Extent (km²)	3.37
Elevation Above Level (m)	1631
Province	Mpumalanga
Metropolitan/District Municipality	Nkangala District
Local Municipality	Emalahleni Local Municipality
Designated Priority Area	Highveld Priority Area

Figure 1: Locality of Eskom Kendal Power Station

4. GENERAL CONDITIONS

4.1. Process and ownership changes

The holder of the atmospheric emission licence must ensure that all unit processes and apparatus used for the purpose of undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing atmospheric emissions, are at all times properly maintained and operated.

No building, plant or site of works related to the listed activity or activities used by the licence holder shall be extended, altered or added to the listed activity without an environmental authorisation from the competent authority. The investigation, assessment and communication of potential impact of such an activity must follow the basic assessment procedure as prescribed in the Environmental Impact Assessment Regulations published in terms of section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

Any changes in processes or production increases, by the licence holder, will require prior approval by the licensing authority.

Any changes to the type and quantities of input materials and products, or to production equipment and treatment facilities will require prior written approval by the licensing authority.

The licence holder must, in writing, inform the licensing authority of any change of ownership of the enterprise. The licensing authority must be informed within 30 (thirty) days after the change of ownership.

The licence holder must immediately on cessation or decommissioning of the listed activity inform, in writing, the licensing authority.

Special Condition

The licence holder must nominate any other official to attend all the Highveld Priority Area Air Quality Management Plan (HPA-AQMP: ITT) Implementation Task Team and also the Multi-Stakeholder Reference Group meetings.

4.2. General duty of care

The holder of the licence must, when undertaking the listed activity, adhere to the duty of care obligations as set out in section 28 of the NEMA.

The licence holder must undertake the necessary measures to minimize or contain the atmospheric emissions. The measures are set out in section 28(3) of the NEMA.

Failure to comply with the above condition is a breach of the duty of care, and the licence holder will be subject to the sanctions set out in section 28 of the NEMA.

4.3. Sampling and/or analysis requirements

Measurement, calculation and/or sampling and analysis shall be carried out in accordance with any nationally or internationally acceptable standard. A different method may be acceptable to the licensing authority as long as it has been consulted and agreed to the satisfactory documentation necessary in confirming the equivalent test reliability, quality and equivalence of analyses.

The licence holder is responsible for quality assurance of methods and performance. Where the holder of the licence uses external laboratories for sampling or analysis, accredited laboratories shall be used.

4.4. General requirements for licence holder

The licence holder is responsible for ensuring compliance with the conditions of this licence by any person acting on his, her or its behalf, including but not limited to, an employee, agent, sub-contractor or person rendering a service to the holder of the licence.

The licence does not relieve the licence holder to comply with any other statutory requirements that

may be applicable to the carrying on of the listed activity.

A copy of the licence must be kept at the premises where the listed activity is undertaken. The licence must be made available to the environmental management inspector representing the licensing authority who requests to see it.

The licence holder must inform, in writing, the licensing authority of any change to its details including the name of the emission control officer, postal address and/or telephonic details.

4.5. Statutory obligations

The licence holder must comply with the obligations as set out in Chapter 5 of the Act.

5. NATURE OF PROCESS

5.1. Process description

Coal from the mine is fed with conveyors to coal mills where it is ground to fine coal particles, which is commonly known as pulverised fuel (PF). The PF is transported with Primary Air flow to the boiler burners where it is combusted to a gas at about 1200 Degrees Celsius. In this combustion processes, by-products are produced. The burning of coal produces heat which is used to produce steam. Superheated and reheated steam is then used to drive steam turbines which then drive a generator which generates electricity.

The gas and ash particles from the coal combustion are cooled down as they pass through the boiler, and final cooling down and heat extraction for re-use happens at four air heaters. Combustion and mill air is heated up using the hot combustion gas. Final gas temperature at the Electrostatic Precipitators (ESPs) ranges between 110 Degrees Celsius and 150 Degrees Celsius, depending on the boiler load and ambient air temperature.

Ash particles are removed from the gas in the ESP, typically with 93% operational efficiency, and the gas is emitted to atmosphere through the gas chimneys (smoke stacks).

