(22 November 2013 - to date)

NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT 39 OF 2004

(Gazette No. 27318, Notice No. 163. Commencement date: 11 September 2005 – save for sections 21, 22, 36 to 49, 51(1)(e), 51(1)(f), 51(3), 60 and 61 [Government Notice R898, Gazette No. 28016]

LIST OF ACTIVITIES WHICH RESULT IN ATMOSPHERIC EMISSIONS WHICH HAVE OR MAY HAVE A SIGNIFICANT DETRIMENTAL EFFECT ON THE ENVIRONMENT, INCLUDING HEALTH, SOCIAL CONDITIONS, ECONOMIC CONDITIONS, ECOLOGICAL CONDITIONS OR CULTURAL HERITAGE

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I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby amend the list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage published under Government Notice No, 248, Gazette No. 33064 dated 31 March 2010, in terms of section 21(1)(b) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), set out in the Schedule hereto.

BOMO EDITH EDNA MOLEWA
MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

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Repeal of the list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage, 2010

Short title and commencement

Part 1

Definitions

Definitions

In this Notice a word or expression to which a meaning has been assigned in this Act has that meaning and, unless the context otherwise indicates: -

"Act" means the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004).

"alternative fuels and resources" means general and hazardous wastes which are used to substitute conventional or primary fossil fuels and/or virgin raw materials in cement kilns and other industrial thermal processes.

"atmospheric emission license" means an atmospheric emission license contemplated in Chapter 5 of this Act.

"biomass" means non-fossilised and biodegradable organic material originating from plants, animals and micro-organisms excluding - (a) sewage; and (b) treated or coated wood waste which may contain halogenated organic compounds or heavy metals.

"bottom loading" means the transfer of compounds in a liquid state to a suitable vessel by filling from the bottom by means of bottom valve or from the top utilizing a transfer pipe extended to the bottom of the vessel.

"design capacity" means capacity as installed.

"existing plant" unless where specified, shall mean any plant or process that was legally authorized to operate before 01 April 2010 or any plant where an application for authorisation in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998), was made before 01 April 2010.

"flare" means a combustion device that uses an open flame to burn combustible gases with combustion air provided by ambient air around the flame. Combustion may be steam or air assisted. Flares may be either continuous or intermittent. This term includes both ground and elevated flares.

"fugitive emissions" means emissions to the air from a facility for which an emission license has been issued, other than those emitted from a point source.

"incineration" means any method, technique or process to convert waste to flue gases and residues by means of oxidation.

"licensing authority" means an authority referred to in sections 36(1), (2), (3) or (4) responsible for implementing the licensing system set out in chapter 5 of this act.

"listed activities" includes the singular.

"new plant" unless where specified, shall mean any plant or process where the application for authorisation in terms of the National Environmental Management Act 1998, (Act No.107 of 1998), was made on or after 01 April 2010.

"normal operating condition" means any condition that constitutes operation as designed.

"non-thermal treatment of volatile organic compounds" means the removal of volatile organic compounds through non-combustion processes including but not limited to cryogenic cooling, scrubbing and vapour recovery.

"oxides of nitrogen (NO_x)" means the sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2) expressed as nitrogen dioxide (NO_2)

"particulate matter (PM)" means total particulate matter, that is the solid matter contained in the gas stream in the solid state as well as the insoluble and soluble solid matter contained in entrained droplets in the gas stream, as measured by the appropriate method listed in Annexure A.

"petrochemicals" means ethylene and its polymers, ethylene oxide, ethylene glycol, glycol ethers, ethoxylates, vinyl acetate, 1,2-dichloroethane, trichloroethylene, tetrachloroethylene, vinyl chloride, propylene, propyl alcohols, acrylonitrile, propylene oxide, isomers of butylene, butyl ethers, butadienes, polyolefins and alpha-olefins, all alcohols (except those produced during the production of beverages), acrylic acid, allyl chloride, epichlorohydrin, benzene and alkylbenzenes, toluene, o-, m- and p-xylene, ethylbenzene, styrene, cumene, phenols, acetone, cyclohexane, adipic acid, nitrobenzene, chlorobenzene, aniline, methylene diphenyl diisocyanate (mdi), toluene di-isocyanate or other di-isocynates of comparable volatility, benzoic acid.

"point source" means a single identifiable source and fixed location of atmospheric emission, and includes smoke stacks and residential chimneys.

"point of compliance" means any point within the off gas line, where a sample can be taken, from the last vessel closest to the point source of an individual listed activity to the open-end of the point source or in the case of a combinations of listed activities sharing a common point source, any point from the last vessel closest to the point source up to the point within the point source prior to the combination/interference from another Listed Activity.

"pyrolysis" means the decomposition of a material by heat in the absence of oxygen.

"SANAS" means the South African National Accreditation System established by Section 3 of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act No. 19 of 2006).

"sulphur recovery plant" means a unit that processes sulphur containing gags obtained from the processing of crude mineral oil or the coking or gasification of coal and produces a final product of sulphur containing compounds.

"thermal treatment" means incineration, co-processing and other high temperature treatment of hazardous and general waste.

"thermal treatment of volatile organic compounds" means the destruction of volatile organic compounds through combustion processes.

"total volatile organic compounds" means organic compounds listed under US- EPA Compendium Method TO -14.

"upset conditions" means any temporary failure of air pollution control equipment or process equipment or failure of a process to operate in a normal or usual manner that leads to an emission standard being exceeded.

Part 2
General

Applicability of the Notice

(1) Minimum emission standards as contained in this Notice shall apply to both permanently operated plants and for experimental (pilot) plants with a design capacity equivalent to the one of a listed activity.

(2) Minimum emission standards are applicable under normal operating conditions.

(3) Should normal start-up, maintenance, upset and shut-down conditions exceed a period of 48 hours, Section 30 of the National Environmental Management, 1998 (Act No. 107 of 1998), shall apply unless otherwise specified by the Licensing Authority.

Averaging Period

(4) Unless where otherwise specified, minimum emission standards are expressed on a daily average basis, under normal conditions of 273 K, 101.3 kPa, specific oxygen percentage and dry gas.

Emission measurement

(5) The manner in which measurements of minimum emissions standards, as required by Section 21(3)(a)(ii) of this Act, shall be carried out must be in accordance with the standard sampling and analysis methods listed in Annexure A of this Notice.

(6) Methods other than those contained in Annexure A may be used with the written consent of the National Air Quality Officer.

(7) In seeking the written consent referred to in paragraph (6), an applicant must provide the National Air Quality Officer with any information that supports the equivalence of the method other than that contained in Annexure A to a method contained in Annexure A.

Compliance time frames

(8) New plant must comply with the new plant minimum emission standards as contained in Part 3 from 01 April 2010.

(9) Existing plant must comply with minimum emission standards for existing plant as contained in Part 3 by 01 April 2015, unless where specified.

(10) Existing plant must comply with minimum emission standards for new plant as contained in Part 3 by 01 April 2020, unless where specified.

Postponement of compliance time frames

(11) As contemplated in the National Framework for Air Quality Management in the Republic of South Africa, published in terms of Section 7 of this Act, an application may be made to the National Air Quality Officer for the postponement of the compliance time frames in paragraphs (9) and (10) for an existing plant.

(12) The application contemplated in paragraph (11) must include-

(a) An air pollution impact assessment compiled in accordance with the regulations prescribing the format of an Atmospheric Impact Report (as contemplated in Section 30 of the AQA), by a person registered as a professional engineer or as a professional natural scientist in the appropriate category;

(b) a detailed justification and reasons for the application; and

(c) a concluded public participation process undertaken as specified in the NEMA Environmental Impact Assessment Regulations.

(13) The National Air Quality Officer, with the concurrence of the Licensing Authority as contemplated in Section 36 of this Act, may grant a postponement of the compliance time frames in paragraphs (9) and (10) for an existing plant for a period, not exceeding 5 years per postponement.

(14) The National Air Quality Officer, with the concurrence of the Licensing Authority, may -

(a) from time to time review any postponement granted in terms of paragraph (13) should ambient air quality conditions in the affected area of the plant not conform to ambient air quality standards; and

(b) on good grounds, withdraw any postponement following -

(i) representations from the affected plant; and

(ii) representations from the affected communities.

Compliance monitoring

(15) Where continuous emission monitoring is required for a listed activity -

(a) the averaging period for the purposes of compliance monitoring shall be expressed on a daily average basis or as prescribed in the Atmospheric Emission License.

(b) the emission monitoring system must be maintained to yield a minimum of 80% valid hourly average values during the reporting period.

(c) the emission monitoring system must be maintained and calibrated as per the original equipment manufacturers' specifications.

(d) continuous emission monitoring systems must be audited by a SANAS accredited laboratory at least once every two (2) years.

(16) Where periodic emission monitoring is required for a listed activity -

(a) the averaging period for the purposes of compliance monitoring shall be expressed on a hourly average basis or as prescribed in the Atmospheric Emission License.

(b) emission measurement will be conducted in accordance with paragraphs (5); (6); and (7) of this notice.

(c) measurements shall take place on, at least, an annual basis unless otherwise prescribed in the Atmospheric Emission License.

(d) sampling will take place under normal operating conditions using the permitted feed-stock or raw material.

(e) all tests will be conducted by SANAS accredited laboratories or laboratories accredited by similar foreign authorities.

Reporting Requirements

(17) Notwithstanding the compliance time frames established in terms of paragraphs (8); (9); and (10), the Atmospheric Emission License holder shall submit an emission report in the form specified by the National Air Quality Officer to the Licensing Authority -

(a) within one (1) year of the date of publication of this Notice; and

(b) annually thereafter unless otherwise prescribed in the Atmospheric Emission License.

(18) The report contemplated in paragraph (17) shall include-

(a) The name, description and license reference number of the plant as reflected in the Atmospheric Emission License.

(b) Where periodic emission monitoring is required for a listed activity, the report contemplated in paragraph (17) shall further include -

(i) the name and address of the accredited measurement service-provider that carried out or verified the emission test, including the test report produced by the accredited measurement service-provider;

(ii) the date and time on which the emission test was carried out;

(iii) a declaration by the Atmospheric Emission License holder to the effect that normal operating conditions were maintained during the emission tests;

(iv) the total volumetric flow of gas, expressed in normal cubic meters (Nm^3) per unit time and mass flow (kg per unit time) being emitted by the listed activity or activities measured during the emission test, as the average of at least three (3) measurements;

(v) the concentration or mass of pollutant for which emissions standards have been set in this Notice emitted by listed activity or activities as the average of at least three (3) measurements; each measured over a minimum sample period of 60 minutes and a maximum of 8 hours to obtain a representative sample, and

(vi) the method or combination of methods used for determining the flow rate and concentration as contemplated in paragraphs (5); (6); and (7).

