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)
File Reference Number:	12/9/11
NEAS Reference Number:	
Date Received:	

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	Illovo Sugar (South Africa) (PTY) Ltd
CONTACT PERSON	Nicole Geoffrey (SHERQ Officer: Environment & Risk)
NAME	Nicole Geoffrey
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WASTE GENERATING FACILITIY OR FACILITIES							
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	1 Mill Rd, Sezela, Scottburgh, Kwazulu-Natal, 4185. South Africa.						
GPS CO-ORDINATES AT CORNERS OF WASTE GENERATING FACILITY OR FACILITIES	Pin Locations	LATITUDE			LONGITUDE		
	A	30°	24'	0.34"S	30°	40'	1.44"E
	B	30°	24'	1.95"S	30°	40'	8.40"E
	C	30°	23'	58.67"S	30°	40'	16.65"E
	D	30°	23'	58.19"S	30°	40'	17.03"E
	E	30°	23'	57.45"S	30°	40'	16.32"E
	F	30°	23'	57.53"S	30°	40'	15.85"E
	G	30°	23'	55.12"S	30°	40'	16.76"E
	H	30°	23'	54.45"S	30°	40'	14.40"E
	I	30°	23'	53.43"S	30°	40'	12.51"E
	J	30°	23'	51.92"S	30°	40'	10.99"E
	K	30°	23'	51.83"S	30°	40'	8.79"E
	L	30°	23'	50.22"S	30°	40'	9.71"E
	M	30°	23'	48.67"S	30°	40'	8.72"E
	N	30°	23'	47.26"S	30°	40'	9.15"E
	O	30°	23'	45.25"S	30°	40'	8.36"E
	P	30°	23'	45.50"S	30°	40'	6.74"E
	Q	30°	23'	44.61"S	30°	40'	6.49"E
	R	30°	23'	43.99"S	30°	40'	5.87"E
	S	30°	23'	40.94"S	30°	40'	5.51"E
	T	30°	23'	40.83"S	30°	40'	4.53"E
	U	30°	23'	42.43"S	30°	40'	2.77"E
	V	30°	23'	41.42"S	30°	40'	1.08"E
	W	30°	23'	43.14"S	30°	40'	0.51"E
	X	30°	23'	46.83"S	30°	40'	1.71"E
	Y	30°	23'	48.16"S	30°	40'	59.01"E
	Z	30°	23'	50.63"S	30°	40'	59.37"E
	AA	30°	23'	52.95"S	30°	40'	0.66"E
	BB	30°	23'	53.00"S	30°	40'	58.81"E
	CC	30°	23'	55.38"S	30°	40'	56.55"E
	DD	30°	23'	58.12"S	30°	40'	55.90"E

	EE	30°	23'	59.18"S	30°	40'	57.96"E
	FF	30°	23'	59.96"S	30°	40'	57.96"E
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Boiler ash.						
BENEFICIAL USE/S	Substitute for sand: • in the construction industry, • Concrete Blockmaking, • Soil enhancer for farms and nurseries.						

WASTE GENERATING PROCESS		
DETAILED DESCRIPTION OF WASTE GENERATING PROCESS[1]	**Waste Generating Process:** **Waste stream- boiler ash** Pea coal and bagasse are burnt in four (4) boilers. The fine ash from the stacks is collected with scrubber water and is combined with quenched bottom ash to form a composite ash slurry. The ash slurry is piped to a dirty water ash dam. The dirty water is retained for some time to settle out the ash. The supernatant liquid is transferred to the clean water dam. The ash in the dirty water dam is to be used for beneficiation. Boiler ash is the waste stream relevant to this waste exclusion application, as it is to be used in blockmaking , construction projects and as a soil enhancer for farmers.	
PRODUCTION PROCESS FLOW CHART ATTACHED	**YES**	NO
WASTE CLASSIFICATION	**HAZARDOUS**	GENERAL