Fly ash is collected through Electrostatic Precipitators into the hoppers and is transported to fly ash bunkers through a series of chain conveyors. The ash gets stored, conditioned and then transported by a conveyance system to the ash dump.

5.2. Facility Wide Listed Activities with Regulatory Applicability

List of all Rules associated with Listed Activities, as published in terms of Section 21 of the AQA, authorised to be conducted at the premises by the licence holder:

Rule Category	Rule Number	Rule Name & Description of the Listed Activity
SEC21	SA0101	Solid fuels (excluding biomass) combustion installations used primarily for steam raising or electricity generation.
SEC21	SA0501	Storage and handling of ore and coal not situated on the premises of a mine or works as defined in the Mines Health and Safety Act 29/1996.
SEC21	SA0204	Petroleum product storage tanks and product transfer facilities, except those used for liquefied petroleum gas.

5.3. Unit process or processes

List of all unit processes associated with the listed activities to be undertaken at the site of work.

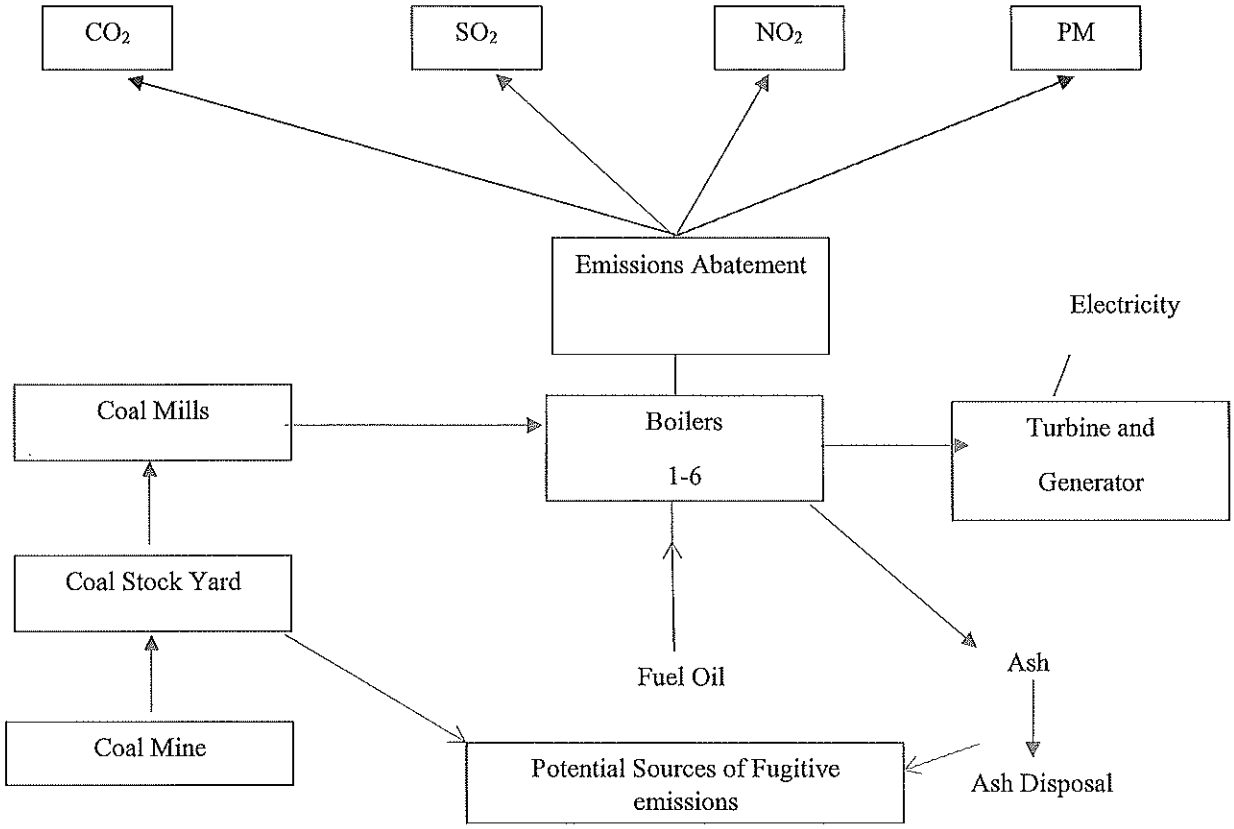
Unit Process	Process function	Batch or Continuous Process
Unit 1-6	Power generation	Continuous Process
Coal stock pile	Storage of coal	Continuous Process
Fuel oil storage tanks	Storage of fuel oil	Continuous Process