(c) Where continuous emission monitoring is required for a listed activity, the report contemplated in paragraph (17) shall further include -

(i) results of the spot measurements or correlation tests carried out to verify the accuracy of the continuous emission measurements;

(ii) the most recent correlation tests; and

(iii) the availability of the system as contemplated in (15)(b) in terms of the number of full hours per annum that valid results were obtained.

(d) Following the compliance time frames established in terms of paragraphs (8); (9); and (10), an explanation of all instances where minimum emission standards were exceeded and remediation measures and associated implementation plans aimed at ensuring that the accidences do not re-occur.

(e) Any other relevant information as required by the National Air Quality Officer from time to time.

(19) In January 2014, the National Air Quality Officer will establish an internet-based National Atmospheric Emissions Inventory System. Once established, the reports contemplated in paragraph (17) must be made in the format required for the internet-based National Atmospheric Emissions Inventory System.

General special arrangement

(20) A fugitive emissions management plan must be included in the Atmospheric Emission Licenses for listed activities that are likely to generate such emissions.

Part 3
Minimum Emission Standards

Category 1
Combustion Installations

(1) Subcategory 1.1: Solid Fuel Combustion Installations

Description:	Solid fuels combustion installations used primarily for steam raising or electricity generation		
Application:	All installations with design capacity equal to or greater than 50 MW heat input per unit, based on the lower calorific value of the fuel used.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical**		

	symbol		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	3500
Oxides of nitrogen	NO_X expressed as NO_2	New	750
		Existing	1100

(a) The following special arrangement shall apply -

(i) Continuous emission monitoring of PM, SO_2 and NOx is required, however, installations less than 100 MW heat input per unit must adhere to periodic emission monitoring as stipulated in Part 2 of this Notice.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(2) Subcategory 1.2: Liquid Fuel Combustion Installations

Description:	Liquid fuels combustion installations used primarily for steam raising or electricity generation.		
Application:	All installations with design capacity equal to or greater than 50 MW heat input per unit, based on the lower calorific value of the fuel used.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 3% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	75
Sulphur dioxide	SO_2	New	500
		Existing	3500
Oxides of nitrogen	NO_X expressed as NO_2	New	250
		Existing	1100

(a) The following special arrangements shall apply -

(i) Reference conditions for gas turbines shall be 15% 02, 273K and 101.3kPa

(ii) Continuous emission monitoring of PM, SO_2 and NO_X is required, however, installations less than 100 MW heat input per unit must adhere to periodic emission monitoring as stipulated in Part 2 of this Notice.

(iii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(3) Subcategory 1.3: Solid Biomass Combustion Installations

Description:	Solid biomass fuel combustion installations used primarily for steam raising or electricity generation.		
Application:	All installations with design capacity equal to or greater than 50 MW heat input per unit, based on the lower calorific value of the fuel used.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	3500
Oxides of nitrogen	NO_X expressed as NO_2	New	750
		Existing	1100

(a) The following special arrangements shall apply -

(i) Continuous emission monitoring of PM, SO_2 and NO_X is required, however, installations less than 100 MW heat input per unit must adhere to periodic emission monitoring as stipulated in Part 2 of this Notice.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(4) Subcategory 1.4: Gas Combustion Installations

Description:	Gas combustion (including gas turbines burning natural gas) used primarily for steam raising or electricity generation.
Application:	All installations with design capacity equal to or greater than 50 MW heat input per unit, based on the lower calorific value of the fuel used.

Substance or mixture of substances		Plant status	mg/Nm^3 under normal conditions of 3% O_2 , 273 Kelvin and 101.3 kPa.
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	10
Sulphur dioxide	SO_2	New	400
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	50
		Existing	300

(a) The following special arrangements shall apply -

(i) Reference conditions for gas turbines shall be 15% 02, 273K and 101.3kPa.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(5) Subcategory 1.5: Reciprocating Engines

Description:	Liquid and gas fuel stationary engines used for electricity generation.		
Application:	All installations with design capacity equal to or greater than 10 MW heat input per unit, based on the lower calorific value of the fuel used.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 15% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	50
Oxides of nitrogen	NO_X expressed as NO_2	New	2000* 400**
		Existing	2000* 400**
Sulphur dioxide	SO_2	New	1170*
		Existing	1170*
*Liquid fuels fired **Gas fired			

(6) Subcategory 1.6: Waste Co-feeding Combustion Installations

Description:	Combustion installations co-feeding waste with conventional fuels in processes used

	primarily for steam raising or electricity generation.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Carbon monoxide	CO	New	50
		Existing	75
Hydrogen chloride	HCl	New	10
		Existing	10
Hydrogen fluoride	HF	New	1
		Existing	1
Sum of Lead, arsenic, antimony, chromium, cobalt, copper, manganese, nickel, vanadium	Pb+ As+ Sb+ Cr+ Co+ Cu + Mn+ Ni+ V	New	0.5
		Existing	0.5
Mercury	Hg	New	0.05
		Existing	0.05
Cadmium Thallium	Cd+Tl	New	0.05
		Existing	0.05
Total organic compounds	TOC	New	10
		Existing	10
Ammonia	NH_3	New	10
		Existing	10
			ng I-TEQ /Nm^3 under normal conditions of 10% O_2, 273 Kelvin and 101.3 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

Category 2

Petroleum Industry, the production of gaseous and liquid fuels as well as petrochemicals from crude oil, coal, gas or biomass

(1) Subcategory 2.1: Combustion Installations

Description:	Combustion installations not used primarily for steam raising or electricity generation (furnaces and heaters).		
Application:	All refinery furnaces and heaters		
Substance or mixture of substances			

Common name	Chemical symbol	Plant status	mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.
Particulate matter	N/A	New	70
		Existing	120
Oxides of nitrogen	NO_X expressed as NO_2	New	400
		Existing	1700
Sulphur dioxide	SO_2	New	1000
		Existing	1700

(a) The following special arrangements shall apply -

i) No continuous flaring of hydrogen sulphide-rich gases shall be allowed.

ii) A bubble cap of all Combustion Installations and Catalytic Cracking Units shall be at 1.2 Kg SO_2/ ton for existing plants.

iii) A bubble cap of all Combustion Installations and Catalytic Cracking Units shall be at 0.4 Kg SO_2/ ton for new plants.

(2) Subcategory 2.2: Catalytic Cracking Units

Description:	Refinery catalytic cracking units		
Application:	All installations.		
Substance or mixture of substances			
Common name	**Chemical symbol**	**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Particulate matter	N/A	New	100
		Existing	120
Oxides of nitrogen	NO_X expressed as NO_2	New	400
		Existing	550
Sulphur dioxide	SO_2	New	1500
		Existing	3000

(a) The following special arrangements shall apply -

i) A bubble cap of all Combustion Installations and Catalytic Cracking Units shall be at 1.2 Kg SO_2/ ton for existing plants.

ii) A bubble cap of all Combustion Installations and Catalytic Cracking Units shall be at 0.4 Kg SO_2/ ton for new plants.

(3) Subcategory 2.3: Sulphur Recovery Units

Description:	Sulphur Recovery Units		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Hydrogen Sulphide	H_2S		a
			a

(a) The following special arrangement shall apply -

Sulphur recovery units should achieve 95% recovery efficiency and availability of 99%.

(4) Subcategory 2.4: Storage and Handling of Petroleum Products

(a) The following transitional arrangement shall apply for the storage and handling of raw materials, intermediate and final products with a vapour pressure greater than 14kPa at operating temperature: -

Leak detection and repair (LDAR) program approved by licensing authority to be instituted, by 01 January 2014.

(b) The following special arrangements shall apply for control of TVOCs from storage of raw materials, intermediate and final products with a vapour pressure of up to 14kPa at operating temperature, except during loading and offloading. (Alternative control measures that can achieve the same or better results may be used) -

(i) Storage vessels for liquids shall be of the following type:

Application	All permanent immobile liquid Storage facilities at a single site with a combined storage capacity of greater-than 1000 Cubic meters.
True vapour pressure of contents at product storage temperature	**Type of tank or vessel**
Type 1: Up to 14 kPa	Fixed-roof tank vented to atmosphere, or as per Type 2 and 3

Type 2: Above 14 kPa and up to 91 kPa with a throughput of less than 50'000 m^3 per annum	Fixed-roof tank with Pressure Vacuum Vents fitted as a minimum, to prevent "breathing" losses, or as per Type 3
Type 3: Above 14 kPa and up to 91 kPa with a throughput greater than 50'000 m^3 per annum	a) External floating-roof tank with primary rim seal and secondary rim seal for tank with a diameter greater than 20m, or b) fixed-roof tank with internal floating deck / roof fitted with primary seal, or c) fixed-roof tank with vapour recovery system.
Type 4: Above 91 kPa	Pressure vessel

(ii) The roof legs, slotted pipes and/or dipping well on floating roof tanks (except for domed floating roof tanks or internal floating roof tanks) shall have sleeves fitted to minimise emissions.

(iii) Relief valves on pressurised storage should undergo periodic checks for internal leaks. This can be carried out using portable acoustic monitors or if venting to atmosphere with an accessible open end, tested with a hydrocarbon analyser as part of an LDAR programme.

(c) The following special arrangements shall apply for control of TVOCs from the loading and unloading (excluding ships) of raw materials, intermediate and final products with a vapour pressure of greater than 14kPa at handling temperature. Alternative control measures that can achieve the same or better results may be used:

(i) All installations with a throughput of greater than 50'000 m3 per annum of products with a vapour pressure greater than 14 kPa, must be fitted with vapour recovery / destruction units. Emission limits are set out in the table below -

Description:	Vapour Recovery Units		
Application:	All loading/ offloading facilities with a throughput greater than 50 000 m3		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Total volatile organic compounds from vapour recovery/ destruction units using thermal treatment.	N/A	New	150
		Existing	150
Total volatile organic compounds from vapour recovery/ destruction units	N/A	New	40 000
		Existing	40 000

using non-thermal treatment.			

(ii) For road tanker and rail car loading / offloading facilities where the throughput is less than 50'000 m^3 per annum, and where ambient air quality is, or is likely to be impacted, all liquid products shall be loaded using bottom loading, or equivalent, with the venting pipe connected to a vapour balancing system. Where vapour balancing and / or bottom loading is not possible, a recovery system utilizing adsorption, absorption, condensation or incineration of the remaining VOC's, with a collection efficiency of at least 95%, shall be fitted.

