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 – Noodsberg Sugar Mill					
Contact person	Country SHERQ Manager					
Name	Shaun Ramsunder					
Address	PO Box 194, Durban, South Africa, 4000					
E-mail address	SRamsunder@illovo.co.za					
Telephone	031 508 4591					
Cell phone	084 554 9664					
WASTE GENERATING FACILITIY OR FACILITIES						
Physical address of facility or facilities	1 Oliver Pearce Avenue, Noodsberg, Dalton, South Africa					
GPS co-ordinates at corners of waste generating facility or facilities	**LATITUDE**			**LONGITUDE**		
	29	21	7.55	30	40	58.12
	29	21	8.96	30	41	2.55
	29	21	0.61	30	41	8.18
	29	20	57.54	30	41	5.72
	29	20	55.04	30	41	0.91
Waste stream or portion of a waste stream to be excluded from the definition of waste	Sludge					
Beneficial use/s	Soil enhancer on sugar cane farms.					
WASTE GENERATING PROCESS						
Detailed description of waste generating process[1]	Please refer to Annexure 1 for the process flow chart, which shows the different process streams as well as the waste generated off these streams within the mill. The Noodsberg Sugar Mill has a waste water treatment system, whereby, the waste water (influent flow of all the waste liquids from the mill processes) is collected in dams. This has a residence time that allows the sludge to settle out and to stabilise to reduce the Chemical Oxygen Demand (COD) (organic components) using the anaerobic dam system of treatment. The sludge is removed from the dam once the sludge level rises to a predetermined level in the dam. It is then dried out where it is then collected and dispatched to the farmer's lands.					
Production process flow chart attached	**YES** Please refer to Annexure 1.			NO		
Waste classification	**HAZARDOUS**			GENERAL		
If hazardous list the hazards of the waste	i. GN R635 (7)(2), the waste is assessed overall as a **Type 0 waste**, which is **Very high risk due to the flash at 60ºC.** GNR 636 (5)(1)(c). ii. **GHS:** HAZARDOUS. Physical: H226 Cat 3. Flammable Liquid. iii. **SANS 10228.** Hazardous: Class 4.1. **SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S**					

[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	
Sludge removal on request	**Environment:** • Storage over time and • Running out of dam storage space, if demand is low. **Safety:** The closed cup flash point of 60^{o}C of the sludge, hence the risk of heat source: eg: o spark, or o hot ash from the boiler stacks, or o carelessness with cigarette ash etc, poses a risk due to the risk of fire.	**Health and safety:** • Possible overflows into the environment and then into the natural watercourse • Fire within the storage facility boundary of flammable materials.	High	2	6	2	2	20
Access to sludge/sludge storage area	**Gate security:** • Unauthorised entry into the facility. • Unauthorised removal of filter cake.	**Health and safety:** Should the access not be monitored, the removal of sludge in an unmanaged way can lead to undesired consequence: • Accidents, • Spillages and • Harm to people and the environment. • The induction	Medium	1	4	2	2	8

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		process for the entry to the sludge storage areas, would go through the hazards and safety measures to implement. • The hazard is to the people/persons the enter the area without permission, which could result in an accident.						
Process of transferring sludge to the receiving vehicles.	• Spillage outside of protected area. • Splash onto personnel not authorised to be at the location. • Dust from low moisture/dried sludge.	**People: driver of vehicles and environment** • If sludge storage is close to the boundary fence there is a risk to the surrounding environment by the sludge run-off into the natural water courses. • Unauthorised personnel may be at risk during the transfer of spillage onto them, onto their clothing. • Risk to health. • Overfilling of the	Low	3	4	1	1	18

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		transportation vehicle resulting in spillages within the mill property resulting in possible run-off **Economics:** The cost of unnecessary activity to clean-up spillages on site.						
Transporting of sludge to farm.	**Spillage:** • Overfilling receiving vehicle trailer with sludge • Road accidents. • Non –compliance to the Road Traffic Act (RTA) • Soil contamination. • Affects the flora and local animals, domestic and wild as well as residents. • Natural water sources contamination. • Possible spark or source of heat from some source cause a fire.	**Health and Safety:** **Health: People:** • Spills onto their clothing when walking on the roads, and • Splashed on with motor vehicles driving through spilt materials. • Nuisance **Safety** and **compliance to the RTA** • The vehicle integrity is compromised endangering the lives of driver and the public. • Vehicle is not properly maintained, the safety and	Medium	3	5	2	2	27