5.4. Hours of operations

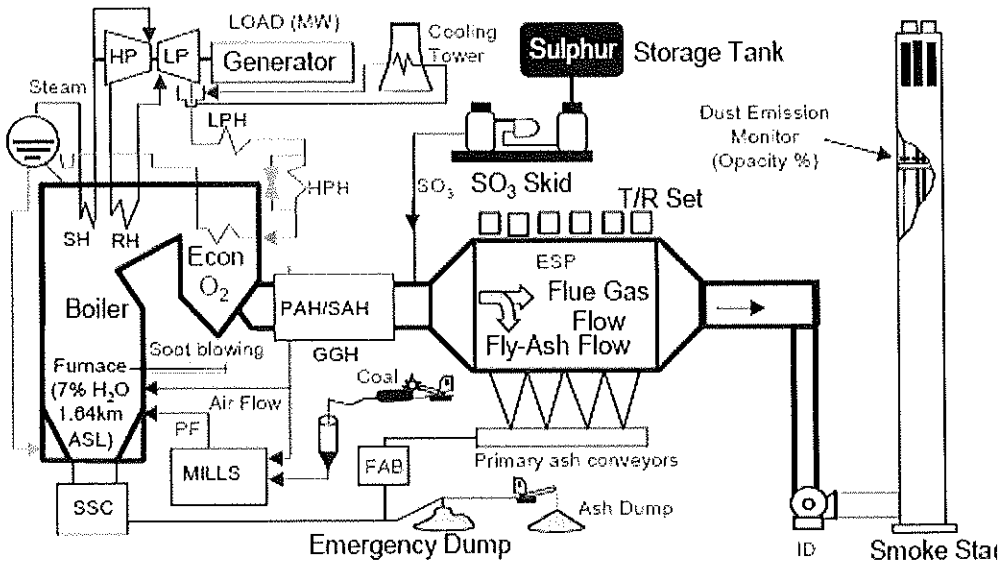
Indicate the hours of operation of all unit processes associated with the listed activities at the site of work.

Unit Process	Operating Hours	Days of Operation per Year
Unit 1-6	24	365
Coal stock pile	24	365
Fuel oil storage tanks	24	365

5.5. Graphical process information



simplified diagram with the name of each unit process showing links between all unit processes or blocks process flow chart indicating inputs, outputs and emissions at the site of works, including points potential fugitive emissions and emergency releases;



Graphical Process Flow

6. RAW MATERIALS AND PRODUCTS

6.1. Raw materials used

Regulated Raw Materials

Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Units (quantity/period)
Coal	2260000	Tons/month
Fuel Oil	5000	Tons/month

6.2. Production and By Product rates

Product Name	Maximum Permitted Production Capacity (Quantity)	Units (quantity/period)
Electricity	4380	MW

6.3. Materials used in energy sources

Materials for Energy Source	Maximum Permitted Consumption Rate	Designed Consumption Rate	Actual Consumption Rate	Sulphur %	Ash %
Coal	2260000 (Tons/month)	2260000 (Tons/month)	2260000 (Tons/month)	S < 3%	40
Fuel Oil	5000(Tons/month)	5000(Tons/month)	5000(Tons/month)	0	0