(5) Subcategory 2.5: Industrial Fuel Oil Recyclers

Description:	Installations used to recycle or recover oil from waste oils.		
Application:	Industrial fuel oil recyclers with a throughput > 5000 ton/month.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Carbon monoxide	CO	New	130
		Existing	250
Sulphur dioxide	SO_2	New	500
		Existing	3500
Total volatile organic compounds from vapour recovery/destruction units.	N/A	New	40
		Existing	90

(a) The following transitional arrangement shall apply for the storage and handling of raw materials, intermediate and final products with a vapour pressure greater than 14kPa at operating temperature: -

Leak detection and repair (LDAR) program approved by licensing authority to be instituted, by 01 January 2014.

(b) The following special arrangements shall apply for control of TVOCs from storage of raw materials, intermediate and final products with a vapour pressure of up to 14kPa at operating temperature, except during loading and offloading. (Alternative control measures that can achieve the same or better results may be used) -

(i) Storage vessels for liquids shall be of the following type:

Application	All permanent immobile liquid Storage facilities at a single site with a combined storage capacity of greater-than 1000 Cubic meters.
True vapour pressure of contents at product storage temperature	**Type of tank or vessel**
Type 1: Up to 14 kPa	Fixed-roof tank vented to atmosphere, or as per Type 2 and 3
Type 2: Above 14 kPa and up to 91 kPa with a throughput of less than 50'000 m3 per annum	Fixed-roof tank with Pressure Vacuum Vents fitted as a minimum, to prevent "breathing" losses, or as per Type 3
Type 3: Above 14 kPa and up to 91 kPa with a throughput greater than 50'000 m3 per annum	d) External floating-roof tank with primary rim seal and secondary rim seal for tank with a diameter greater than 20m, or e) fixed-roof tank with internal floating deck / roof fitted with primary seal, or f) fixed-roof tank with vapour recovery system.
Type 4: Above 91 kPa	Pressure vessel

(ii) The roof legs, slotted pipes and/or dipping well on floating roof tanks (except for domed floating roof tanks or internal floating roof tanks) shall have sleeves fitted to minimise emissions.

(iii) Relief valves on pressurised storage should undergo periodic checks for internal leaks. This can be carried out using portable acoustic monitors or if venting to atmosphere with an accessible open end, tested with a hydrocarbon analyser as part of an LDAR programme.

(c) The following special arrangements shall apply for control of TVOCs from the loading and unloading (excluding ships) of raw materials, intermediate and final products with a vapour pressure of greater than 14kPa at handling temperature. Alternative control measures that can achieve the same or better results may be used:

(i) All installations with a throughput of greater than 50'000 m^3 per annum of products with a vapour pressure greater than 14 kPa, must be fitted with vapour recovery / destruction units.

(ii) For road tanker and rail car loading / offloading facilities where the throughput is less than 50'000 m^3 per annum, and where ambient air quality is, or is likely to be impacted, all liquid products shall be loaded using bottom loading, or equivalent, with the venting pipe connected to a vapour balancing system. Where vapour balancing and / or bottom loading is not possible, a recovery system utilizing adsorption, absorption, condensation

or incineration of the remaining VOC's, with a collection efficiency of at least 95%, shall be fitted.

Category 3

Carbonization and Coal Gasification

(1) Subcategory 3.1: Combustion Installations

Description:	Combustion installations not used primarily for steam raising or electricity generation.		
Application:	All combustion installations (except test or experimental installations).		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Oxides of nitrogen	NO_X expressed as NO_2	New	700
		Existing	2000
Total volatile organic compounds (from non-coke oven operations)	N/A	New	40
		Existing	90

(a) The following special arrangements shall apply -

(i) Sulphur-containing compounds to be recovered from gases to be used for combustion with a recovery efficiency of not less than 90% or remaining content of inorganic sulphur-containing compounds to be less than 1000 mg/Nm^3 measured as hydrogen sulphide, whichever is strictest.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(2) Subcategory 3.2: Coke Production

Description:	Coke production and by-product recovery.		
Application:	All installations		
Substance or mixture of substances		**Plant**	**mg/Nm^3 under normal conditions of 273**
Common name	**Chemical**		

	symbol	**status**	**Kelvin and 101.3 kPa.**
Hydrogen sulphide	H_2S	New	7(i)
		Existing	10(i)
Notes:	(i) from point source		

(3) Subcategory 3.3: Tar Processes

Description:	Processes in which tar, creosote or any other product of distillation of tar is distilled or is heated in any manufacturing process.		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Total Volatile Organic Compounds	N/A	New	130
		Existing	250

(a) The following transitional arrangement shall apply for the storage and handling of raw materials, intermediate and final products with a vapour pressure greater than 14kPa at operating temperature: -

Leak detection and repair (LDAR) program approved by licensing authority to be instituted, by 01 January 2014.

(b) The following special arrangements shall apply for control of TVOCs from storage of raw materials, intermediate and final products with a vapour pressure of up to 14kPa at operating temperature, except during loading and offloading. (Alternative control measures that can achieve the same or better results may be used) -

(i) Storage vessels for liquids shall be of the following type:

Application	All permanent immobile liquid Storage facilities at a single site with a combined storage capacity of greater-than 1000 Cubic meters.
True vapour pressure of contents at product storage temperature	**Type of tank or vessel**
Type 1: Up to 14 kPa	Fixed-roof tank vented to atmosphere, or as per Type 2 and 3
Type 2: Above 14 kPa and up to 91 kPa with a	Fixed-roof tank with Pressure Vacuum Vents fitted as a

throughput of less than 50'000 m3 per annum	minimum, to prevent "breathing" losses, or as per Type 3
Type 3: Above 14 kPa and up to 91 kPa with a throughput greater than 50'000 m3 per annum	g) External floating-roof tank with primary rim seal and secondary rim seal for tank with a diameter greater than 20m, or h) fixed-roof tank with internal floating deck / roof fitted with primary seal, or i) fixed-roof tank with vapour recovery system.
Type 4: Above 91 kPa	Pressure vessel

(ii) The roof legs, slotted pipes and/or dipping well on floating roof tanks (except for domed floating roof tanks or internal floating roof tanks) shall have sleeves fitted to minimise emissions.

(iii) Relief valves on pressurised storage should undergo periodic checks for internal leaks. This can be carried out using portable acoustic monitors or if venting to atmosphere with an accessible open end, tested with a hydrocarbon analyser as part of an LDAR programme.

(c) The following special arrangements shall apply for control of TVOCs from the loading and unloading (excluding ships) of raw materials, intermediate and final products with a vapour pressure of greater than 14kPa at handling temperature. Alternative control measures that can achieve the same or better results may be used:

(i) All installations with a throughput of greater than 50'000 m^3 per annum of products with a vapour pressure greater than 14 kPa, must be fitted with vapour recovery / destruction units. Emission limits are set out in the table below -

Description:	Vapour Recovery Units		
Application:	All loading/ offloading facilities with a throughput greater than 50 000 m^3		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Total volatile organic compounds from vapour recovery/ destruction units using thermal treatment.	N/A	New	150
		Existing	150
Total volatile organic compounds from vapour recovery/ destruction	N/A	New	40 000
		Existing	40 000

units using non-thermal treatment.			

(ii) For road tanker and rail car loading / offloading facilities where the throughput is less than 50'000 m^3 per annum, and where ambient air quality is, or is likely to be impacted, all liquid products shall be loaded using bottom loading, or equivalent, with the venting pipe connected to a vapour balancing system. Where vapour balancing and / or bottom loading is not possible, a recovery system utilizing adsorption, absorption, condensation or incineration of the remaining VOC's, with a collection efficiency of at least 95%, shall be fitted.

(4) Subcategory 3.4 Char, Charcoal and Carbon Black Production

Description:	Production of char, charcoal and the production and use of carbon black		
Application:	All installations producing more than 20 tons of char and charcoal All installations consuming more than 20 tons per month of carbon black in any processes		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Poly Aromatic Hydrocarbons	PAH	New	0.1
		Existing	0.5

(5) Subcategory 3.5 Electrode Paste Production

Description:	Electrode paste production.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100

(6) Subcategory 3.6 Synthetic Gas Production and Cleanup

Description:	The production and clean-up of a gaseous stream derived from coal gasification and

	includes gasification, separation and clean up of a raw gas stream through a process that involves sulphur removal and Rectisol as well as the stripping of a liquid tar stream derived from the gasification process.
Application:	All installations

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Hydrogen Sulphide	H_2S	New	3 500
		Existing	4 200
Total Volatile Organic Compounds	N/A	New	130
		Existing	250
Sulphur dioxide	SO_2	New	500
		Existing	3 500

Category 4

Metallurgical Industry

(1) Subcategory 4.1: Drying and Calcining

Description:	Drying and calcining of mineral solids including ore.
Application:	Facilities with capacity of more than 100 tons/month product.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	1000
		Existing	1000
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	1200

(2) Subcategory 4.2: Combustion Installations

Description:	Combustion installations not used for primarily for steam raising and electricity generation (except drying).
Application:	All combustion installations (except test or experimental).

Substance or mixture of substances		**Plant**	**mg/Nm^3 under normal conditions of 273**
Common name	**Chemical**		

	symbol	status	Kelvin and 101.3 kPa.
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO^2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	2000

(a) The following special arrangements shall apply -

(i) Reference oxygen content appropriate to fuel type must be used.

(ii) Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(3) Subcategory 4.3: Primary Aluminium Production

Description:	Primary aluminium production.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	Soderberg (New)	No new plant will be authorised
		Soderberg (Existing)	500
		AP Technology (New)	50
		AP Technology (Existing)	250
Total volatile organic compounds	N/A	New	40
		Existing	40
Total fluorides measured as Hydrogen fluoride	F as HF	New	0.5
		Existing	1

(4) Subcategory 4.4: Secondary Aluminium Production

Description:	Secondary aluminium production and alloying through the application of heat (excluding metal recovery, covered under Subcategory 4.21).		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100
Total fluorides measured as Hydrogen fluoride	F as HF	New	1
		Existing	5
Total volatile organic compounds	N/A	New	40
		Existing	40
Ammonia	NH3	New	30
		Existing	100

(5) Subcategory 4.5: Sinter Plants

Description:	Sinter plants for agglomeration of fine ores using a heating process, including sinter cooling where applicable.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO^2	New	500
		Existing	1000
Oxides of nitrogen	NO_X expressed as NO_2	New	700
		Existing	1200

(6) Subcategory 4.6: Basic Oxygen Furnaces

Description:	Basic oxygen furnaces in the steel making industry.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30

		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	500

(a) The following special arrangement shall apply -

Secondary fume capture installations shall be fitted to all new furnace installations.

(7) Subcategory 4.7: Electric Arc Furnaces (Primary and Secondary)

Description:	Electric arc furnaces in the steel making industry		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	500

(a) The following special arrangement shall apply -

Secondary fume capture installations shall be fitted to all new furnace installations.

