



**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	Umfolozi Sugar Mill (Pty) Ltd
CONTACT PERSON	Umfolozi Sugar Mill – Operations System Manager
NAME	Kelvin Gibbs
ADDRESS	Corner of Mill and Club Lane , Riverview, Mtubatuba, 3935
E-MAIL ADDRESS	KGibbs@usm.co.za
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WASTE GENERATING FACILITY OR FACILITIES						
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	Corner of Mill and Club Lane , Riverview, Mtubatuba, 3935					
GPS CO-ORDINATES AT CORNERS OF WASTE GENERATING FACILITY OR FACILITIES <i>(Please note that the co-ordinates are for the pasveer ditch sludge).</i>	LATITUDE			LONGITUDE		
	28°	26'	52.34" S	32°	11'	3.65" E
	28°	26'	54.04" S	32°	11'	5.02" E
	28°	26'	55.48" S	32°	11'	7.07" E
28°	26'	53.51" S	32°	11'	5.86" E	
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Passveer Ditch Sludge					
BENEFICIAL USE/S	<ul style="list-style-type: none"> • Soil conditioner • Nutrient source in sugar cane farming 					

WASTE GENERATING PROCESS		
DETAILED DESCRIPTION OF WASTE GENERATING PROCESS ¹	<p>Please refer to Annexure 1 for the process flow chart for the pasveer ditch sludge waste stream.</p> <p>Waste stream Pasveer ditch sludge is the waste stream relevant to this application for exclusion from the waste stream. It is to be used as a soil conditioner and nutrient source in sugar cane farming.</p> <p>Waste generating process The waste generating process specific to the Pasveer Ditch Sludge is the Effluent Treatment Plant.</p>	
PRODUCTION PROCESS FLOW CHART ATTACHED	YES	NO
WASTE CLASSIFICATION	HAZARDOUS Please refer to Annexure 1 for the process flow chart for the pasveer ditch sludge waste stream.	GENERAL
IF HAZARDOUS LIST THE HAZARDS OF THE WASTE	Type 0 waste. No GHS Hazards.	

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	
<p>GENERAL MANAGEMENT of the Pasveer Ditch - Aerobic (PDA) effluent treatment sludge. The PDA receives the liquid overflow from the anaerobic settling pond (pond 2). The liquid overflow from the anaerobic digestion at pond 2 carries the leached components and significantly reduced (by up to 90%) dissolved organic load from the pond 2 treatment process. the end result is a significantly reduced organic load but not such a reduction in sludge solids, which is mainly activated sludge. The precaution is to</p>	<p>There were no GHS hazards associated with this waste. The Safety Data Sheet needs to be part of the safety induction for this sludge, as with all the sludges being used for soil enhancement. No COD/BOD analyses done but general caution to be exercised with prevention of spills into the environment. Precautions in the management of the activation process to ensure health floc formation to form a health sludge. To maximize the re-use of the clarified liquid water back into the sugar mill</p>	<p>Health, safety and environment: Possible overflows into the surrounds. causing possible human exposure and to road flooding.</p>	Medium	2	4	3	2	18

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ensure that the activated sludge process is managed so that the sludge remains "healthy" and does not present problems and thus present effluent quality problems. These include poor floc formation, bulking and foaming from varying causes, nitrification and denitrification problems. thus rendering it unusable for soil enhancement, and for use of the liquid to cycle back into the mill for re-use. This waste stream is prohibited from being landfilled, hence MUST be redirected off landfill.	system. Sludge analyses need to be conducted regularly and acted upon should the activated sludge process present problems.							
PDA sludge removal on demand	Storage over time and running out of	Health and safety environment:	Low	1	4	2	2	8

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
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	storage space, if demand is low. If process problems occur, backup of pond 1 and 2 overflows to their following processes. May cause down time.	Possible overflows into stormwater or other catchment facilities. sludge dams or in extreme circumstances the nearby Umfolozi River.						
Access to sludge waste storage area	<ul style="list-style-type: none"> Trespassers entering this area illegally risk the possibility of spillages, accidents; drowning in the pond, or getting stuck in the sludge. Removal of the activated sludge in an unmanaged way would result in spillages as the sludge is not easily dewatered. 	Security, environment, health and safety: Should the access not be monitored, the removal of PDA sludge 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 PDA	Dust:	People: driver of vehicles and	Medium	3	4	1	2	21

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
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<p>sludge from the temporary storage dam area to the receiving vehicles.</p>	<p>If the PDA sludge is eventually dried out dust becomes windblown from the process of sludge transfer with pay loader.</p> <p>Spillage:</p> <ul style="list-style-type: none"> The “jelly”-like sludge does not dry out easily, and can spill out of the vehicle trailer/ bin/ container/tanker if loading for transporting to the farmland if not managed correctly. Would also spill onto personnel not authorised to be at the location. 	<p>environment:</p> <p>Risk to health: eyes and respiratory systems in case of dust.</p> <p>If storage is close to the boundary fence there is a risk to the surrounding environment by wind-blown dust.</p> <p>Unauthorised personnel may be at risk during the transfer and hence spillage onto them, onto their clothing.</p> <p>If vehicle is not loaded correctly, there will be spillage of the PDA sludge on site when exiting the mill site.</p> <p>Economics:</p> <p>The cost of unnecessary effort to clean-up spillages on site, and that</p>						