IF HAZARDOUS LIST THE HAZARDS OF THE WASTE	• GHS Hazardous:
	  ○ Skin Irritation: - Cat 2: H315
	  ○ Serious Eye Damage . Cat 1: H318.
	  ○ Respiratory Sensitization, Cat 1: H334
	• Assessment for disposal:
	  ○ Based on GN R634: Overall waste disposal to landfill: , Type 3 Waste Class C Landfill (GLB+). Low risk	

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

RISK ASSESSMENT WITHOUT MITIGATION

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
Context • Illovo Sezela Sugar Mill and downstream production plant has on their SHEQ system: – The Illovo Code of Conduct and Business Ethics. – An overarching ILLOVO SHERQ policy. – Their own in house Standard Operating Procedures (SOP) – The Illovo Integrated Risk Management System (IIRMS) to ensure that the standards to which the business conforms are unified under a single platform, guiding and measuring compliance. • The intention is to maximize the intended beneficial use of the waste, while minimising								

any unacceptable impacts to people, environment and economic harm.								
Ash preparation at ash dam for removal by public. i.e.: desludging the dam.	• Turbulence caused within the dam body. • Spillages outside of dam containment boundary.	• Environment and safety. • Disturbed water causes greater turbulence in the otherwise clarified water. This is then carried over to the clean water dam which causes an upstream usage problem. • Spillages into the outside environment: contaminating soils and possibly natural water courses.	Low	2	4	2	2	16
Ash removal for substitution and supplementation for sand in the: • concrete blockmaking • construction industry.	• Storage over time and running out of storage space, if demand is low. • Windblown dust if ash is dry.	• **Spillage** o Clean water dam contamination. o Surface water contamination. o Possible ground water pollution	High	2	6	1	2	18

• Farm and nursery for soil enhancement/fertilizer.	• Possibility for a dam wall catastrophic failure	○ Surrounding environment impacted by the spill. • **Windblown dust: Health and safety** ○ Local airborne nuisance dust. ○ Eye damage, and skin irritation. ○ Inhalation of the windblown dust causing respiratory sensitization. ○ Ingestion of the ash. • **Health and Safety.** No signages for risks, dangers and correct PPE.						
Access to ash dam and ash storage area	**Security and safety:** • Unauthorised access to the ash area. • Unauthorised removal of ash. • Damage to infrastructure. • Theft of equipment. • Threat to safety.	**Health and safety:** The removal of ash in an unauthorised and unmanaged way may lead to the following undesired consequences: • Accidents; • Spillages;	Low	1	4	2	2	8

		• Health impacts to people; and • Environmental impacts. **Security:** • Damage to or theft of infrastructure and equipment, could lead to unwanted consequences like spillages into the environment from the dam.						
Process of transferring ash from the storage area to the receiving vehicles.	**Dust:** • Windblown dust from the process of ash transfer by the front-end loader to the receiving vehicle. **Spillage:** Areas outside of the ash storage area.	**Health:** • Driver of vehicles, employees Risk to health: eyes and respiratory systems. **Environment:** • If ash storage is close to the boundary fence there is a risk to the surrounding environment by windblown dust.	Low	3	4	1	1	18
Transporting of ash to: • blockmaking plant. • construction site.	**Spillage:**	**Spillage :**	Medium	3	5	2	2	27

• farmer's lands.	• Overfilling the receiving truck bin carrying capacity. • Windblown ash. • Road accidents which may result in spillages on the main and access roads. • Spillages which may result in accidents. • Non – compliance to the ROAD TRAFFIC ACT. (RTA), driving unsafe vehicle. • Soil contamination. • Environmental affects to the flora and fauna. • Contamination of the natural watercourses / stormwater systems.	• Soil, road, surface and groundwater contamination. • Ash spillage on roads and grass verges within community residential areas. **Dust:** **Health and Safety:** **Driver and Public:** Windblown dust on: • Surrounding environment, • Driver of following vehicles: eyes and respiratory systems. • Vehicle damage due to dust scouring. • Pedestrians and cyclists affected by windblown ash. Causing a physical and health hazard to people and animals in the vicinity **Safety and compliance to the RTA,**						