(8) Subcategory 4.8: Blast Furnaces

Description:	Blast furnace operations.		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100

Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	500

(a) The following special arrangement shall apply -

Secondary fume capture installations shall be fitted to all new furnace installations.

(9) Subcategory 4.9: Ferro-alloy Production

Description:	Production of alloys of iron with chromium, manganese, silicon or vanadium, the separation of titanium slag from iron-containing minerals using heat.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as NO_2	New	400
		Existing	750
Particulate matter from primary fume capture system, open and semi-closed furnaces			
Particulate matter	N/A	New	30
		Existing	100
Particulate matter from primary fume capture system, closed furnaces			
Particulate matter	N/A	New	50
		Existing	100
Particulate matter from secondary fume capture system, all furnaces			
Particulate matter	N/A	New	50
		Existing	100

(a) The following special arrangements shall apply -

(i) Secondary fume capture installations shall be fitted to all new furnace installations

(ii) Emission of Cr(VI), Mn and V from primary fume captures systems of ferrochrome, ferromanganese and ferrovanadium furnaces respectively to be measured and reported to licensing authority annually.

(10) Subcategory 4.10: Foundries

Description:	Production and or casting of iron, iron ores, steel or ferro-alloys, including the cleaning of castings and handling of casting mould materials.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100
Sulphur dioxide	SO_2	New	400
		Existing	400
Oxides of nitrogen	NO_X expressed as NO_2	New	400
		Existing	1200

(11) Subcategory 4.11: Agglomeration Operations

Description:	Production of pellets or briquettes using presses, inclined discs or rotating drums.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100
Ammonia	NH_3	New	30
		Existing	50

(12) Subcategory 4.12: Pre-Reduction and Direct Reduction

Description:	Production of pre-reduced or metallised ore or pellets using gaseous or solid fuels.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		

Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide (from natural gas)	SO_2	New	100
		Existing	500
Sulphur dioxide (from all other fuels)	SO_2	New	500
		Existing	1700
Oxides of nitrogen	NO_X expressed as NO_2	New (gas based)	500
		New (all other fuels)	1000
		Existing	2000

(13) Subcategory 4.13: Lead Smelting

Description:	The extraction, processing and use of lead in production by the application of heat. The production of lead-containing electric batteries.
Application:	All installations using more than 20 Kg/month. All installations producing lead-containing electric batteries.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	30
Lead	Pb (as fraction of Total Suspended Particles)	New	2
		Existing	2

(14) Subcategory 4.14: Production and Processing of Zinc, Nickel and Cadmium

Description:	The extraction, processing and production of zinc, nickel or cadmium by the application of heat excluding
Application:	All installations.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of nitrogen	NO_X expressed as	New	500
		Existing	500

	NO_2		
Mercury	Hg	New	0,2
		Existing	1,0
Dioxins	PCDD/PCDF	New	0,1ngTEQ
		Existing	No standard proposed

(a) The following transitional arrangement shall apply -

Facilities processing nickel or cadmium shall measure or estimate, using a method to the satisfaction of the licensing authority, and report the emission of Ni and Cd respectively to the licensing authority annually, commencing immediately.

(15) Subcategory 4.15: Processing of Arsenic, Antimony, Beryllium, Chromium and Silicon

Description:	The metallurgical production and processing of arsenic, antimony, beryllium, chromium and silicon and their compounds by the application of heat		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	20
		Existing	30

(16) Subcategory 4.16: Smelting and Converting of Sulphide Ores

Description:	Processes in which sulphide ores are smelted, roasted calcined or converted (Excluding Inorganic Chemicals-related activities regulated under Category 7).		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Oxides of nitrogen	NO_X expressed as NO_2	New	350
		Existing	2000
Sulphur dioxide (feed SO_2 <5% SO_2)	SO_2	New	1200
		Existing	3500
Sulphur dioxide (feed	SO_2	New	1200

SO_2 >5% SO_2)		Existing	2500

(a) The following special arrangement shall apply -

All facilities must install apparatus for the treatment of the sulphur content of the off-gases.

(17) Subcategory 4.17: Precious and Base Metal Production and Refining

Description:	The production or processing of precious and associated base metals through chemical treatment (Excluding Inorganic Chemicals-related activities regulated under Category 7).		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Chlorine	Cl_2	New	50
		Existing	50
Sulphur dioxide	SO_2	New	400
		Existing	400
Hydrogen chloride	HCl	New	30
		Existing	30
Hydrogen fluoride	HF	New	30
		Existing	30
Ammonia	NH_3	New	100
		Existing	100
Oxides of nitrogen	NO_X expressed as NO_2	New	300
		Existing	500

(a) The following special arrangement shall apply -

Thermal treatment standard are not applicable to precious and base metal refining processes.

(18) Subcategory 4.18: Vanadium Ore Processing

Description:	The processing of vanadium-bearing ore or slag for the production of vanadium oxides or vanadium carbide by the application of heat.

Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	50
Sulphur dioxide	SO_2	New	1200
		Existing	3500
Ammonia	NH_3	New	30
		Existing	b

(a) The following transitional arrangement shall apply -

Plants processing vanadium ore or slag for the production of vanadium oxides shall report the emissions of vanadium and its compounds to the licensing authority annually, commencing immediately.

(b) The following special arrangements for ammonia emissions shall apply -

(i) Emission limits for ammonia shall be negotiated with the licensing authority, on the basis of the existing permits and submission of atmospheric impact reports.

(ii) Existing Plants shall submit atmospheric impact reports to the licensing authority on its ammonia impact annually.

(19) Subcategory 4.19: Production and or Casting of Bronze, Brass and Copper

Description:	The production and or casting of bronze, brass and copper.		
Application:	All installations producing more than 10 tons per day of product in aggregate.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	500
		Existing	500
Oxides of Nitrogen	NO_X expressed as NO_2	New	1000
		Existing	1200

(20) Subcategory 4.20: Slag Processes

Description:	The processing or recovery of metallurgical slag by the application of heat.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	1500
		Existing	2500
Oxides of Nitrogen	NO_X expressed as NO_2	New	350
		Existing	2000

(a) The following transitional arrangement shall apply -

Facilities processing slag by the application of heat for the recovery of chromium or manganese content shall report the emissions of Cr(III) and Cr(VI) or Mn and its compounds respectively to the licensing authority annually, commencing immediately.

(21) Subcategory 4.21: Metal Recovery

Description:	The recovery of metal from any form of scrap material by the application of heat.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	25
Carbon monoxide	CO	New	50
		Existing	75
Sulphur dioxide	SO_2	New	50
		Existing	50
Oxides of nitrogen	NO_X expressed as NO_2	New	200
		Existing	200
Hydrogen chloride	HCl	New	10
		Existing	10

Hydrogen fluoride	HF	New	1
		Existing	1
Sum of Lead, arsenic, antimony, chromium, cobalt, copper, manganese, nickel, vanadium	Pb+ As+ Sb+ Cr+ Co+ Cu + Mn+ Ni+ V	New	0.5
		Existing	0.5
Mercury	Hg	New	0.05
		Existing	0.05
Cadmium Thallium	Cd+TI	New	0.05
		Existing	0.05
Total organic compounds	N/A	New	10
		Existing	10
Ammonia	NH_3		10
			10
			Ng I-TEQ /Nm^3 under normal conditions of 10% O_2, 2.73 and 1013 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

(22) Subcategory 4.22: Hot Dip Galvanizing

Description:	The coating of steel articles with zinc using molten zinc, including the pickling and/or fluxing of articles before coating.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	15
Hydrogen Chloride	HCl	New	30
		Existing	30

(23) Subcategory 4.23: Metal Spray

Description:	The coating of metals using molten metal.		
Application:	All installations.		
Substance or mixture of substances		**Plant**	**mg/Nm^3 under normal conditions of 273**
Common name	**Chemical**		

	symbol	status	Kelvin and 101.3 kPa.
Particulate matter	N/A	New	30
		Existing	50

Category 5

Mineral Processing, Storage and Handling

(1) Subcategory 5.1: Storage and Handling of Ore and Coal

Description:	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.		
Application:	Locations designed to hold more than 100 000 tons.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Dustfall	N/A	New	a
		Existing	a
[a] three months running average not to exceed limit value for adjacent land use according to dust control regulations promulgated in terms of section 32 of the NEM: AQA, 2004 (Act No. 39 of 2004), in eight principal wind directions.			

(2) Subcategory 5.2: Drying

Description:	The drying of mineral solids including ore, using dedicated combustion installations.		
Application:	Facilities with a capacity of more than 100 tons/month product.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Sulphur dioxide	SO_2	New	1000
		Existing	1000
Oxides of Nitrogen	NO_X expressed as NO_2	New	500
		Existing	1200

(3) Subcategory 5.3: Clamp Kilns for Brick Production

Description:	The production of bricks using clamp kilns.		
Application:	All installations producing more than 10 000 bricks per month.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Dust fall	N/A	New	a
		Existing	a
Sulphur dioxide	SO_2	New	b
		Existing	b
[a] three months running average not to exceed limit value for adjacent land use according to dust control regulations promulgated in terms of section 32 of the NEM: AQA, 2004 (Act No. 39 of 2004), in eight principal wind directions.			
[b] Twelve months running average not to exceed limit value as per GN 1210 of 24 December 2009. Passive diffusive measurement approved by the licensing authority carried out monthly.			

(a) The following special arrangement shall apply -

Where co-feeding with waste materials with calorific value allowed in terms of the Waste Disposal Standards published in terms of the Waste Act, 2008 (Act No.59 of 2008) occurs, additional requirements under subcategory 1.6 shall apply.

(4) Subcategory 5.4: Cement Production (using conventional fuels and raw materials)

Description:	The preparation of raw materials, production and cooling of Portland cement clinker; grinding and blending of clinker to produce finished cement; and packaging of finished cement.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter (Separate Raw Mill)	N/A	New	30
		Existing	50
Particulate matter (Kiln)	N/A	New	50
		Existing	100
Particulate matter (Cooler ESP)	N/A	New	100
		Existing	150
Particulate matter (Cooler BF)	N/A	New	50
		Existing	50
Particulate matter (Clinker grinding)	N/A	New	30
		Existing	50

Sulphur dioxide	SO2	New	250
		Existing	250
Oxides of nitrogen	NO_X expressed as NO_2	New	1200
		Existing	2000

(b) The following special arrangement shall apply -

Emissions from cooling, grinding and fugitive dust capture processes are not subject to the oxygen content reference condition.

