



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

RISK ASSESSMENT IN TERMS OF REGULATION 8 OF THE WASTE EXCLUSION REGULATIONS

| | (For official use only) |
|------------------------|-------------------------|
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Risk Assessment for an application for exclusion of waste stream or portion of waste stream in terms of the National Environmental Management: Waste Act, 2008(Act No.59 of 2008), as amended.

Kindly note that:

1. This form is current as of 01 April 2021. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
2. The information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.
3. Incomplete forms (including information as required in the application form may be returned to the applicant for revision and the inclusion of additional information.
4. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.

| BACKGROUND INFORMATION | |
|------------------------|---|
| APPLICANT | SA Steel Mills (Pty) Ltd |
| CONTACT PERSON | |
| NAME | Ms Fatima Rawjee |
| ADDRESS | Old Kookfontein Farm, Main Kookfontein Road, Meyerton |
| E-MAIL ADDRESS | fatima@sasteelmill.co.za |
| TELEPHONE | 016 362 6045 |
| CELL PHONE | 072 667 8508 |

| WASTE GENERATING FACILITY OR FACILITIES | | | | | | | |
|---|--|-----|-----|-----------|-----|-----|--------|
| PHYSICAL ADDRESS OF FACILITY OR FACILITIES | Old Kookfontein Farm, Main Kookfontein Road, Meyerton | | | | | | |
| GPS CO-ORDINATES AT CORNERS OF WASTE GENERATING FACILITY OR FACILITIES | LATITUDE | | | LONGITUDE | | | |
| | 1 | 26° | 34' | 15.38" | 27° | 59' | 16.92" |
| | 2 | 26° | 33' | 52.01" | 27° | 59' | 36.00" |
| | 3 | 26° | 34' | 03.52" | 27° | 59' | 49.65" |
| | 4 | 26° | 34' | 15.23" | 27° | 59' | 54.56" |
| | 5 | 26° | 34' | 23.20" | 27° | 59' | 53.10" |
| | 6 | 26° | 34' | 23.15" | 27° | 59' | 47.45" |
| | 7 | 26° | 34' | 18.31" | 27° | 59' | 36.39" |
| | 8 | 26° | 34' | 19.72" | 27° | 59' | 26.68" |
| | 9 | 26° | 34' | 18.10" | 27° | 59' | 20.93" |
| WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE | Mill scale is a by-product generated from the secondary steel making processes at the steel plant. | | | | | | |
| BENEFICIAL USE/S | Mill Scale: Reused in the steel-making processes on site and the rest is sold to other iron and steelmaking and ferroalloy productions. | | | | | | |

| WASTE GENERATING PROCESS | |
|---|---|
| DETAILED DESCRIPTION OF WASTE GENERATING PROCESS ¹ | Steel scrap is delivered to site by road transport. After weighing at the weigh bridge the steel scrap is segregated, prepared, classified and accordingly stocked in the scrap storage area. Prepared steel scrap is bought to the melting shop and fed into the furnace/s from an overhead crane. The scrap steel is melted in the furnaces. Slag (impurities from the steel) forms on top of the molten steel in the furnaces. This is poured off the molten steel. The molten steel is tapped out of the furnace to a ladle refining furnace where it undergoes refining. After attaining the final chemical composition and appropriate temperature of the molten steel, the ladle is taken to the Continuous Casting Machine (CCM) for billet casting. In continuous casting, the molten metal is cast into a water-cooled die, which is open at the bottom. The die gives the desired form to the product. Through |

¹ A process flow chart must be attached with this form for the process description

intensive cooling, the outside of the metal product solidifies, while it is slowly pulled out of the mould. Through continuous pouring and extraction, the product gets longer. After horizontal straightening, a mechanical shear cuts the billet into the desired length. From here the billets are either fed hot into the mills for further processing or the steel billets are stacked on a cooling bed. Hereafter the billets are temporarily stored on site before dispatch by road transport or by later use in the mills where they are re-heated for rolling in the re-heating furnaces.

At the steel rolling mills, the steel billets undergo a three-phase hot rolling process to form "standard" steel products. Billets are fed into the mills and pass-through rollers which rolls the billets a little thinner each time until they start to form the desired shape. At the finishing section the end products are passed onto a colling bed and then through a straightener, cut to length using cold shearing machines, Randoms are selected and set aside and first grade products are packaged and stacked for dispatch via road transport vehicles.

Air emissions from the furnaces are managed by a pollution control system whereby the fumes are extracted and cleaned prior to being released. The impurities that are removed from the emissions, in the form of zinc dust, are collected in bags.

Mill scale is the surface of the billets (and to a lesser degree the long products) that flakes off during the cooling (and shaping and rolling) process/es.

Refractory bricks are used to line the furnaces. These break from the intensive heat and need to be replaced.

Oil is burned to power the reheating furnaces at the mill. The used oil will be re-refined/ processed for re-use.

