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 (SHERQ Officer: Environment & Risk)
ADDRESS	1 Mill Road, Sezela, Kwazulu-Natal. 4215.
E-MAIL ADDRESS	NGeoffrey@illovo.co.za
TELEPHONE	**General Mill Contact no**: 039 975 8000 **Tel:** +2731 450 7821
CELL PHONE	+2778 496 9843

WASTE GENERATING FACILITIY OR FACILITIES							
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	1 Mill Road, Sezela, Kwazulu-Natal. 4215.						
GPS CO-ORDINATES AT CORNERS OF WASTE GENERATING FACILITY OR FACILITIES (Filter cake storage site)	**Pin locations**	**LATITUDE**			**LONGITUDE**		
	A	30°	24'	46,08"S	30°	40'	37.76"E
	B	30°	24'	46.22"S	30°	40'	37.92"E
	C	30°	24'	46.33"S	30°	40'	37.51"E
	D	30°	24'	46.45"S	30°	40'	37.71"E
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	FILTER CAKE						
BENEFICIAL USE/S	AS A SOIL ENHANCER/FERTILIZER FOR SUGAR CANE FARMERS						

<table>
<tr><th colspan="4">WASTE GENERATING PROCESS</th></tr>
<tr><td rowspan="2">DETAILED DESCRIPTION OF WASTE GENERATING PROCESS[1]

PRODUCTION PROCESS FLOW CHART ATTACHED</td><td colspan="3">REFER TO THE REPORT for details.
Waste stream
Filter cake is the waste stream relevant to this application for exclusion from the waste stream. It is to be used as a fertilizer and soil enhancer for sugar cane farms.
Facility process description to produce filter cake
• Cane Milling: Cane is shredded/chopped.
• Juice Extraction: The shredded cane is taken through the diffuser where water is used to “wash” out or extract the juice containing the sucrose.
• Clarification: various chemicals (lime and phosphates), flocculants and aids (second source of filter cake waste) are added to the juice to remove the suspended matter and organic matter to clarify the juice.
• Filtration: This is allowed to settle as a sludge and is sent through an Oliver vacuum filter where the moisture is removed from the sludge. This sludge is the filter cake.</td></tr>
<tr><td>YES√</td><td>NO</td></tr>
<tr><td>WASTE CLASSIFICATION</td><td>HAZARDOUS √</td><td>GENERAL</td></tr>
<tr><td>IF HAZARDOUS LIST THE HAZARDS OF THE WASTE</td><td colspan="3">• Type 0 Waste | Prohibited Waste (per GN R636 (5)):
○ (5)(1)(b), Waste with a pH value of <6 or >12.
pH: Analytical value of: 5.3 pH.
○ (1)(c): Flammable waste with a closed cup flashpoint <61 °C.
Analytical value of: 60 - Flash°C.
○ (5)(1)(q)(ii) Waste with a moisture content >40% or that liberates moisture under pressure in landfill conditions, and which has not been stabilised by treatment.
Analytical value of: 75 %.
• Future disposal prohibitions:
○ (1)(r)(iv): >6% Total Organic Carbon (TOC). Hazardous waste.
Analytical value of: 69 %. (Prohibited from: Aug 2028)</td></tr>
</table>

[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 Sugar (South Africa) Sezela Mill and Downstream Production Plant (ISSM) has on their SHEQ system: o The Illovo Code of Conduct and Business Ethics and an overarching ILLOVO SHERQ policy. o Illovo has developed its own Integrated Risk Management System (IIRMS) to ensure that the standards to which the business conforms are unified under a single platform, guiding and	• Positive		Positive					+

measuring compliance. ○ IIRMS guidelines have been developed from best practices in the Illovo Group, and from best practice in their industry where necessary. ○ IIRMS assists in the management of environmental risks at Illovo and ensures that these standards are implemented by the whole group. • Safety Data Sheet is a document for management of the filter cake to minimise any risk. • The GHS classification and the SSV comparison of the filter cake give very good indications of the hazards encountered								