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		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. **Environmental and reputation:** • Spillage onto the road as well as spreading into the surrounding environment by wind and rain. • Causes annoyance to the users of the road and local residents in the area • Endangering the						

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		safety of the road users, causing slippery roads. • Damage to reputation as Noodsberg Mill is seen as the owner and source of the sludge. • Nuisance to vehicles following transportation vehicle by windblown sludge and spray onto vehicles. • Pedestrians and cyclists affected by sludge splashing onto them, causing a physical and health hazard to people and animals in the vicinity. • Sludge on the roads and walk ways may run-off into neighbouring properties and into natural watercourse.						
Vehicle sludge off-loading on designated area.	**Spillage:** • Outside of designated area.	**Environment:** Run-off into natural water course.	Moderate	4	4	2	2	32

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
	• Depending on the offloading procedure, the vehicle used to offload may spill residual mixture when travelling to other places to do work.	Into the surrounding area affecting flora and water.						
Storage at end user facilities	• Run off and possible windblown dust if mixture is allowed to dry. • Unauthorised removal of material. • Sparks could cause the material to burn. • Natural biological processes causing heat build-up in the body to sludge, causing internal heat build - up and then start smouldering.	**Environment:** • Run-off of any liquid. • Dust of possibly dried out mixture, 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; adding organic load which may cause eutrophication if water source is small. • Unmanaged waste activity by unauthorised	High	2	5	2	2	18

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		removal, resulting in possible human health problems and environmental damage. • Smouldering endangers the people and any animals that walk through the area and may fall into the caverns formed by the smouldering material. • Wind may stir up the flames and sparks cause fire in nearby sugarcane fields.						
Sludge management during distribution onto the intended farm soil as fertilizer.	**Dust:** **Health.** There may be health impacts from working with the possibly dried sludge during the spreading of fertilizer operations. **Environment:** • Any mixture run-off from the mixture spreading operations will affect the	**Dust: Health.** • There may be health impacts from working with sludge during the fertilizer spreading if it has been allowed to dry out. • Correct PPE is required, to keep the dust from the skin, hands, feet, eyes and lungs. • The mixture must	Medium	3	5	2	2	27

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
	receiving environment if not managed correctly, especially near to natural water sources. • The SSV1 and 2 values from the guidelines for contaminated solid require that the sludge is not used in a way that will impact natural water sources, neither near informal residential areas.	not be contacted by the skin, feet, hands and eyes. • Hence appropriate PPE and management of the material must be adhered to. • Spreading of the sludge must be done as soon as possible. **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 and toxic component build up if the soils and application are not monitored.	**Environment:** The soils viability to propagate the sugar cane crops will be affected if not monitored correctly.	Low	2	2	2	1	10
Secondary waste	**Environment:**	**Environment:**	Low	1	2	2	2	6

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
generation	Secondary waste generation would involve sludge with other contaminant items like • litter, • oils, • grease, • as well as other items if the storage sites are not managed and wind-blown waste enters the sludge storage/dam.	Should this contaminated sludge escape into the environment through poor management the impacts on the environment: flora, fauna, soil and natural water sources would be impacted.						
Socio-Economic Risks: Positive spin offs at risk should sludge beneficiation not be possible.								
Employment and utilization of a renewable resource which is redirected off landfill site.	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					+
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 sludge is not sold.	**Local economy** • Particularly amongst the vulnerable community groups: youth and women. • Opportunities for project based use of the resource.	Positive					+

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, SHAUN RAMSUNDER (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:

SHAUN RAMSUNDER

Name of Applicant:

COUNTRY SHERQ

Designation

12/06/2023

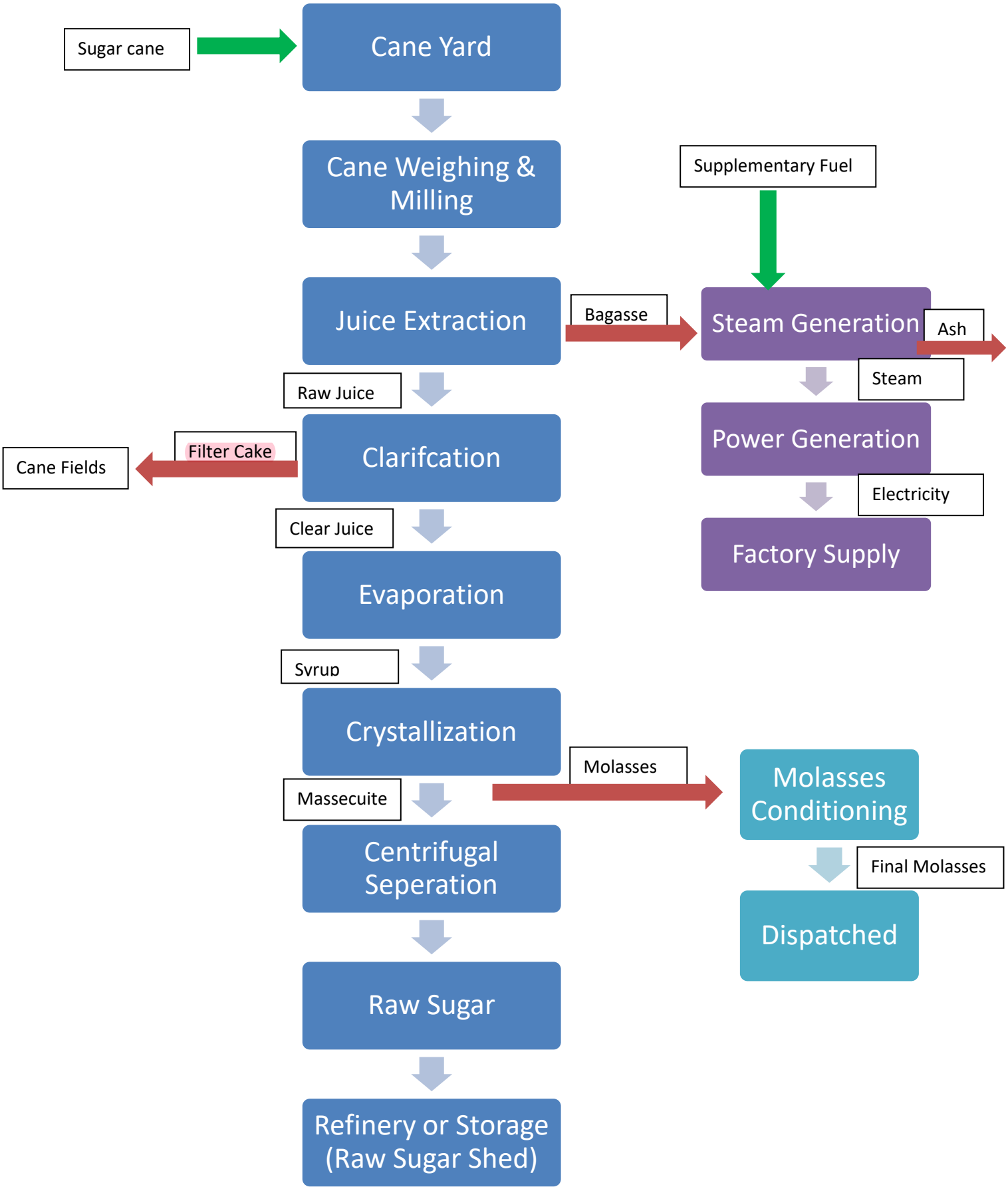
Date:

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

Annexure 1:

Process Flow Chart for Noodesberg Sugar Mill

PRODUCTION PROCESS FLOW DIAGRAM



PRODUCTION PROCESS FLOW DIAGRAM