(5) Subcategory 5.5: Cement Production (using alternative fuels and/or resources)

Description:	The production and cooling of Portland cement clinker; grinding and blending of clinker to produce finished cement where alternative fuels and/or resources are used.
Application:	All installations.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter (Separate Raw Mill)	N/A	New	30
		Existing	50
Particulate matter (Clinker grinding)	N/A	New	30
		Existing	50
Particulate matter (Cooler ESP)	N/A	New	100
		Existing	150
Particulate matter (Cooler BF)	N/A	New	50
		Existing	50
Particulate matter (Kiln)	N/A	New	30
		Existing	80
Sulphur dioxide	SO_2	New	50
		Existing	250
Oxides of nitrogen	NO_X expressed as NO_2	New	800
		Existing	1200
Total organic compounds,	N/A	New	10
		Existing	10
Hydrogen chloride	HCl	New	10
		Existing	10
Hydrogen fluoride	HF	New	1
		Existing	1

Cadmium + Thallium	Cd + Tl	New	0.05
		Existing	0.05
Mercury	Hg	New	0.05
		Existing	0.05
Sum of arsenic, antimony, lead, chromium, cobalt, copper; manganese, vanadium and nickel	As; Sb; Pb; Cr; Co; Cu; Mn; V & Ni	New	0.5
		Existing	0.5
			ng I-TEQ /Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 1013 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

(a) The following special arrangements shall apply -

(i) Emissions from cooling, grinding, milling and fugitive dust capture processes are not subject to the oxygen content reference condition.

(ii) The facility shall be designed, equipped, built and operated in such a way so as to prevent the emissions into the air giving rise to significant ground-level air pollution (i.e. leading to the exceedance of an accepted ambient air quality threshold standard).

(iii) Monitoring equipment shall be installed and acceptable techniques used in order to accurately monitor the parameters, conditions and mass concentrations relevant to the co-processing of AFR and incineration of waste.

(iv) All continuous, on-line emission monitoring results must be reported as a Daily Average concentration expressed as mg/Nm^3, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(v) Discontinuous (periodic) emission monitoring results must be expressed as mg/Nm^3, or ng/Nm^3 I-TEQ for PCDD/PCDF, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(vi) Exit gas temperatures must be maintained below 200 °C.

(vii) Pollution control devices (exhaust gas cooling and bag filter or ESP) must have a daily availability of 98% (i.e. maximum downtime of 2% or 30 minutes per running 24 hours). The cumulative annual downtime (total downtime over a one year period) may however not exceed 60 hours (0.685 % per annum).

(viii) Continuous, on-line measurement of the following emissions and operating parameters is required:

- Particulate matter (total particulate);
- O_2;
- CO;
- NO_X;
- SO_2;
- HCI;
- HF;
- VOC/TOC;
- Emission exhaust volume (e.g. Nm^3/hr) and flow rate (e.g. m/s);
- Water vapour content of exhaust gas (humidity);
- Exhaust gas temperature;
- Internal process temperature/s;
- Pressure; and
- Availability of air pollution control equipment (including exit gas cooling).

(ix) Appropriate installation and functioning of automated, continuous monitoring equipment for emissions to air, which are subject to quality control and to an annual surveillance test. Independent accredited calibration must be undertaken by means of parallel measurements with the reference methods, at a frequency as per the requirements of the equipment, but as a minimum every 3 years.

(x) Periodic measurements of heavy metals and dioxin and furan emissions must be undertaken, using national (if available) or internationally acceptable methods, by independent/external, accredited specialists twice during the first 12 months of waste incineration / AFR co-processing, and annually thereafter.

(xi) Average emission values for heavy metals are to be measured over a minimum sample period of 60 minutes to obtain a representative sample, and a maximum of 8 hours, and the average values for dioxins and furans (expressed as I-TEQ) over a sample period of a minimum of 60 minutes and maximum of 8 hours.

(xii) Periodic measurements of heavy metals and dioxins and furans are to be carried out representatively to provide accurate and scientifically correct emission data and results, and sampling and analysis must be carried out by independent, accredited laboratories.

(xiii) To ensure valid monitoring results are obtained, no more than five half-hourly average values in any day, and no more than ten daily average values per year, may be discarded due to malfunction or maintenance of the continuous measurement system.

(xiv) All measurement results must be recorded, processed and presented in an appropriate manner in a Quarterly Emissions Monitoring Report in order to enable verification of compliance with permitted operating conditions and air emission standards. Quarterly Emission Monitoring Reports must include, amongst others:

- Daily average results of all continuous, on-line emission monitoring parameters, reported on line graphs that include individual, daily average data points, and indicating the relevant air emission limit if applicable;
- Results of all continuous, on-line operational monitoring parameters, reported on line graphs that correspond in scale with the emission monitoring results;
- Results of periodic emission measurements of heavy metals, and dioxins and furans;
- Confirmation of residence times and temperatures of specific wastes co-processed as determined by the specific feed points, plant dimensions and material and gas flow rates;
- Discussion on availability or air pollution control equipment, together with reasons for and management of downtime;
- All relevant results must be compared with baseline measurements taken prior to the co-processing of AFR or hazardous waste; and
- Detailed evaluation and discussion of any non-compliance during the reporting period.

(xv) Treatment of High Level POPs Containing Waste (as defined by the Stockholm and Basel Conventions) are to be preceded by an independently monitored Performance Verification Test to determine the Destruction Efficiency (DE) and Destruction and Removal Efficiency (DRE) of principal organic hazardous compounds (POHC) using a suitable verification compound (e.g. trichloroethane).

(xvi) A plan for conducting a Performance Verification Test must be submitted to the relevant Government Department's at least 3 months prior to the commencement of such a test, and must include, amongst others, the following:

- Motivation for why the plant should be used for treatment of High Level POPs;
- A feasibility study showing that the plant is technically qualified;
- Planned date for commencement of the test and expected duration;
- Details on the waste to be co-processed during the test, including source, volume, composition etc.;
- Motivation for the particular choice of waste and its suitability in providing an accurate and representative indication of the plant's DE and DRE, and therefore suitability to treat High Level POPs Containing Waste;
- Extension of monitoring regime to include Chlorobenzenes, HCB, PCBs,
- Benzene, Toluene, Xylenes, PAHs, and NH_3;
- Monitoring and analysis to be conducted, the associated methodologies and independent parties responsible for monitoring.

(xvii) A detailed, independent report documenting and interpreting the results of the Performance Verification Test must be compiled. As a minimum, a DE/DRE of 99.9999% would be required, as well as compliance with Air Emission Standards.

(xviii) An Air Quality Improvement Plan for achieving emission limits over time must be developed if transitional arrangements apply to compliance with emission standards.

(6) Subcategory 5.6: Lime Production

Description:	Processing of lime, magnesite, dolomite and calcium sulphate.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	50
Sulphur dioxide	SO_2	New	400
		Existing	400
Oxides of Nitrogen	NO_X expressed as NO_2	New	500
		Existing	500

(7) Subcategory 5.7: Lime Production (using alternative fuels and/or resources)

Description:	Processing of lime, magnesite, dolomite and calcium sulphate where alternative fuels and/or resources are used.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	80
Sulphur dioxide	SO_2	New	50
		Existing	250
Oxides of nitrogen	NO_X expressed as NO_2	New	800
		Existing	1200
Total organic compounds,	N/A	New	10
		Existing	10
Hydrogen chloride	HCl	New	10
		Existing	10
Hydrogen fluoride	HF	New	1
		Existing	1
Cadmium + Thallium	Cd + Tl	New	0.05
		Existing	0.05
Mercury	Hg	New	0.05
		Existing	0.05
Sum of arsenic, antimony, lead, chromium, cobalt, copper; manganese, vanadium and nickel	As; Sb; Pb; Cr; Co; Cu; Mn; V & Ni	New	0.5
		Existing	0.5
			ng I-TEQ /Nm^3 under normal conditions of 10% O_2 , 273 Kelvin and 101.3 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

(a) The following special arrangements shall apply -

(i) Emissions from cooling, grinding, milling and fugitive dust capture processes are not subject to the oxygen content reference condition.

(ii) The facility shall be designed, equipped, built and operated in such a way so as to prevent the emissions into the air giving rise to significant ground-level air pollution (i.e. leading to the exceedance of an accepted ambient air quality threshold standard).

(iii) Monitoring equipment shall be installed and acceptable techniques used in order to accurately monitor the parameters, conditions and mass concentrations relevant to the co-processing of AFR and incineration of waste.

(iv) All continuous, on-line emission monitoring results must be reported as a Daily Average concentration expressed as mg/Nm^3, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(v) Discontinuous (periodic) emission monitoring results must be expressed as mg/Nm^3, or ng/Nm^3 I-TEQ for PCDD/PCDF, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(vi) Exit gas temperatures must be maintained below 200 °C.

(vii) Pollution control devices (exhaust gas cooling and bag filter or ESP) must have a daily availability of 98% (i.e. maximum downtime of 2% or 30 minutes per running 24 hours). The cumulative annual downtime (total downtime over a one year period) may however not exceed 60 hours (0.685 % per annum).

(viii) Continuous, on-line measurement of the following emissions and operating parameters is required:

- Particulate matter (total particulate);
- O_2;
- CO
- NO_X;
- SO_2;
- HCI;
- HF;
- VOC/TOC;
- Emission exhaust volume (e.g. Nm^3/hr) and flow rate (e.g. m/s);
- Water vapour content of exhaust gas (humidity);
- Exhaust gas temperature;
- Internal process temperature/s;

- Pressure; and
- Availability of air pollution control equipment (including exit gas cooling).

(ix) Appropriate installation and functioning of automated, continuous monitoring equipment for emissions to air, which are subject to quality control and to an annual surveillance test. Independent accredited calibration must be undertaken by means of parallel measurements with the reference methods, at a frequency as per the requirements of the equipment, but as a minimum every 3 years.

(x) Periodic measurements of heavy metals and dioxin and furan emissions must be undertaken, using national (if available) or internationally acceptable methods, by independent/external, accredited specialists twice during the first 12 months of waste incineration / AFR co-processing, and annually thereafter.

(xi) Average emission values for heavy metals are to be measured over a minimum sample period of 60 minutes to obtain a representative sample, and a maximum of 8 hours, and the average values for dioxins and furans (expressed as I-TEQ) over a sample period of a minimum of 60 minutes and maximum of 8 hours.

(xii) Periodic measurements of heavy metals and dioxins and furans are to be carried out representatively to provide accurate and scientifically correct emission data and results, and sampling and analysis must be carried out by independent, accredited laboratories.

(xiii) To ensure valid monitoring results are obtained, no more than five half-hourly average values in any day, and no more than ten daily average values per year, may be discarded due to malfunction or maintenance of the continuous measurement system.