by all affected stakeholders when working with filter cake. It helps to identify areas which must be managed in order to minimise or eliminate risks. The intention is to maximize the intended beneficial use of the waste, while minimising any unacceptable impacts to people, environment and economic harm. • SOP for management of dam/SHERQ Policy. • Incident investigations for any non compliances.								
Filter cake removal on request	• Running out of storage space. • Storage for extended time and running out of emergency storage space, if the removal rate is low. • Possible overflows into stormwater or	Environment • Possible overflows into stormwater or sludge dams of the filter cake and filter cake. This then overflows into the surrounding environment.	High	1	6	1	1	8

	sludge dams of the filter cake.							
Access to filter cake storage area	**Security and safety.** • Unauthorised entry into the facility. • Unauthorised removal of filter cake. • Risk of fires due to unauthorised person's negligence and unmanaged behaviour.	**Health and safety:** Should the access not be monitored, the removal of filter cake in an unmanaged way can lead to undesired consequence: accidents, spillages and harm to people and the environment.	Low	1	4	2	2	8
Process of transferring filter cake from the storage bins to the receiving vehicles.	**Dust:** Windblown from the process of filter cake (if dried) transfer with front end loader. Sparks could trigger a fire. **Spillage:** onto area outside of bunded area. Onto personnel not authorised to be at the location. **Safety:** Fires from sparks.	**People:** **Driver of vehicles and environment and health**: • Eyes and respiratory systems in case of dust from dried spilt filter cake, or from dust contaminated with filter cake in the area. • If filter cake storage is close to the boundary fence there is a risk to the surrounding	Low	3	4	1	1	18

		environment by the wind-blown dust. • Unauthorised personnel not permitted to be in the area may be at risk during the transfer of spillage onto them, onto their clothing. **Economics:** The cost of unnecessary effort to clean-up spillages on site, and that which the vehicle may spill on the route even within the mill. **Safety:** Fire may be set off by sparks which places the mill at risk.						
Transporting of filter cake to the farm.	**Health, Safety and Environment.** • Overfilling receiving vehicle trailer with filter cake. • Spillage onto roads, causing a nuisance as well as a safety	**Health and Safety:** **Health: People:** • spills onto their clothing when walking on the roads, and splashed on with motor vehicles driving	Medium	3	5	2	2	27

	hazard for vehicles by slipping. • Filter cake has a strong odour. • Road accidents. • Non –compliance to the ROAD TRAFFIC ACT. (RTA). • Vehicle properly placarded for the waste stream. • Soil contamination from spillages. • Stormwater and natural water resource contamination by unmanaged washing of spillages from roads into the stormwater drains. • Affects the flora and local animals, domestic and wild as well as residents. • Natural water sources contamination.	through spilt materials. • Spills within residential areas causing a great nuisance. **Safety** and **compliance to the RTA** • The vehicle transporting the filter cake's integrity is compromised endangering the lives of driver and the public. • If vehicle is not properly maintained, the safety and integrity of the vehicle is compromised further. Includes the driver of the vehicles. • They must be correctly trained and licenced for driving on public roads with consideration.						

		• The judgement by driver of the ability of the vehicle to manage the farm roads without getting stuck and causing spills . • Vehicle properly placarded for the waste stream. to warn any personnel of risk from the waste stream in the case of any accident. **Environmental and reputation:** • Spillage onto the road as well as spreading into the surrounding environment by wind and rain. • Damage to reputation as GSC is seen as the owner and source of the filter cake. • Nuisance to vehicles following the transportation						

		vehicle by windblown filter cake spray. • Pedestrians and cyclists affected by filter cake splashing onto them. Causing a physical and health hazard to people and animals in the vicinity. • Filter cake on the roads and walk ways may have run-off into neighbouring properties and into natural water courses.						
Vehicle filter cake off-loading on designated area.	**Spillage:** • Outside of designated area. • Depending on the offloading procedure, the vehicle used to offload the filter cake may spill residual filter cake when travelling to	**Environment:** Natural water course into the surrounding area affecting flora and water.	Moderate	4	4	2	2	32