6.4. Emission Units

6.4.1. Emission Unit - Stack Parameters (Point Source)

EU Code	Stack Name	Latitude (decimal degrees) South	Longitude (decimal degrees) East	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Diameter at Stack Tip / Vent Exit (m)	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m^3/s)	Actual Gas Exit Velocity (m/s)	Emission Hours	Type of Emission (Continuous / Batch)
Stack 1	Stack 1 (Unit 1,Unit 2 and Unit 3)	26°05'24"S	28°58'03.8" E	275	177	7.8	110-150	1320.54 (per chimney)	32	24	Continuous
Stack 2	Stack 2 (Unit 4,Unit5 and Unit 6)	26°05'26"S	28°58'12.6" E	275	177	7.8	110-150	1320.54(per chimney)	32	24	Continuous

6.4.2. Emission Unit – Area Source Parameters (Area/Line Source)

EU Code	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Emission Hours	Type of Emission (Continuous / Batch)
A1	Coal Stockpile	Storage and handling of coal	26°06'19.11" S	28°58'41.52 E	15 m	800	240	24	Intermittently
A2	Ash Dump	Ash Disposal facility	-26.099621	28.943952	65m	2500	2000	24	Continuous
A3	Continuous Ash Disposal Facility	Ash Disposal facility	-26 05 44.45S	28.56.17.45E"	60m	2500	2000	24	Continuous
A4	Emergency Ash Dump	Temporal Ash Disposal Facility	-26.086780	28.958900	6 m	100 m	60 m	Intermittently	Intermittently
A5	Unpaved road round the coal stock yard	Movement of traffic	N/A	N/A	N/A	2,9km	8m	Intermittently	Intermittently
A6	Unpaved road around the ash dump	Movement of traffic	N/A	N/A	N/A	7,8 km	8m	Intermittently	Intermittently

A7	Unpaved road to the Emergency Ash Dump	Movement of traffic	N/A	N/A	N/A	0.25m	8m	Intermittently	Intermittently
A8	Unpaved road to the dirty dam	Movement of traffic	N/A	N/A	N/A	0,60m	8m	Intermittently	Intermittently

7. CONTROL DEVICES, EMISSION UNITS, AND REPORTING GROUPS

7.1 Control Devices

Emission Unit						Control Device					
Associated EU Code	**Appliance / Process Equipment Number**	**Appliance Serial Number**	**Appliance Type / Description**	**Control Device Name and Model**	**Control Device Manufacture Date**	**Commission Date**	**Date of Significant Modification / Upgrade**	**Device Type**	**Design Capacity**	**Minimum Control Efficiency (%)**	**TMinimum Utilisation (%)**
EU0001 - EU003	U1;U2 and U3	10HQF 20HQF 30HQF	COAL FIRED POWER BOILER	ESP WALTER&CIE	1982	1982	N/A	Electrostatic Precipitator	75	99.6	100
EU0004 – 0006	U4;U5 and U6	40HQF 50HQF 60HQF	COAL FIRED POWER BOILER	ESP WALTER&CIE	1982	1982	N/A	Electrostatic Precipitator	75	99.6	100

EU0001 - EU003	U1;U2 and U3	10HQT 20HQT 30HQT	COAL FIRED POWER BOILER	SO3 CHEMITHON	1997	1997	N/A	SO3 Plant	75	99.6	100
EU0004 – 0006	U4;U5 and U6	40HQT 50HQT 60HQT	COAL FIRED POWER BOILER	SO3 CHEMITHON	1997	1997	N/A	SO3 Plant	75	99.6	100

7.2. Reporting Group / Emission Unit – Maximum Emission Rates (Under Normal working conditions)

Point Source Code	Pollutant Name	Maximum Release Rate			Duration of Emissions
		(mg/Nm³)	Date to be Achieved By	Average Period (Hours)	
U1,U2,U3 ,U4,U5& U6	Particulate Matter	100	Immediately	24	00:00 – 24:00
		50	1 April 2020	24	00:00 – 24:00
	SO_2	3 500	Immediately	24	00:00 – 24:00

		500	1 April 2020	24	00:00 – 24:00
	NO_X	1100	Immediately	24	00:00 – 24:00
		750	1 April 2020	24	00:00 – 24:00

Section 21 Subcategory	Condition	Selected Child Condition(s)
Reporting Group – operating requirements		