(xiv) All measurement results must be recorded, processed and presented in an appropriate manner in a Quarterly Emissions Monitoring Report in order to enable verification of compliance with permitted operating conditions and air emission standards. Quarterly Emission Monitoring Reports must include, amongst others:

- Daily average results of all continuous, on-line emission monitoring parameters, reported on line graphs that include individual, daily average data points, and indicating the relevant air emission limit if applicable;

- Results of all continuous, on-line operational monitoring parameters, reported on line graphs that correspond in scale with the emission monitoring results;

- Results of periodic emission measurements of heavy metals, and dioxins and furans;

- Confirmation of residence times and temperatures of specific wastes co-processed as determined by the specific feed points, plant dimensions and material and gas flow rates;

- Discussion on availability or air pollution control equipment, together with reasons for and management of downtime;

- All relevant results must be compared with baseline measurements taken prior to the co-processing of AFR or hazardous waste; and

- Detailed evaluation and discussion of any non-compliance during the reporting period.

(xv) Treatment of High Level POPs Containing Waste (as defined by the Stockholm and Basel Conventions) are to be preceded by an independently monitored Performance Verification Test to determine the Destruction Efficiency (DE) and Destruction and Removal Efficiency (DRE) of principal organic hazardous compounds (POHC) using a suitable verification compound (e.g. trichloroethane).

(xvi) A plan for conducting a Performance Verification Test must be submitted to the relevant Government Department/s at least 3 months prior to the commencement of such a test, and must include, amongst others, the following:

- Motivation for why the plant should be used for treatment of High Level POPs;

- A feasibility study showing that the plant is technically qualified;

- Planned date for commencement of the test and expected duration;

- Details on the waste to be co-processed during the test, including source, volume, composition etc.;

- Motivation for the particular choice of waste and its suitability in providing an accurate and representative indication of the plant's DE and DRE, and therefore suitability to treat High Level POPs Containing Waste;

- Extension of monitoring regime to include Chlorobenzenes, HCB, PCBs, Benzene, Toluene, Xylenes, PAHs, and NH3;

- Monitoring and analysis to be conducted, the associated methodologies and independent parties responsible for monitoring.

(xvii) A detailed, independent report documenting and interpreting the results of the Performance Verification Test must be compiled. As a minimum, a DE/DRE of 99.9999% would be required, as well as compliance with Air Emission Standards.

(xviii) An Air Quality Improvement Plan for achieving emission limits over time must be developed if transitional arrangements apply to compliance with emission standards.

(8) Subcategory 5.8: Glass and Mineral Wool Production

Description:	The production of glass containers, flat glass, glass fibre and mineral wool.		
Application:	All installations producing 100 ton per annum or more.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 11% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	140
Oxides of nitrogen	NO_X expressed as NO_2	New	1500
		Existing	2000
Sulphur dioxide (Gas fired furnace)	SO_2	New	800
		Existing	800
Sulphur dioxide (Oil fired furnace)	SO_2	New	1500
		Existing	1500

(9) Subcategory 5.9: Ceramic Production

Description:	The production of tiles, bricks, refractory bricks, stoneware or porcelain ware by firing, excluding clamp kilns.		
Application:	All installations producing 100 ton per annum or more.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	150
Sulphur dioxide	SO_2	New	400
		Existing	1000
Total fluorides measured as hydrogen fluoride	HF	New	50
		Existing	50

(10) Subcategory 5.10: Macadam Preparation

Description:	Permanent facilities used for mixtures of aggregate; tar or bitumen to produce road-surfacing materials.		
Application:	All plants.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	120
Sulphur dioxide	SO_2	New	1000
		Existing	1000
Total volatile organic compounds from vapour recovery/ destruction units.	N/A	New	150
		Existing	150

(11) Subcategory 5.11: Alkali Processes

Description:	Production of potassium or sodium sulphate or the treatment of ores by chloride salts whereby hydrogen chloride gas is evolved.		
Application:	All installations producing 100 ton per annum or more.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	30
		Existing	100
Hydrogen chloride	HCl	New	30
		Existing	30

Category 6

Organic Chemicals Industry

Description:	The production, or use in production of organic chemicals not specified elsewhere including acetylene, acetic, maleic or phthalic anhydride or their acids, carbon disulphide, pyridine, formaldehyde, acetaldehyde, acrolein and its derivatives, acrylonitrile, amines and synthetic rubber. The production of organometallic compounds, organic dyes and pigments, surface=active agents.

	The polymerisation or co-polymerisation of any unsaturated hydrocarbons, substituted hydrocarbon (including vinyl chloride). The manufacture, recovery or purification of acrylic acid or any ester of acrylic acid. The use of toluene di-isocyanate or other di-isocyanate of comparable volatility; or recovery of pyridine.
Application:	All installations producing or using more than 100 tons per annum of any of the listed compounds.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Sulphur trioxide (from sulphonation processes)	SO_3	New	30
		Existing	100
Acrylonitrile (from processes producing and/or using acrylonitrile).	CH_2CHCN	New	5
		Existing	5
Methylamines (from nitrogen- containing organic chemicals)	CH_5N	New	10
		Existing	10
Total volatile organic compounds (thermal)	N/A	New	150
		Existing	150
Total volatile organic compounds (non thermal)	N/A	New	40 000
		Existing	40 000

(a) The following transitional arrangement shall apply for the storage and handling of raw materials, intermediate and final products with a vapour pressure greater than 14kPa at operating temperature: -

Leak detection and repair (LDAR) program approved by licensing authority to be instituted, by 01 January 2014.

(b) The following special arrangements shall apply for control of TVOCs from storage of raw materials, intermediate and final products with a vapour pressure of up to 14kPa at operating temperature, except during loading and offloading. (Alternative control measures that can achieve the same or better results may be used) -

(i) Storage vessels for liquids shall be of the following type:

Application	All permanent immobile liquid Storage facilities at a single site with a combined storage capacity of greater-than 1000 Cubic meters.

True vapour pressure of contents at product storage temperature	Type of tank or vessel
Type 1: Up to 14 kPa	Fixed-roof tank vented to atmosphere, or as per Type 2 and 3
Type 2: Above 14 kPa and up to 91 kPa with a throughput of less than 50'000 m3 per annum	Fixed-roof tank with Pressure Vacuum Vents fitted as a minimum, to prevent "breathing" losses, or as per Type 3
Type 3: Above 14 kPa and up to 91 kPa with a throughput greater than 50'000 m3 per annum	j) External floating-roof tank with primary rim seal and secondary rim seal for tank with a diameter greater than 20m, or k) fixed-roof tank with internal floating deck / roof fitted with primary seal, or l) fixed-roof tank with vapour recovery system.
Type 4: Above 91 kPa	Pressure vessel

(ii) The roof legs, slotted pipes and/or dipping well on floating roof tanks (except for domed floating roof tanks or internal floating roof tanks) shall have sleeves fitted to minimise emissions.

(iii) Relief valves on pressurised storage should undergo periodic checks for internal leaks. This can be carried out using portable acoustic monitors or if venting to atmosphere with an accessible open end, tested with a hydrocarbon analyser as part of an LDAR programme.

(c) The following special arrangements shall apply for control of TVOCs from the loading and unloading (excluding ships) of raw materials, intermediate and final products with a vapour pressure of greater than 14kPa at handling temperature. Alternative control measures that can achieve the same or better results may be used:

(i) All installations with a throughput of greater than 50'000 m^3 per annum of products with a vapour pressure greater than 14 kPa, must be fitted with vapour recovery / destruction units. Emission limits are set out in the table below -

Description:	Vapour Recovery Units		
Application:	Application: All loading/ offloading facilities with a throughput greater than 50 000 m3		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Total volatile organic compounds from vapour recovery/ destruction	N/A	New	150
		Existing	150

units using thermal treatment.			
Total volatile organic compounds from vapour recovery/ destruction units using non thermal treatment.	N/A	New	40 000
		Existing	40 000

(ii) For road tanker and rail car loading / offloading facilities where the throughput is less than 50'000 m^3 per annum, and where ambient air quality is, or is likely to be impacted, all liquid products shall be loaded using bottom loading, or equivalent, with the venting pipe connected to a vapour balancing system. Where vapour balancing and / or bottom loading is not possible, a recovery system utilizing adsorption, absorption, condensation or incineration of the remaining VOC's, with a collection efficiency of at least 95%, shall be fitted.

Category 7

Inorganic Chemicals Industry

(1) Subcategory 7.1: Production and or Use in Manufacturing of Ammonia, Fluorine, Fluorine Compounds, Chlorine, and Hydrogen Cyanide

Description:	Production and or use in manufacturing of ammonia, fluorine, fluorine compounds, hydrogen cyanide and chlorine gas (Excluding metallurgical processes-related activities regulated under category 4).
Application:	All installations producing and or using more than 100 tons per annum of any of the listed compounds.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Hydrogen fluoride (from processes in which HF is evolved).	HF	New	5
		Existing	30
Chlorine (from processes in which Cl_2 is evolved).	Cl_2	New	50
		Existing	50
Ammonia (from processes in which NH_3 is evolved).	NH_3	New	30
		Existing	100
Hydrogen Cyanide (from processes in which HCN	HCN	New	0.5
		Existing	2

is evolved).			

(2) Subcategory 7.2: Production of Acids

Description:	The production, bulk handling and or use in manufacturing of hydrofluoric, hydrochloric, nitric and sulphuric acid (including oleum) in concentration exceeding 10%. Processes in which oxides of sulphur are emitted through the production of acid sulphites of alkalis or alkaline earths or through the production of liquid sulphur or sulphurous acid. Secondary production of hydrochloric acid through regeneration.
Application:	All installations producing, handling and or using more than 100 tons per annum of any of the listed compounds (Excluding metallurgical processes related activities regulated under category 4).

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Total fluoride measured as Hydrogen Fluoride (from processes in which HF is evolved)	F as HF	New	5
		Existing	30
Hydrogen chloride (from primary production of hydrochloric acid)	HCl	New	15
		Existing	25
Hydrogen chloride (from secondary production of hydrochloric acid)	HCl	New	30
		Existing	100
Sulphur dioxide	SO_2	New	350
		Existing	2800
Sulphuric acid mist and sulphur trioxide expressed as SO_3 (from processes in which SO_3 is evolved).	SO_3	New	25
		Existing	100
Oxides of nitrogen expressed as NO_2	NO_X	New	350
		Existing	2000

(3) Subcategory 7.3: Production of Chemical Fertilizer

Description:	The production of superphosphates, ammonium nitrate, ammonium phosphates and or ammonium sulphate and their processing into fertilizer mixtures (NPK mixtures).
Application:	All installations producing and or processing more than 10 tons per month.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Total fluoride measured as Hydrogen Fluoride	F as HF	New	5
		Existing	30
Ammonia	NH_3	New	50
		Existing	100

(4) Subcategory 7.4: Production, Use in Production or Recovery of Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Lead, Mercury, and or Selenium, by the Application of Heat.

Description:	Production, use or recovery of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, mercury, selenium, thallium and their salts not covered elsewhere, excluding their use as catalyst.
Application:	All installations producing or using more than 1 ton per month.

Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	25

(a) The following special arrangement shall apply -

Operators shall estimate the emissions of the metals using methods set out in Annexure A. Where the estimated emissions exceed 10 tons per annum for any one of the metals, or 25 tons per annum for a combination of the metals, an air quality impact assessment for the emissions shall be submitted to the licensing authority annually, commencing within one year of the publication of the notice.

(5) Subcategory 7.5: Production of Calcium Carbide

Description:	Production of calcium carbide.
Application:	All installations producing more than 10 tons per month.

Substance or mixture of substances		

Common name	Chemical symbol	Plant status	mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.
Particulate matter	N/A	New	25
		Existing	100

(6) Subcategory 7.6: Production or Use of Phosphorus and Phosphate Salts not mentioned elsewhere

Description:	Production or use of phosphorus and phosphate salts.		
Application:	All installations producing or using more than 10 tons per month.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	25
		Existing	50

(7) Subcategory 7.7: Production of Caustic Soda

Description:	Production of caustic soda.		
Application:	All installations producing more than 10 tons per month.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	25
		Existing	50

Category 8
Thermal Treatment of Hazardous and General Waste

(1) Subcategory 8.1: Thermal Treatment of General and Hazardous Waste

Description:	Facilities where general and hazardous waste are treated by the application of heat.		
Application:	All installations treating 10 Kg per day of waste.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	25
Carbon monoxide	CO	New	50

		Existing	75
Sulphur dioxide	SO_2	New	50
		Existing	50
Oxides of nitrogen	NO_X expressed as NO_2	New	200
		Existing	200
Hydrogen chloride	HCl	New	10
		Existing	10
Hydrogen fluoride	HF	New	0.5
		Existing	0.5
Sum of Lead, arsenic, antimony, chromium, cobalt, copper, manganese, nickel, vanadium	Pb As+ Sb+ Cr + Co+ Cu + Mn+ Ni V	New	0.05
		Existing	0.05
Mercury	Hg	New	0.05
		Existing	0.05
Cadmium Thallium	Cd TI	New	10
		Existing	10
Total organic compounds	TOC	New	10
		Existing	10
Ammonia	NH_3	New	10
		Existing	10
			ng I-TEQ /Nm^3 under normal conditions of 10% O_2, 273 Kelvin and 101 3 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

(a) The following special arrangements shall apply

(i) For pyrolysis, reference oxygen content does not apply.

(ii) The facility shall be designed, equipped, built and operated in such a way so as to prevent the emissions into the air giving rise to significant ground-level air pollution (i.e. leading to the exceedance of an accepted ambient air quality threshold standard).

(iii) Monitoring equipment shall be installed and acceptable techniques used in order to accurately monitor the parameters, conditions and mass concentrations relevant to the co-processing of AFR and incineration of waste.

(iv) All continuous, on-line emission monitoring results must be reported as a Daily Average concentration expressed as mg/Nm3, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(v) Discontinuous (periodic) emission monitoring results must be expressed as mg/Nm^3, or ng/Nm^3 I-TEQ for PCDD/PCDF, and at 'normalised' conditions of 10% O_2, 101.3 kPa, 273 K / 0 °C, dry gas.

(vi) Exit gas temperatures must be maintained below 200 °C.

(vii) Pollution control devices (exhaust gas cooling and bag filter or ESP) must have a daily availability of 98% (i.e. maximum downtime of 2% or 30 minutes per running 24 hours). The cumulative annual downtime (total downtime over a one year period) may however not exceed 60 hours (0.685 % per annum).

(viii) Continuous, on-line measurement of the following emissions and operating parameters is required:

- Particulate matter (total particulate);
- O_2;
- CO;
- NO_X;
- SO_2;
- HCI;
- HF;
- VOC/TOC;
- Emission exhaust volume (e.g. Nm^3/hr) and flow rate (e.g. m/s);
- Water vapour content of exhaust gas (humidity);
- Exhaust gas temperature;
- Internal process temperature/s;
- Pressure; and
- Availability of air pollution control equipment (including exit gas cooling).

(ix) Appropriate installation and functioning of automated, continuous monitoring equipment for emissions to air, which are subject to quality control and to an annual surveillance test. Independent accredited calibration must be undertaken by means of parallel measurements with the reference methods, at a frequency as per the requirements of the equipment, but as a minimum every 3 years.

(x) Periodic measurements of heavy metals and dioxin and furan emissions must be undertaken, using national (if available) or internationally acceptable methods, by

independent/external, accredited specialists twice during the first 12 months of waste incineration / AFR co-processing, and annually thereafter.

(xi) Average emission values for heavy metals are to be measured over a minimum sample period of 60 minutes to obtain a representative sample, and a maximum of 8 hours, and the average values for dioxins and furans (expressed as I-TEQ) over a sample period of a minimum of 60 minutes and maximum of 8 hours.

(xii) Periodic measurements of heavy metals and dioxins and furans are to be carried out representatively to provide accurate and scientifically correct emission data and results, and sampling and analysis must be carried out by independent, accredited laboratories.

(xiii) To ensure valid monitoring results are obtained, no more than five half-hourly average values in any day, and no more than ten daily average values per year, may be discarded due to malfunction or maintenance of the continuous measurement system.

(xiv) All measurement results must be recorded, processed and presented in an appropriate manner in a Quarterly Emissions Monitoring Report in order to enable verification of compliance with permitted operating conditions and air emission standards. Quarterly Emission Monitoring Reports must include, amongst others:

- Daily average results of all continuous, on-line emission monitoring parameters, reported on line graphs that include individual, daily average data points, and indicating the relevant air emission limit if applicable;
- Results of all continuous, on-line operational monitoring parameters, reported on line graphs that correspond in scale with the emission monitoring results;
- Results of periodic emission measurements of heavy metals, and dioxins and furans;
- Confirmation of residence times and temperatures of specific wastes coprocessed as determined by the specific feed points, plant dimensions and material and gas flow rates;
- Discussion on availability or air pollution control equipment, together with reasons for and management of downtime;
- All relevant results must be compared with baseline measurements taken prior to the co-processing of AFR or hazardous waste; and

- Detailed evaluation and discussion of any non-compliance during the reporting period.

(xv) Treatment of High Level POPs Containing Waste (as defined by the Stockholm and Basel Conventions) are to be preceded by an independently monitored Performance Verification Test to determine the Destruction Efficiency (DE) and Destruction and Removal Efficiency (DRE) of principal organic hazardous compounds (POHC) using a suitable verification compound (e.g. trichloroethane).

(xvi) A plan for conducting a Performance Verification Test must be submitted to the relevant Government Department/s at least 3 months prior to the commencement of such a test, and must include, amongst others, the following:

- Motivation for why the plant should be used for treatment of High Level POPs;
- A feasibility study showing that the plant is technically qualified;
- Planned date for commencement of the test and expected duration;
- Details on the waste to be co-processed during the test, including source, volume, composition etc.;
- Motivation for the particular choice of waste and its suitability in providing an accurate and representative indication of the plant's DE and DRE, and therefore suitability to treat High Level POPs Containing Waste;
- Extension of monitoring regime to include Chlorobenzenes, HCB, PCBs, Benzene, Toluene, Xylenes, PAHs, and NH_3;
- Monitoring and analysis to be conducted, the associated methodologies and independent parties responsible for monitoring.

(xvii) A detailed, independent report documenting and interpreting the results of the Performance Verification Test must be compiled. As a minimum, a DE/DRE of 99.9999% would be required, as well as compliance with Air Emission Standards.

(xviii) An Air Quality Improvement Plan for achieving emission limits over time must be developed if transitional arrangements apply to compliance with emission standards.

(xix) Compliance time frames for health care risk waste incineration will be as specified in paragraphs (8); (9); and (10) unless specific compliance time frames for health care risk waste incineration have been set under health care risk waste regulations, in which case,

the specific compliance time frames for health care risk waste incineration set under health care risk waste regulations shall apply.

(xx) Continuous emission monitoring for Health Care Risk Incinerators shall be complied with by 31 March 2014.

(xxi) Combustion of solid, liquid and gaseous waste materials in installations primarily used for steam for steam raising or electricity generation must comply with the emission standards of this sub- category.

(2) Subcategory 8.2: Crematoria and Veterinary Waste Incineration

Description:	Cremation of human remains, companion animals (pets) and the incineration of veterinary waste		
Application:	All installations		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 11% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	40
		Existing	250
Carbon monoxide	CO	New	75
		Existing	150
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	1000
Mercury (Applicable to human cremation only)	Hg	New	0.05
		Existing	0.05

(3) Subcategory 8.3: Burning Grounds

Description:	Facilities where waste material from the manufacture of explosives and contaminated explosive packaging material are destroyed.		
Application:	All installations disposing of more than 100kg of material per week		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Dust fall	N/A	New	a
		Existing	a
Sulphur dioxide	SO_2	New	b
		Existing	b

[a] three months running average not to exceed limit value for adjacent land use according to dust control regulations promulgated in terms of section 32 of the NEM: AQA, 2004 (Act No. 39 of 2004), in eight principal wind directions.

[b] Twelve months running average not to exceed limit value as per GN 1210 of 24 December 2009. Passive diffusive measurement approved by the licensing authority carried out monthly.

(4) Subcategory 8.4: Drum Recycling Processes

Description:	The process in which used drums are reconditioned by the application of heat.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	10
		Existing	25
Carbon monoxide	CO	New	50
		Existing	75
Sulphur dioxide	SO_2	New	50
		Existing	50
Oxides of nitrogen	NO_X expressed as NO_2	New	200
		Existing	200
Hydrogen chloride	HCl	New	10
		Existing	10
Hydrogen fluoride	HF	New	0.5
		Existing	0.5
Sum of Lead, arsenic, antimony, chromium, cobalt, copper, manganese, nickel, vanadium	Pb As+ Sb+ Cr + Co+ Cu + Mn+ Ni V	New	0.05
		Existing	0.05
Mercury	Hg	New	0.05
		Existing	0.05
Cadmium Thallium	Cd Tl	New	10
		Existing	10
Total organic compounds	TOC	New	10
		Existing	10
Ammonia	NH_3	New	10
		Existing	10
			ng I-TEQ /Nm^3 under normal conditions of

			10% O_2, 273 Kelvin and 101 3 kPa.
Dioxins and furans	PCDD/PCDF	New	0.1
		Existing	0.1

Category 9

Pulp and Paper Manufacturing Activities, including By-Products Recovery

(1) Subcategory 9.1: Lime Recovery Kiln

Description:	The recovery of lime from the caustisizing process.		
Application:	All installations producing more than 1 ton per month.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 6% O_2 , 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Total reduced sulphur compounds measured as H_2S	H_2S	New	10
		Existing	10
Oxides of nitrogen	NO_X expressed as NO_2	New	600
		Existing	2000

(2) Subcategory 9.2: Chemical Recovery Furnaces

Description:	The recovery of chemicals from the thermal treatment of spent liquor using furnaces		
Application:	All installations producing more than 1 ton per month		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	50
		Existing	100
Hydrogen sulphide	H_2S	New	15
		Existing	15
Sulphur dioxide	SO_2	New	30
		Existing	300
Oxides of nitrogen	NO_X expressed as NO_2	New	300
		Existing	300

(3) Subcategory 9.3: Chemical Recovery Copeland Reactors

Description:	The recovery of chemicals from the thermal treatment of spent liquor using Copeland reactors		
Application:	All installations producing more than 1 ton per month		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Particulate matter	N/A	New	No plant of this type will be authorised in the future
		Existing	400
Sulphur dioxide	SO_2	New	No plant of this type will be authorised in the future
		Existing	800

(a) The following special arrangement shall apply -

Existing Plants shall submit atmospheric impact report to the licensing authority on its Particulate Matter impact annually.

