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 ***Please note that the co -ordinates are of the boilers***	**LATITUDE**			**LONGITUDE**		
	29	21	33.84	30	41	8.29
	29	21	34.53	30	41	8.51
	29	21	34.75	30	41	7.56
	29	21	34.10	30	41	7.31
GPS co-ordinates at corners of waste generating facility or facilities. ***Please note that the co -ordinates are of the onsite ash landfill site.***	29	21	18.78	30	41	1.29
	29	21	23.23	30	41	6.87
	29	21	34.28	30	40	53.19
	29	21	32.03	30	40	52.25
Waste stream or portion of a waste stream to be excluded from the definition of waste	Boiler Ash					
Beneficial use/s	Soil enhancer on sugar cane farms; brickmaking and Landfill cover material at Eshongweni landfill site.					
WASTE GENERATING PROCESS						
Detailed description of waste generating process[1]	Please refer to Annexure 1 for the process flow chart for the ash waste stream and Annexure 2 for the boiler process. A combination of coal, wood, woodchips and bagasse are fed into the boilers and the resultant burnt boiler ash is collected along a moving grate into a sluicing system which helps to cool the ash and to form a slurry. Since it is fluidized it can be pumped to the beach clarifiers where the ash is dewatered and conveyed into tractor trailers and hauled onto the onsite landfill site.					
Production process flow chart attached	**YES** Please refer to Annexure 1 for the process flow chart for the ash waste stream			NO		
Waste classification	**HAZARDOUS**			GENERAL		

If hazardous list the hazards of the waste	• GHS Hazardous:
	  ○ Skin Irritation: - Cat 2: H315
	  ○ Causes Serious Eye Damage . Cat 1: H318.
	• Waste CHEMICALLY assessed as Type 3 waste for class C landfill site.
	• Overall waste assessment: Type 0 due to restrictions/prohibitions.
	  ○ GN R636 S.5: (1)(q)(ii) - waste with a moisture content >40%					

[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: • Noodsberg Mill 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 measuring compliance. o IIRMS guidelines have been developed from best practices in the Illovo Group, and from best practice								

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
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. • The GHS classification and the SSV comparison of the boiler ash give very good indications of the hazards encountered by all affected stakeholders when working with ash. 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								

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
economic harm.								
Ash removal on request	• Storage over time and running out of storage space, if demand is low. • Windblown dust if ash is dry.	**Health and safety:** • Eye damage and skin irritation. • Possible overflows into stormwater or sludge dams of the ash.	High	1	6	1	1	8
Access to ash storage	**Security and safety:** • Unauthorised access to ash area and • Unauthorised removal of ash.	**Health and safety:** Should the access not be monitored, the removal of ash in an unmanaged way can lead to undesired consequence: • Accidents, • Spillages, • Harm to people and the environment.	Low	1	4	2	2	8
• Process of transferring ash from the storage area to the receiving vehicles. • Receiving vehicle loaded with a front-end loader.	• **Dust:** Windblown from the process of ash transfer with front end loader. • **Spillage:** Onto area outside of bunded area. • **Hot ash:** The quenched ash still being too hot after coming from the boilers.	**People: driver of vehicles and environment.** • Risk to health: eyes and respiratory systems. • If ash storage is close to the boundary fence there is a risk to the surrounding environment by	Low	3	4	1	1	18

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		wind-blown dust. • Ensure that the ash is at a safe temperature to remove. **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 site						
For all users of the ash: farmers, blockmakers and EnviroServ: Transporting of ash by appropriate vehicle to final destination.	**Spillage:** • Overfilling receiving vehicle with ash. • Windblown ash. • Road accidents causing spillages on the main roads. • Non – compliance to the Road Traffic Act (RTA) • Soil contamination. • Affects the flora and local animals, domestic and wild. • Natural water sources contamination.	**Health and Safety:** • **Health: People:** driver of vehicles: eyes and respiratory systems. • **Safety** and **compliance to the RTA** : ○ If the vehicle (tractor and trailer) integrity is compromised it will endanger the lives of driver and the public. ○ If 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. ○ The drivers 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** ○ Spillage onto the road as well as spreading into the surrounding environment by wind and rain. • **Reputation:** ○ Damage to reputation as Noodsberg Mill is seen as the owner and source of the						