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		which the vehicle may spill on the route even within the mill site.						
Transporting of PDA sludge waste to farm.	<p>Spillage:</p> <ul style="list-style-type: none"> From unmanaged loading of the receiving vehicle trailer/ bin with PDA sludge waste 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 	<p>Health and Safety:</p> <p>Health: People: spills onto clothing when walking on the roads, and splashed on with motor vehicles driving through spilt materials.</p> <p>Safety and compliance to the RTA</p> <p>Environmental and reputation: Spillage onto the road as well as spreading into the surrounding environment by wind and rain. Damage to reputation as USM</p>	Medium	3	6	2	2	30

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		<p>is seen as the owner and source of the sudge.</p> <p>Nuisance to vehicles following the sludge carrier vehicle by any possible splatter from the vehicle pipes and leaking valves onto the road and spraying onto the following vehicles.</p> <p>Pedestrians and cyclists affected by sludge splashing onto them. Causing a physical and health hazard to people and animals in the vicinity.</p> <p>The nature of the spilt sludge on the road may cause accidents by slipping on the roads.</p> <p>Sludge on the roads and walk ways may have run-off into</p>						

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		neighbouring properties and into natural water courses..						
PDA sludge off-loading on designated area on farm.	<p>Spillage: Outside of designated area. Depending on the offloading procedure on the receiving farm, the equipment used to offload may spill residual sludge when travelling to other places to do work.</p>	<p>Environment: Natural water course into the surrounding area affecting flora and water.</p>	Moderate	2	4	2	2	16
Storage at end user facilities.	<ul style="list-style-type: none"> • Run off from rain. • Due to the “jelly” like nature of the sludge it would spread out on the storage area. Difficult to manage. • Unauthorised removal of material 	<ul style="list-style-type: none"> • Environment: • Run-off of any liquid. Possible contamination of the environment. and natural water source is the principle concern. This will affect the water quality by adding organic load which will cause 	Low	2	4	2	2	16

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		<p>problems.</p> <ul style="list-style-type: none"> Unmanaged waste activity by unauthorised removal, resulting in possible human health problems, vehicle getting stuck and environmental damage 						
PDA sludge management during distribution onto the intended farm soil as the fertilizer/soil enhancer.	<p>Health</p> <p>There may be health impacts from working with the possibly dried sludge and soli during the spreading onto the fields Eyes, skin or clothing.</p> <p>Working with the moist sludge would involve splashing and may affect those working with the waste.</p> <p>Environment:</p>	<p>Dust:</p> <p>Health:</p> <p>Correct PPE is required, to keep the dust/mixture from the skin, hands, feet, eyes and lungs. However, the sludge is unlikely to be a health problem as a dried waste, as it is not easy to dewater. However, the mixture must not be contacted by the skin, feet, hands and eyes. Hence</p>	Medium	3	4	2	2	24

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
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	Any run-off of sludge or water from the spreading operations will affect the receiving environment if not managed correctly, especially near to natural water sources.	appropriate PPE and management of the material must be adhered to. 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 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	1	2	2	1	10

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Secondary waste generation.	Environment: Secondary waste generation would involve contamination of other items with the sludge or become contaminated by other spillages. Oils, chemicals.	Environment: <ul style="list-style-type: none"> Should this contaminated sludge escape into the environment through poor management the environment: flora, fauna, soil and natural water sources would be impacted. Other waste materials like oils would be rendered unusable if contaminated with the sludge. 	Low	1	2	1	1	4
Socio-Economic Risks: Positive spin offs at risk should PASVEER DITCH SLUDGE waste beneficiation NOT be possible.								
Employment and utilization of a renewable resource which MUST be redirected off landfill site.	Employment from the local community for the operation as the resource is freely available.	Employment from the local community for the operation as the resource is freely available.	POSITIVE					+
Small business	Some members of		POSITIVE					+

ACTIVITY	RISK DESCRIPTION	ENVIRONMENTAL RECEPTORS	ASSESSMENT OF RISK					SIGNIFICANCE
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development and community based projects. Example growing vegetables and other high value crops utilizing this mix as a fertilizer medium.	the community also can provide opportunities for themselves by growing healthy vegetables to sell. The sludge is not sold.							

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:

$$\text{Significance (S)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

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
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I, Kelvin Gibbs (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 applicant²/ Signature on behalf of the applicant:

Kelvin Gibbs

Name of Applicant:

Operations Systems Manager

Designation

20/09/2023

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 the Pasveer Ditch Sludge
Waste Stream

Effluent Treatment Plant