(4) Subcategory 9.4: Chlorine Dioxide Plants

Description:	Production and use of chlorine dioxide for paper production.		
Application:	All installations.		
Substance or mixture of substances		**Plant status**	**mg/Nm^3 under normal conditions of 273 Kelvin and 101.3 kPa.**
Common name	**Chemical symbol**		
Hydrogen chloride	HCl	New	15
		Existing	30

(5) Subcategory 9.5: Wood Burning, Drying and the Production of Manufactured Wood Products

Description:	The burning or drying of wood by an external source of heat; and the manufacture of laminated and compressed wood products.		
Application:	All installations producing more than 10 tons per month.		
Substance or mixture of substances		**Plant**	**mg/Nm^3 under normal conditions of 10% O_2 ,**
Common name	**Chemical**		

	symbol	status	273 Kelvin and 101.3 kPa.
Particulate matter	N/A	New	150
		Existing	200
Oxides of nitrogen	NO_X expressed as NO_2	New	500
		Existing	700

Category 10

Animal Matter Processing

Description:	Processes for the rendering cooking, drying, dehydrating, digesting, evaporating or protein concentrating of any animal matter not intended for human consumption.
Application:	All installations handling more than 1 ton of raw materials per day.

(a) The following special arrangement shall apply -

Best practice measures intended to minimize or avoid offensive odours must be implemented by all installations. These measures must be documented to the satisfaction of the Licensing Authority.

ANNEXURE A

METHODS FOR SAMPLING AND ANALYSIS

The following referenced documents are indispensable for the application of the Notice. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from Standards South Africa.

(1) ISO Standards

(a) ISO 7934:1989 Stationary source emissions - Determination of the mass concentration of sulfur dioxide - Hydrogen peroxide/barium perchlorate/Thorin method.

(b) ISO 7934:1989/Amd 1:1998

(c) ISO 7935: Stationary source emissions - Determination of the mass concentration of sulfur dioxide - Performance characteristics of automated measuring method.

(d) ISO 9096: Stationary source emissions - Manual Determination of mass concentration of particulate matter.

(e) ISO 10155: Stationary source emissions - Automated monitoring of mass concentrations of particles - Performance characteristics, test methods and specifications

(f) ISO 10396: Stationary source emissions - Sampling for the automated determination of gas emissions concentrations for permanently-installed monitoring systems

(g) ISO 10397: Stationary source emissions - Determination of asbestos plant emissions method by fibre counting measurement

(h) ISO 10780: Stationary source emissions - Measurement of velocity volume flow rate of gas steams in ducts.

(i) ISO 10849: Stationary source emissions - Determination of the mass concentration of nitrogen oxides - Performance characteristics of automated measuring systems

(j) ISO 11338-1: Stationary source emissions - Determination of gas and particle-phase polycyclic aromatic hydrocarbons Part 1: Sampling.

(k) ISO 11338-2: Stationary source emissions - Determination of gas and particle-phase polycyclic aromatic hydrocarbons Part 2: Sample preparation, clean-up and determination.

(l) ISO 11564: Stationary source emissions - Determination of the mass concentration of nitrogen oxides -Naphthylethylenediamine photometric method.

(m) ISO 11632: Stationary source emissions - Determination of mass concentration of sulphur dioxide - Iron chromatography method.

(n) ISO 12039: Stationary source emissions - Determination of carbon monoxide, carbon dioxide and oxygen - Performance characteristics and calibration of automated measuring systems.

(o) ISO 12141: Stationary source emissions - Determination of mass concentration of particulate matter (dust) at low concentrations- Manual gravimetric method.

(p) ISO 14164: Stationary source emissions - Determination of the volume flow-rate of gas streams in ducts - Automated method.

(q) ISO 15713: Stationary source emissions - Sampling and determination of gaseous fluoride content.

(2) EPA methods

(a) Method 1- Traverse Points

(b) Method 1A - Small Ducts

(c) Method 2 - Velocity - S-type Pitot

(d) Method 2A - Volume Meters

(e) Method 2B - Exhaust Volume Flow Rate

(f) Method 2C - Standard Pitot

(g) Method 2D - Rate Meters

(h) Method 2F - Flow Rate Measurement with 3-D Probe

(i) Method 2G - Flow Rate Measurement with 2-D Probe

(j) Method 2H - Flow Rate Measurement with Velocity Decay Near Stack Walls

(k) Memo - New Test Procedures of Stack Gas Flow Rate in Place of Method 2

(l) Method 3 - Molecular Weight

(m) Method 3A - CO_2, O_2 by instrumental methods

(n) Method 3B - CO_2, O_2 by Orsat apparatus

(o) Method 3C - CO_2, CH_4, N_2, O_2 by determined by thermal conductivity

(p) Method 4 - Moisture Content

(q) Method 5 - Particulate Matter (PM)

(r) Method 5D - PM Baghouses (Particulate Matter)

(s) Method 5E - PM Fiberglass Plants (Particulate Matter)

(t) Method 5F - PM Fluid Catalytic Cracking Unit

(u) Method 51- Determination of Low Level Particulate Matter Emissions

(v) Method 6 - Sulphur Dioxide (SO_2)

(w) Method 6A - SO_2, CO_2

(x) Method 6B - SO_2, CO_2 - Long Term Integrated

(y) Method 6C - SO_2 - Instrumental

(z) Method 6C - Figures SO_2

(aa) Method 7 - Nitrogen Oxide (NO_X)

(bb) Method 7A - NO_X - Ion Chromatographic Method

(cc) Method 7B - NO_X - Ultraviolet Spectrophotometry

(dd) Method 7C - NO_X - Colorimetric Method

(ee) Method 7D - NO_X - Ion Chromatographic

(ff) Method 7E - NO_X - Instrumental

(gg) Method 8 - Sulfuric Acid Mist

(hh) Method 9 - Visual Opacity

(ii) Method 10 - Carbon Monoxide-NDIR

(jj) Method 10A - CO for Certifying CEMS

(kk) Method 10B - CO from Stationary Sources

(II) Method 11- H_2S Content of Fuel

(mm) Method 12 - Inorganic Lead

(nn) Method 13A - Total Fluoride (SPADNS Zirconium Lake)

(oo) Method 13B - Total Fluoride (Specific Ion Electrode)

(pp) Method 14 - Fluoride for Primary Aluminium Plants

(qq) Method 14A - Total Fluoride Emissions from Selected Sources at Primary Aluminium Plants

(rr) Method 15 - Hydrogen Sulfide, Carbonyl Sulfide, and Carbon Disulfide

(ss) Method 15A - Total Reduced Sulfur (TRS Alt.)

(tt) Method 16 - Sulfur (Semicontinuous Determination)

(uu) Method 16A - Total Reduced Sulfur (Impinger)

(vv) Method 16B - Total Reduced Sulfur (GC Analysis)

(ww) Method 17 - In-Stack Particulate (PM)

(xx) Method 18 - VOC by GC

(yy) Method 19 - SO_2 Removal & PM, SO_2, NO_X Rates from Electric Utility Steam Generators

(zz) Method 20 - NO_X from Stationary Gas Turbines

(aaa) Method 21 - VOC Leaks

(bbb) Method 22 - Fugitive Opacity

(ccc) Method 23 - Dioxin and Furan (02/91 FR Copy).

(ddd) Method 25 - Gaseous Nonmethane Organic Emissions

(eee) Method 25A - Gaseous Organic Concentration (Flame Ionization)

(fff) Method 25B - Gaseous Organic Concentration (Infrared Analyzer)

(ggg) Method 26 - Hydrogen Chloride, Halides, Halogens

(hhh) Method 26A - Hydrogen Halide & Halogen- Isokinetic

(iii) Method 28A - Air to Fuel Ratio, Burn Rate - Wood-fired Appliances

(jjj) Method 29 - Metals Emissions from Stationary Sources

(kkk) Method 101 - Mercury from Chlor-Alkali Plants (Air)

(III) Method 101A - Mercury from Sewage Sludge Incinerators

(mmm)Method 102 - Mercury from Chlor-Alkali Plants (Hydrogen Streams)

(nnn) Method 103 - Beryllium Screening Method

(ooo) Method 104 - Beryllium Emissions Determination

(ppp) Method 106 - Determination of Vinyl Chloride

(qqq) Method 107A - Vinyl Chloride content of Solvents

(rrr) Method 108 - Particulate & Gaseous Arsenic emissions

(sss) Method 108B - Arsenic

(ttt) Method 108C - Arsenic

(uuu) Methods 203A, B, and C - Opacity Determination for Time-Averaged Regulations

(vvv) Method 303 - By-product Coke Oven Batteries

(3) British standards

(a) BS 3405:1983 Method for measurement of particulate emission including grit and dust (simplified method).

(b) BS EN 14181:2004 Stationary source emissions. Quality assurance of automated measuring systems.

(c) BS EN 15259: Air quality. Measurement of stationary source emissions. Measurement strategy, measurement planning, reporting and design of measurement sites.

(d) BS EN 15267-1: Air quality. Certification of automated measuring systems. General principles.

(e) BS EN 15267-2: Air quality. Certification of automated measuring systems. Initial assessment of the AMS manufacturer's quality management system and post certification surveillance for the manufacturing process.

(f) BS EN 15267-3: Air quality. Certification of automated measuring systems. Performance criteria and test

Repeal of the list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage, 2010

(21) The list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage published under Government Notice No. 248, Gazette No. 33064 dated 31 March 2010, in terms of section 21(1)(a) read with section 21(3)(a) and (b) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), is hereby repealed.

Short title and commencement

(22) This notice is called the listed activities and associated minimum emission standards identified in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).