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		ash. o Ash on the roads and walk ways • **Safety**: o Nuisance to vehicles following tractor and trailer by windblown dried ash. o Pedestrians and cyclists affected by windblown ash. Causing a physical and health hazard to people and animals in the vicinity. • **Economic.** o Financial repercutions for spillage clean up.						
Ash off-loading from transportation vehicle	**Spillage:** • Outside of dedicated storage area. • If another vehicle is used to offload the ash, it may drop residual ash when travelling to other places to do work.	**Environment:** • Spillages in the natural water course and • Into the surrounding area affecting flora and water quality.	Moderate	4	4	2	2	32

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
Storage at end user facilities	• Water run off from: ○ farm storage areas after rain ○ landfill site platform, ○ blockmaker storage area. • Possible windblown dust if ash is allowed to dry.	**Environment:** • Rain run-off from the ○ Fields harming the environment and natural water sources. ○ Landfill site causing unmanaged spreading of the ash onto areas not planned for. ○ Landfill site: possible channeling of run-off rainwater causing erosion of side of disposal area. ○ Blockmakers: run-off causing contamination of the surrounding area soils and water sources. • Dust from dried out ash, blown by wind into the surrounding area affecting the flora and water. • Possible contamination of the	Low	3	4	2	2	24

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		environment and natural water source is the principle concern. • This will affect the water quality ito possible pH change and adding salts which may include heavy metals: lead, etc.						
Farm ash management Ash management during distribution onto the intended farm soil as the fertilizer/soil enhancer. **Landfill site ash management** During the spreading of the ash over the waste body as cover in an even approximately 20cm depth or as required by the landfill site permit. This involved the careful grading of the ash.	**Dust:** • **Health:** There may be health impacts from working with the possibly dried ash dust during the spreading process on the farm or landfill site. • **Environment:** Any ash slurry which may run-off from the ash spreading operations will affect the receiving environment if not managed correctly, especially near to natural water sources.	**Dust:** **Health.** • From working with ash during the spreading or transferring if it has been allowed to dry out. The ash component is deemed hazardous. • Correct PPE is required, to keep the dust from the skin, hands, feet, eyes and lungs. • The ash causes skin irritation and serious eye damage. Hence appropriate PPE and management of	Medium	3	5	2	2	27

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
Blockmaker ash management The process of transferring the ash into the concrete mixer machine or by being manually mixed in the dedicated area.		the material must be adhered to. **Environment:** Any run-off or windblown dust from the operations into natural water sources during the spreading or transfering as well as during rain run-off will affect the receiving environment by siltation or dust if not managed correctly.						
Farm ash management Repeat application onto the same fields.	**Environment:** The soils may have salinity build up if the soils 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 generation	**Environment**: Secondary waste generation would involve ash with a multitude of other items like oils, grease, as well as other items in the storage sites which are not managed.	**Environment:** Should this contaminated ash escape into the environment through poor management the impacts on the environment: flora, fauna, soil and natural water sources would be	Low	1	2	2	2	6

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
			Impact	Probability	Magnitude	Duration	Scale	
		impacted.						
Socio-Economic Risks: Positive spin offs at risk should ash 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					+
Soil enhancement Small business development and community based projects particularly when ash is directed off from themill landfill site for soil enhancement Example growing vegetables utilizing this mix as a fertilizer medium. **Blockmaking** • The making of blocks would create business opportunities for the community as well as opportunities to employ local community members. • The opportunity for builders to build	• Some members of the community also can provide opportunities for themselves by growing healthy vegetables to sell • The community can also make blocks as a business and generate an income. • The ash is not sold.	**Local economy:** Particularly amongst the vulnerable community groups: youth and women.	Positive					+

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
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simple housing from local blocks made in the area. **Landfill site.** The use of ash instead of locally mined soils conserves a valuable resource.								

