

Risk Assessment



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

APPLICANT	Cato Ridge Alloys (Pty) Ltd
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Manganese containing metallurgical slag.
BENEFICIAL USE/S	Export to India, Japan and Malaysia for production of silico-manganese.
WASTE GENERATING FACILITY OR FACILITIES	
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	Assmang Cato Ridge Alloys' Works 1 Eddie Hagan Drive, Cato Ridge Camperdown Rural, 3680, KwaZulu-Natal South Africa
GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES	The site lies with a centre point at 29°42'51.74" Latitude; 30°36'51.08" 30°36'54.62" Longitude. Corner 1 of waste generating site: 29°42'17.73" Latitude; 30°36'54.47" Longitude. Corner 2 of waste generating site: 29°42'22.59" Latitude; 30°37'6.44" Longitude. Corner 3 of waste generating site: 29°43'17.72" Latitude; 30°36'47.12" Longitude. Corner 4 of waste generating site:

	29°43'17.88" Latitude; 30°36'26.30" Longitude
CONTACT PERSON	
NAME	Mr. Paul Botha
ADDRESS	PO Box 21, Cato Ridge, 3680, South Africa

EMAIL ADDRESS	paulb@feralloys.co.za	
TELEPHONE	031 782 5123 or 082 925 5344	
* DETAILED DESCRIPTION OF WASTE GENERATING PROCESS	<p>During the manganese smelting process, manganese ore is heated to 1 200 degrees Celsius in the electric arc furnace. Once the mix in the furnace is in a liquid state, the molten manganese is poured into a converter where it undergoes decarburization. Decarburization is the process whereby oxygen bonds with the carbon in the molten manganese in order to liberate the carbon as CO gas. This process produces a refined ferro manganese with a lower Carbon content.</p> <p>During the decarburization process, the oxygen atoms bond, not only with the carbon, but also with other impurities that remain after the fluxing in the furnace. These impurities oxidize and form a layer of slag in the converter which is tapped separately to the refined ferro manganese. This slag is then cooled and sized through a crushing plant for beneficiation purposes such as silico-manganese production.</p> <p>Please see attached a process flow chart.</p>	
PRODUCTION PROCESS FLOW CHART ATTACHED	YES X	
WASTE CLASSIFICATION		GENERAL X
IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE	N/A	
*A process flow chart must be attached to the process description		

RISK ASSESSEMENT WITHOUT MITIGATION

Activity	Risk Description	Environmental Receptors	Assessment of Risk					Significance
			Impact	Probability	Magnitude	Duration	Scale	
Handling of slag	Accidental spillage into the environment while loading/offloading slag	Surface water	Minor localised contamination	3	4	3	1	24 = low
		Groundwater						
		Soil						
Transportation to harbour	Potential for slag to emit dust during loading/offloading	Air	Deterioration of air quality	2	2	3	1	12 = low
	Potential for irritation of slag dust to the skin and eyes humans while handling	Human health	Potential for irritation	2	4	1	1	12 = low
Transportation to harbour	Potential for slag to become air-borne during transportation	Air	Deterioration of air quality	3	2	1	3	18 = low
		Other road users	Damage to other vehicles					
Transportation to harbour	Accidental spillage into the environment while transporting slag	Surface water	Minor localised silt contamination	2	4	3	3	20 = low
		Soil						

	Vehicle accident	Human health	Potential for injury/death	3	10	5	3	54 = moderate
Storage at harbour	Accidental spillage into environment	Surface water	Minor localised silt contamination	3	4	3	1	24 = low
		Groundwater						
		Soil						
Transportation overseas via ship	Accidental spillage into environment	Ocean	Ocean water pollution	2	6	3	5	28 = low

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 to 10 years)
6 - Moderate	3 - Medium-term (12 months to 5 years)
4 - Low	2 - Short-term (0 to 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 - Improbable
0 - None	0 - None

Magnitude

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 impact to occur. The potential impact could be most likely to occur, unlikely, etc.

Assessment of Significance of Impact

Significance rating of the potential impacts illustrates the importance of the impact itself. The size of 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 impact, the following method was used:

Significance Points (SP) = (Magnitude + Duration + Scale) x Probability

The values of SP are then ranged as follows:

Rating		Description
SP >60	Indicates high environmental significance	An impact which could influence the decision about whether or not to proceed with the activities regardless of any possible mitigation.
SP 30 -- 60	Indicates moderate environmental 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	Indicates low environmental 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 positive consequences/effects

I, PAUL BOTHA hereby declare that I have read the completed the 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).

Applicant (Full names) PAUL BOTHA

Designation General Works Manager

Signature 

Date 15/8/2019 Place CATO RIDGE

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Date Received			
Decision Taken	Authorised	<input type="checkbox"/>	Not Authorised (provide reasons)
Reference Number			