7.3. Reporting Group / Emission Unit – maximum emission rates (under start-up, maintenance and shut-down conditions)

RG/EU Code	Activity	Pollutant Name	Maximum Release Rate (mg/Nm^3)	Date to be Achieved By	Average Period (Drop-down: Instantaneous, Hourly, Daily, Monthly, Annually)	Maximum Gas Volumetric Flow (Nm^3/s)	Maximum Gas Exit Velocity (m/s)	Emission Hours (hr)	Permitted Duration of Emissions
EU0001 EU0002 EU0003	SA0101	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

EU0004 EU0005 EU0006	

Point Source – Maximum Emission Rates (Under Start-up, Maintenance and Shut-down conditions)
The following conditions must be adhered to at a minimum during start-up, maintenance and shut-down conditions:

7.3.1 The Licence Holder must take all reasonable measures to control atmospheric emissions during start-up, maintenance and shut-down operations;

7.3.2 Normal maintenance, upset and shut-down conditions shall not exceed a period of forty eighty (48) hours. Should maintenance, upset and shut down conditions exceed a period of 48 hours, section 30 of the National Environmental Management Act, 107 of 1998 (as amended) shall apply.
7.3.3 Particulate Matter and gaseous emissions should be below the limit value within 48 hours of synchronising with the grid during a hot start, and below the limit value within 72 hours of synchronising with the grid during a cold start.
7.3.4 Should start-up exceed the period in 7.3.3, section 30 of the National Environmental Management Act, 107 of 1998(as amended) shall apply.
7.3.5 Reporting on particulate emissions to commence 24 hours after the unit has synchronized with the grid during start –up.
7.3.6 During start-up, maintenance and shut-down, or in the event where there is an indication of adverse impacts to human health and/ or the environment, the Licence Holder must take appropriate measures to avoid such adverse impacts from occurring and/ or recurring;
7.3.7 In order to put into effect the provisions of section 42 of the Act, the Licensing Authority may from time to time review the conditions set herein and may set maximum emission limits to be adhered to by the Licence Holder during start-up, maintenance and shut-down conditions.
7.3.8 The licence holder must report abatement equipment utilisation and operational efficiency monthly.
7.3.9 Abatement equipment must be maintained to ensure that it is fully operational when the associated boiler is under normal operating conditions. The utilization values stated in Table 7.1 are applicable when the associated boiler is under normal operating conditions

Section 21 Subcategory	**Condition**	**Selected Child Condition(s)**
Reporting Group / Emission Unit – Operating Requirements		

7.4. Reporting Group / Emission Unit – Emission Monitoring and Reporting Requirements

RG/EU Code	Activity	Pollutant	Emission Sampling / Monitoring Method	Sampling Testing Frequency	Average Monitoring Duration (Hours)	Parameters to be Measured	Parameters to be Reported	Reporting Frequency
EU0001 to 0006	SA0101	PM, SO2 and NOx expressed as NO2	Isokinetic Sampling	Annually	3	As per Annexure A of the GN893 of 22 November 2013	As per Annexure A of the GN893 of 22 November 2013	Annually
EU 0001 to 0006	SA0101	PM, SO2 and NOx expressed as NO2	Continuous	Continuous	24	PM, SO2 and NOx expressed as NO2	PM, SO2 and NOx expressed as NO2	Monthly

Section 21 Subcategory	Condition	Condition Detail(s)

7.5. Reporting Group / Emission Unit (Area and/or line source) – Management and Mitigation Measures

RG/EU Code	Area and/or Line Source Description	Description of Specific Measures	Timeframe for Achieving Required Control Efficiency	Method of Monitoring Measures Effectiveness	Contingency Measures
A1	Coal stockyard	Stock pile compaction and water bowsers Water sprayers and water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigation reports
A2	Ash dump	Stock pile compaction and water bowsers Water sprayers and water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigation reports
A3	Continuous Ash Dump	Water bowsers Regular watering of exposed ash	When Operation commences	Visual inspection and fugitive dust monitoring to commence as per	Recommendations stipulated on the Dust Management Plan as per investigations reports

				fugitive management plan	
A4	Emergency Ash Dump	Water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigations reports
A5	Unpaved road round the coal stock yard	Water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigations reports
A6	Unpaved road around the ash dump	Water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigations reports
A7	Unpaved road to the Emergency Ash Dump	Water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigations reports
A8	Unpaved road to the dirty dam	Water bowsers	Immediate	Visual inspection and fugitive dust monitoring to continue as per fugitive management plan	Recommendations stipulated on the Dust Management Plan as per investigations reports

7.6. Routine reporting and record-keeping

Complaints register

The licence holder must maintain a complaints register at its premises, and such register must be made available for inspections. The complaints register must include the following information on the complainant, namely, the name, physical address, telephone number, date and the time when the complaint was registered. The register should also provide space for noise, dust and offensive odours complaints.
Furthermore, the licence holder is to investigate and, monthly, report to the licencing authority in a summarised format on the total number of complaints logged. The complaints must be reported in the following format with each component indicated as may be necessary:

(a) Source code / name;
(b) Root cause analysis;
(c) Calculation of impacts / emissions associated with incidents and dispersion modelling of pollutants, where applicable;
(d) Measures implemented or to be implemented to prevent recurrence; and
(e) Date by which measure will be implemented.

The licensing authority must also be provided with a copy of the complaints register. The record of a complaint must be kept for at least 5 (five) years after the complaint was made.

Annual reporting

The licence holder must complete and submit to the licensing authority an annual report. The report must include information for the year under review (i.e. annual year end of the company). The report must be submitted to the licensing authority not later than 60 (sixty) days after the end of each reporting period. The annual report must include, amongst others, the following items:

(a) Pollutant emissions trend;
(b) Compliance audit report(s);
(c) Major upgrades projects if any (i.e. abatement equipment or process equipment); and
(d) Greenhouse gas emissions.

The holder of the licence must keep a copy of the annual report for a period of at least 5 (five) years.

7.7. Investigation

The following investigations are required:

Investigation	Purpose	Completion Date
Determine emissions during upset conditions which are start, maintenance and shut-down. Emission of all pollutants must be measured during start-up most preferably.	To determine emissions during upset conditions. The data will be used for annual atmospheric emission inventory reporting.	30 April 2020
Determine emissions for area sources. Emissions from area sources should be modelled to estimate emissions from area sources.	To determine emissions from area sources. The data will be used for annual atmospheric emission inventory.	30 April 2020

8. DISPOSAL OF WASTE AND EFFLUENT ARISING FROM ABATEMENT EQUIPMENT CONTROL TECHNOLOGY

The disposal of any waste and effluent arising from the abatement equipment control technology must comply with the relevant legislation and requirements of the relevant authorities.

EU Code	Source Name	Waste / Effluent Type	Hazardous Components Present	Method of Disposal
N/A	Sulphur common plant	Solid Sulphur	Sulphur	Hazardous waste site
EU0001 to EU0006	Boiler plant	Ash	Heavy Metal	Ash dump

9. PENALTIES FOR NON-COMPLIANCE WITH LICENCE AND STATUTORY CONDITIONS OR REQUIREMENTS

Failure to comply with any of the licence and relevant statutory conditions and/or requirements is an offence, and licence holder, if convicted, will be subjected to those penalties as set out in section 52 of the AQA.

10. APPEAL OF LICENCE

10.1. The licence holder must notify every registered interested and affected party, in writing and within ten (10) days, of receiving the Municipal decision.

10.2 The notification referred to in 10.1. must:

10.3 Inform the registered interested and affected party of the appeal procedure provided for in Municipal Systems Act.

10.4 Advise the interested and affected party that a copy of the Atmospheric Emission Licence and reasons for the decision will be furnished on request;

10.5 An appeal against the decision must be lodged in terms of Section 62 of the Municipal system act with the Appeal Authority: Nkangala District Municipality, P.O. Box 437, Middleburg, 1050. Tel No. 013 249 2000 Fax No. 013 249 2173

10.6 Specify the date on which the licence was issued.

M M SKOSANA

MUNICIPAL MANAGER

DATE