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, S. Ramsundel (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:

S. Ramsundel

Name of Applicant:

County Smelt

Designation

24/02/2023

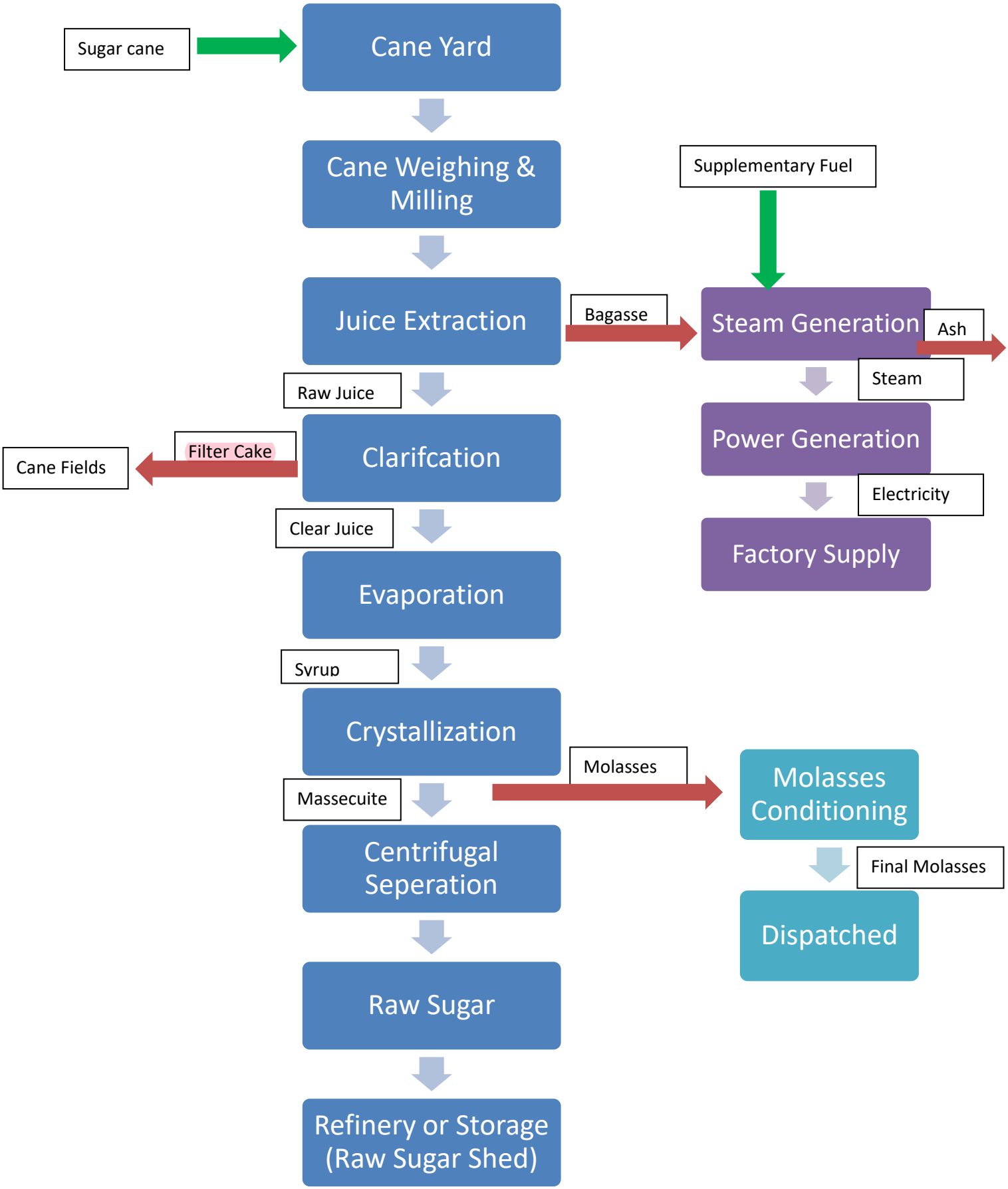
Date:

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

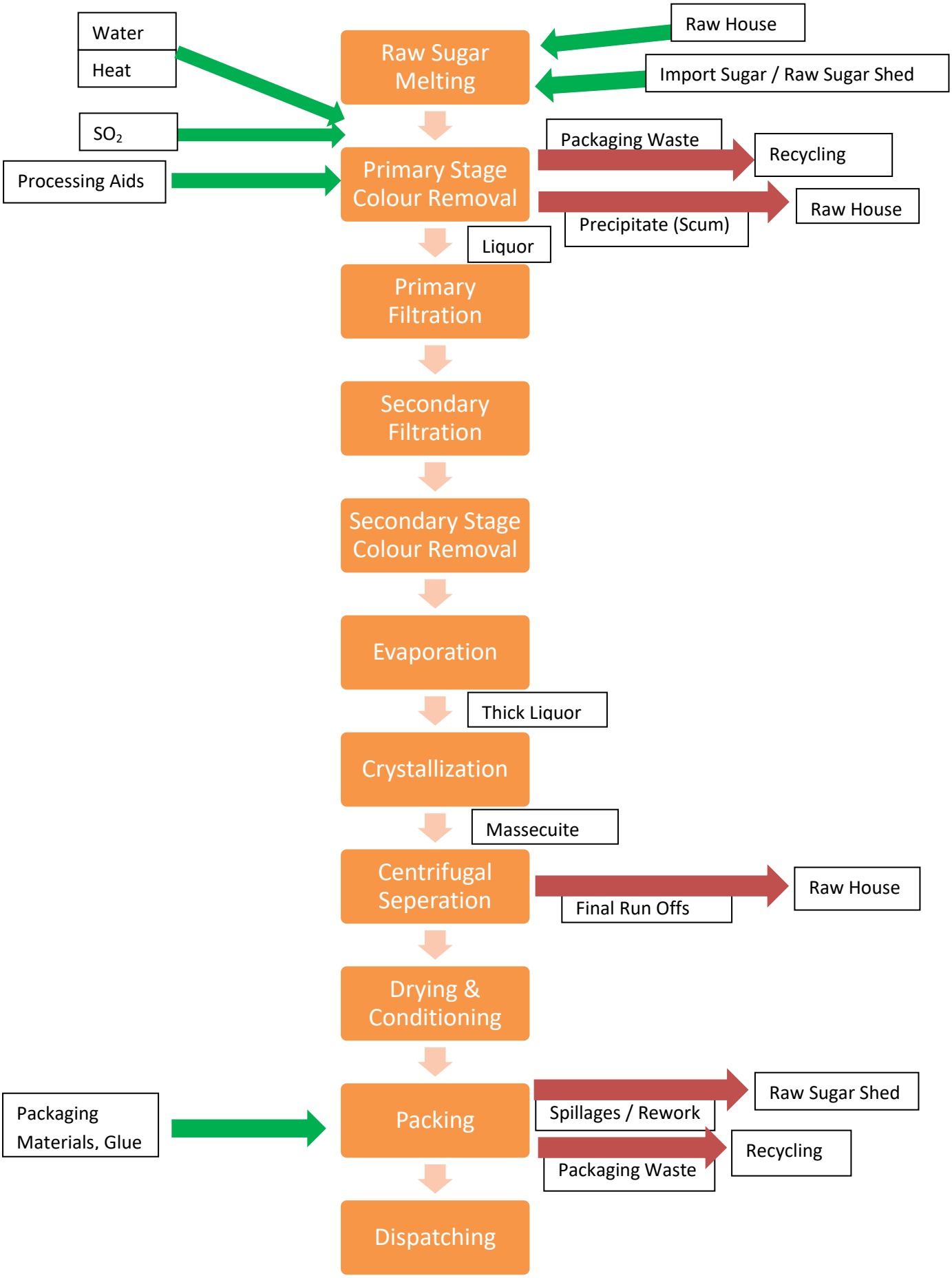
Annexure 1:

Process Flow Chart for Noodesberg Sugar Mill

PRODUCTION PROCESS FLOW DIAGRAM



PRODUCTION PROCESS FLOW DIAGRAM



Annexure 2:

Boiler Process Showing Ash Circuit

NOODSBERG MILL.

ATTACHMENT 2: SCHEMATIC: Boiler process showing ash circuit