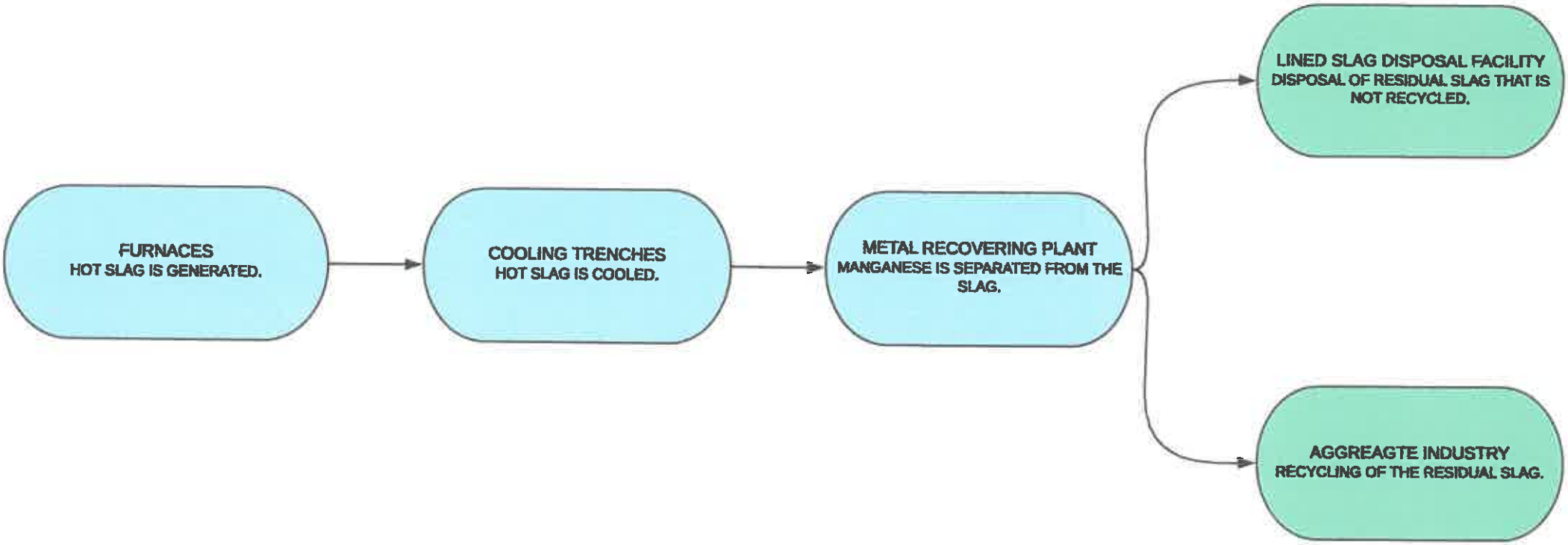
environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

APPLICANT	Assmang (Pty) Ltd
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Manganese Slag
BENEFICIAL USE/S	Aggregate Replacement
WASTE GENERATING FACILITY OR FACILITIES	
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	Eddie Hagan Drive, Cato Ridge
GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES	29°42'16.55"S 30°36'55.92"E
	29°42'25.51"S 30°37'08.34"E
	29°43'20.72"S 30°36'24.07"E
	29°43'23.92"S 30°36'40.55"E
CONTACT PERSON	
NAME	Wessel Oosthuizen
ADDRESS	PO Box 21 Cato Ridge 3680

EMAIL ADDRESS	wesselo@feralloys.co.za	
TELEPHONE	031 782 5100	
*** DETAILED DESCRIPTION OF WASTE GENERATING PROCESS**	The process at Assmang – Cato Ridge, involves the importation of manganese rich ores, which are heated in electric submerged arc smelter furnaces, using various reductants and fluxes, to produce carbon ferro manganese alloys. Molten manganese is tapped from the furnaces and cooled to form cast metal ingots. The slag and other by-products are removed from the furnaces periodically by motorized skips. The slag is transferred to the slag handling area where it is allowed to cool. The slag is then processed through the 'metal recovery plant' to extract as much of the remaining metal from the slag and the resultant slag is placed onto the slag stockpile on the site. The slag is then crushed, washed and sorted, and 3 sizes of slag are then available for re-use: (-1mm fines, 1-6mm coarse 'sand' and 6-25mm slag 'stones').	
PRODUCTION PROCESS FLOW CHART ATTACHED	**YES**	[redacted]
WASTE CLASSIFICATION	[redacted]	**GENERAL**
IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE	The waste is not deemed to be hazardous	
***A process flow chart must be attached to the process description**		


FURNACES
HOT SLAG IS GENERATED.
COOLING TRENCHES
HOT SLAG IS COOLED.
METAL RECOVERING PLANT
MANGANESE IS SEPARATED FROM THE SLAG.
LINED SLAG DISPOSAL FACILITY
DISPOSAL OF RESIDUAL SLAG THAT IS NOT RECYCLED.
AGGREAGTE INDUSTRY
RECYCLING OF THE RESIDUAL SLAG.

RISK ASSESSEMENT WITHOUT MITIGATION

Activity	Risk Description	Environmental Receptors	Assessment of Risk					Significance
			Impact	Probability	Magnitude	Duration	Scale	
Storage of slag	Dust	Air Quality	Reduction in air quality	3	6	1	1	24
	Contaminated runoff	Water Quality	Water pollution	2	4	2	2	16
	Dust in air Presence of stockpile	Aesthetics	Visual impact	4	4	1	2	28
	Contamination	Soils	Soil pollution	2	4	3	1	16
	Dust	Health	Risk of inhalation	3	6	1	1	24
	Waste reduction	Landfill airspace	Reduction in waste to landfill	5	8	5	3	+80
Handling and crushing of slag	Dust	Air Quality	Reduction in air quality	4	6	1	2	36
	Contaminated runoff	Water Quality	Water pollution	2	4	2	2	16
	Dust	Aesthetics	Visual impact	4	4	1	2	28

	Contamination	Soils	Soil pollution	2	4	3	1	16
	Use of Machinery	Noise	Disturbance in residential areas	4	4	1	1	24
	Dust	Health	Risk of inhalation	4	6	1	2	36
Transportation of slag	Dust	Air Quality	Reduction in air quality	3	6	1	2	27
	Spillage	Water Quality	Water pollution	2	4	2	2	16
	Dust	Aesthetics	Visual impact	3	2	1	2	15
	Contamination via spillage	Soils	Soil pollution	2	2	3	2	14
	Vehicle noise	Noise	Disturbance in residential areas	3	4	1	2	21
	Use of heavy vehicles	Roads and Traffic	Increase in traffic and safety risk	4	4	1	2	28
	Dust and vehicle movement	Health	Risk of inhalation	3	4	1	2	21

Use of final product	Employment opportunities	Socio economic	Job creation	4	4	3	2	+36
	Dust	Air Quality	Reduction in air quality	2	2	1	2	10
	Contamination with dust/waste	Water Quality	Water pollution	2	2	2	2	12
	Contamination with dust/waste	Soils	Soil pollution	2	2	3	2	14
	Dust	Health	Risk of inhalation	2	2	1	2	10
	Use of slag in place of raw materials	Raw material usage	Reduction in raw material usage	5	8	4	3	+75

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) ASSMANG - Cato Ridge Smelter

Designation General Works Manager

Signature

Date 9 January 2019 Place Cato Ridge.

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Date Received				
Decision Taken	Authorised		Not Authorised (provide reasons)	
Reference Number				