	other places to do work							
Storage at end user facilities	**Health, Safety and Environment** • Run off and possible windblown dust if filter cake is allowed to dry. • Unauthorised removal of material. • Biological degradation of natural materials inside body of filter cake thus causing temperatures to rise above the flash point and cause internal perpetual smouldering in the body of the stored filter cake. • Smouldering causing cavities. within the body.	**Environment:** • Run-off of any liquid. • Dust of possibly dried out filter cake, blown by wind into the surrounding area affecting the flora and water. • Possible contamination of the environment. and natural water source is the principle concern. This will affect the water quality possible pH change and adding organic load which may cause eutrophication if water source is small. • Unmanaged waste activity by unauthorised removal, resulting in possible human health problems and	Low	3	4	2	2	24

		environmental damage. • Smouldering of filtercake left for some time can cause fire in surrounding areas as well creating a safety problem to people walking on top of this waste. They may fall into the cavern farmed and thus be very seriously injured or may be fatally affected.						
Filter cake management during distribution onto the intended farm soil as the fertilizer/soil enhancer	**Dust:** **Health.** • There may be health impacts from working with the possibly dried filter cake during the spreading of fertilizer operations. • Possible irritation of eyes if product goes into the eyes. **Environment:**	**Dust:** **Health.** • There may be health impacts from working with filter cake filter cake during the spreading if it has been allowed to dry out. • Correct PPE is required, to keep the dust and the filter cake from the skin,	Medium	3	5	2	2	27

	Any run-off from the filter cake spreading operations will affect the receiving environment if not managed correctly, especially near to natural water sources.	hands, feet, eyes and lungs. • The filter cake must not be contacted by the skin, feet, hands and eyes. Hence appropriate PPE and management of the material must be adhered to as per SDS. **Environment:** • Any run-off from the operations into the water during the spreading out onto the fields as well as during rain run-off will affect the receiving environment if not managed correctly. • The same management protocol would be required as with commercial fertilizers and lime onto the fields.						

Repeat application onto the same fields.	**Environment:** The soils may have salinity or other chemical build up if the soils and application are not monitored	**Environment:** The soil viability to propagate the sugar cane crops will be affected if not monitored correctly	Low	2	2	2	1	10
Secondary waste generation	**Environment:** • Secondary waste generation would involve filter cake with a multitude of other contaminant items like litter, oils, grease, as well as other items if the storage sites are not managed. • Filter cake may also contaminate other streams if spillages occur.	**Environment:** Should this contaminated filter cake escape into the environment through poor management the impacts on the environment: flora, fauna, soil and natural water sources would be impacted..	Low	1	2	2	2	6
Socio-Economic Risks: Positive spin offs at risk should filter cake beneficiation not be possible.								
Employment and utilization of a renewable resource which is redirected off landfill site.	• Employment within the operation for management of resource distribution from site. • Opportunities created within the local community as	**Local economy.** • Particularly amongst the vulnerable community groups: youth and women. • Focus on agricultural projects	Positive					+

	the resource is freely available							
Small business development and community based projects. Example growing vegetables utilizing this mix as a fertilizer medium.	Some members of the community also can provide opportunities for themselves by growing healthy vegetables to sell. The filter cake is not sold.	**Local economy.** Particularly amongst the vulnerable community groups: youth and women. Opportunities for project based use of the resource.	Positive					+
Opportunities created from properly researched beneficiation uses of filter cake being used elsewhere and new opportunities being created.	Reduced pressure on mill facilities	Mill economy and the environment	Positive					+

RISK ASSESSMENT WITHOUT MITIGATION

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	

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 GEOFFRET (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.