		• Health and safety of the driver and general public could be affected in the event of spillage due to compromised vehicle integrity - it will endanger the lives of driver and the public. • Incorrect or no placarding on vehicles. **ISSA Reputation:** o Damage to reputation as ISSM is seen as the owner and source of the ash. **Economic** Financial repercussions for spillage clean up.						
Ash off-loading from vehicle.	**Spillage:** • Outside of dedicated storage area. **Health**	**Environment:** • Spillages and windblown dust into the natural water course, into the	Moderate	4	4	2	2	32

	• Windblown dust. **Dust.** Vehicle transportation along dirt roads to ash storage/off-loading areas near to residential areas in line of windblown dust.	surrounding area affecting flora and water quality. • Windblown dust affecting the health of the people in the immediate vicinity.						
Storage at end user facilities.	**Environment:** • Run off, • Windblown dust.	• **Environment:** Dust of boiler ash, contaminating the surrounding flora ; surface or groundwater resources. • **Health and Safety:** Incorrect and/or no safety signages indicating risks dangers and correct PPE.	Low	3	4	2	2	24
Ash management during the process of: • concrete block making. • incorporating into construction uses.	**Dust:** • **Health:** There may be health impacts from working with the dried ash dust during the transfer or loading process.	**Dust:** **Health.** There may be health impacts from working with ash through exposure routes such as, eyes, mouth, inhalation and skin.	Medium	3	5	2	2	27

• Distribution over farm land and ploughing ash in	• Failure to use PPE during the course of the entire operation. • **Environment:** dust blown onto the surrounding areas. **Environment:** • Any wet ash possible run-off from the transfer or loading operations will affect the receiving environment if not managed correctly, especially near to natural water sources. • Any uses in the construction industry or farmlands may involve the leaching out of the heavy metals into the soils, ground water and surrounding surface water courses and soils.	Correct PPE is required for the entire duration of the operation, to keep the dust from the skin, hands, feet, eyes and lungs. **Environment:** • Any run-off from the operations into the water during the operations and transfers as well as during rain run-off will affect the receiving environment if not managed correctly. • Leaching of heavy metals into the ground water, surrounding water courses and soils if allowed to remain on the farm soils or construction site soils for long.						

Secondary waste generation	• **Environment:**. Secondary waste generation would involve ash mixed with a multitude of other items like oils, grease, as well as other items in the storage sites if they are not managed. • The ash too can contaminate items like greases and any fuel kept uncovered on site.	**Environment:** Should this contaminated ash escape into the environment through poor management: • the environment: flora, fauna, soil and natural water sources would be impacted. • Unnecessary waste is created.	Low	1	2	2	2	6
Socio-Economic Risks: Positive spin offs at risk should ash beneficiation not be possible.								
Employment and utilization of a renewable resource.	• Employment from the local community for the operation as the resource is freely available.	**Local economy.** Particularly amongst the vulnerable community groups: youth and women.	Positive					+
• The making of blocks would create business opportunities for the community as well as opportunities to employ local community members.	• Some members of the community also can provide building services to build simple houses. • The boiler ash is not sold.	**Local economy.** • Particularly amongst the vulnerable community groups: youth and women.	Positive					+

• The opportunity for builders to build simple housing from local blocks made in the area. • Space is created in the dirty water/ash dam.	• The dam wall may breach if filled too much with ash slurry, causing operations to stop. With the ash being removed in a sustainable way, the dam can be kept safe without the need to increase the height of the dam wall.	• ISSM can develop their operations by having funds available for this, thus increasing the opportunities for employment.						

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:

Significance (S) = (Magnitude + Duration + Scale) x 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, NICOLE GEOFFREY (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 ~~applicant~~[2]/ Signature on behalf of the applicant:

ILLOVO SUGAR (SOUTH AFRICA) (PTY) LTD.

Name of Applicant:

SHERQ OFFICER

Designation

26 SEPTEMBER 2023

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.