Refer to **Annexure 2** for the Process Flow Diagram.

| | | |
|---|------------------|----------------|
| PRODUCTION PROCESS FLOW CHART ATTACHED | YES | NO |
| WASTE CLASSIFICATION | HAZARDOUS | GENERAL |
| IF HAZARDOUS LIST THE HAZARDS OF THE WASTE | Not applicable | |

RISK ASSESSMENT WITHOUT MITIGATION

| Activity | Risk Description | Environmental Receptors | Assessment of Risk | | | | | Significance |
|--|--|---|--------------------|-------------|-----------|----------|-------|--------------|
| | | | Impact | Probability | Magnitude | Duration | Scale | |
| Steel making processes including, but not limited to: <ul style="list-style-type: none"> • Steel scrap delivery and sorting • Melting of the steel scrap in the furnaces • Casting of the steel billets • Reheating the billets (when needed) • Rolling the billets to form end products • Sorting and dispatching the end products. | The processes and associated activities (vehicle movement) are noisy and could impact on the surrounding properties. | Surrounding community sense of place | Negative | 2 | 2 | 5 | 2 | 18 Low |
| | The processes involve many health risks and hazards to the workers and employees at the plant. | Human health and safety | Negative | 4 | 6 | 5 | 1 | 48 Moderate |
| Storage of steel scrap. | The improper storage of steel scrap could result in stormwater pollution and subsequently pollution of natural water resources or municipal systems as well as soil pollution. | Soil Surface water quality Ground water quality | Negative | 3 | 4 | 3 | 2 | 27 Low |
| Storage of waste/ by-products | The improper storage of waste/ by-products generated from the processes could result | Soil Surface water quality Ground water quality | Negative | 4 | 6 | 3 | 2 | 44 Moderate |

| | | | | | | | | |
|---|--|--|----------|---|----|---|---|-------------|
| | in the pollution of natural resources including soil, surface water and ground water. | | | | | | | |
| Disposal or removal of waste/ by-products from the site | The improper disposal or removal of waste/ by-products generated from the processes could result in the pollution of natural resources including soil, surface water and ground water. | Soil Surface water quality Ground water quality | Negative | 4 | 6 | 4 | 2 | 48 Moderate |
| Use of groundwater for the processes in the plant | The depletion of natural resources through the unauthorized use of groundwater. | Groundwater quantity | Negative | 2 | 8 | 4 | 3 | 30 Moderate |
| | The risk of sinkhole formation. | Geology Human health and safety | Negative | 3 | 10 | 5 | 2 | 51 Moderate |
| Storage and handling of fuel and hazardous substances | Improper management relating to the use of hazardous substances could result in pollution. | Soil Surface water quality Ground water quality | Negative | 4 | 6 | 4 | 2 | 48 Moderate |
| | Risk of fires or other emergency situations associated with the possible improper storage and handling of fuel and other hazardous substances. | Human health and safety Surrounding community health and safety | Negative | 3 | 8 | 5 | 2 | 45 Moderate |
| Effluent discharge | Improper management or discharge of effluent (which does not meet DWS and municipal | Soil Surface water quality Ground water quality | Negative | 4 | 6 | 4 | 3 | 52 Moderate |

| | | | | | | | | |
|---|--|---|----------|---|---|---|---|-------------|
| | standards) could contaminate soil and water resources. | | | | | | | |
| Waste management and storage | Improper waste management and housekeeping could have a negative impact on the aesthetics of the area and could be an eye-sore to the surrounding community. | Surrounding community sense of place | Negative | 2 | 4 | 5 | 2 | 22 Low |
| Air emissions from the various furnaces and coal gasifier | Air emissions from the various processes and activities on the site could negatively impact the surrounding community as well as the health of workers at the plant. | Air quality Human health Surrounding community sense of place | Negative | 4 | 6 | 4 | 3 | 52 Moderate |

The following factors and criteria must be used to assess the impacts of the activities:

| CRITERIA | |
|-----------------------------|--|
| Magnitude (Severity) | Duration |
| 10 – Very high | 5 – Permanent (longer than 10 years) |
| 8 – High | 4 – Long term (5 – 10 years) |
| 6 – Moderate | 3 – Medium term (12 months to 5 years) |
| 4 - Low | 2 – Short term (< 12 months) |
| 2 - Minor | 1 – Immediate |
| Scale | Probability (Likelihood) |
| 5 – International | 5 – Definite |
| 4 – National | 4 – Highly probable |
| 3 – Regional | 3 – Medium probability |
| 2 – Local | 2 – Low probability |
| 1 – Site only | 1 – Improbably |
| 0 – None | 0 - None |

Magnitude

Measures the size of the impact

Duration

Duration refers to the lifetime of the impact i.e., how long it will last

Scale

The scale refers to the extent of the impact

Probability

The probability refers to the chance of the impact to occur. The potential impact could be most likely to occur, unlikely, etc.

Assessment of Significance of Impact

Significance rating of the potential impact illustrates the importance of the impact itself. The size of the area affected by pollution may be extremely high, but the significance of this effect is dependent on the concentration or level of pollution in that area. In order to determine the significance of an impact, the following method should be used:

$$\text{Significance (S)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The values of S must then be categorised as follows:

| RATING | | DESCRIPTION |
|---------------|-----------------------|--|
| SP > 60 | High significance | An impact which could influence the decision about whether or to proceed with the activities regardless of any possible mitigation |
| SP 30 - 60 | Moderate significance | An impact or benefit which is sufficiently important to require management, and which could have an influence on the decision unless it is mitigated |
| SP < 30 | Low significance | Impacts with little real effect and which will not have an influence on or require modification of the activities |
| + | Positive impact | An impact that is likely to result in a positive consequence/effect |

I, FATIHA RAWJEE (the Applicant) hereby declare that I have read the completed Risk Assessment form and hereby confirm that the information is, to the best of my knowledge, true and correct

Furthermore, I declare that I am fully aware of my responsibilities in terms of the Waste Exclusion Regulations, and that failure to comply with these Regulations may constitute an offence in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008).



Signature of the applicant²/ Signature on behalf of the applicant:

SA STEEL MILLS (PTY) LTD

Name of Applicant:

SENIOR MANAGER: CORPORATE MANAGEMENT SERVICES

Designation

31/05/2021

Date:

² If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority.