



**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)
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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	Umfoloji Sugar Mill (Pty) Ltd
CONTACT PERSON	Umfoloji Sugar Mill – Operations System Manager
NAME	Kelvin Gibbs
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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 pond 1 - sludge).</i>	LATITUDE			LONGITUDE		
	28°	26'	45.72" S	32°	10'	56.64" E
	28°	26'	47.17" S	32°	10'	55.75" E
	28°	26'	48.31" S	32°	10'	56.00" E
	28°	26'	48.56" S	32°	10'	57.53" E
28°	26'	46.42" S	32°	10'	57.63" E	
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Pond 1 – 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 pond 1 sludge waste stream.</p> <p>Waste stream Pond 1 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 Pond 1 Sludge is the Effluent Treatment Plant.</p>	
PRODUCTION PROCESS FLOW CHART ATTACHED	YES Please refer to Annexure 1 for the Process Flow Chart	NO
WASTE CLASSIFICATION	HAZARDOUS	GENERAL
IF HAZARDOUS LIST THE HAZARDS OF THE WASTE	Not Applicable – The waste stream is not classified as hazardous.	

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	
<ul style="list-style-type: none"> GENERAL MANAGEMENT of POND 1 effluent treatment sludge. All litter and unsightly waste not associated with the sugar processing waste must be cleaned up before entering the effluent treatment system. All activities with this sludge must be aligned to the SDS and SHEQ systems. 	<ul style="list-style-type: none"> There are no GHS hazards associated with this waste stream. However, apply reasonable care when handling this waste stream. General caution with spills into the environment. 	Environment: <ul style="list-style-type: none"> Possible overflows into the surrounds. Litter onto the sugar cane fields. 	Medium	2	4	3	2	18
Sludge waste removal on demand.	<ul style="list-style-type: none"> Settled solids in pond 1 not desludged adequately over time and running out of storage space - dam capacity is reduced. Result 	Environment: <ul style="list-style-type: none"> Should the settled solids sludge build up the dam loses storage capacity. Overflow to the surrounding environment, impacting flora, 	High	2	8	2	2	24

	<p>would be that the dam would then start to overflow causing environmental harm to surrounding flora.</p> <ul style="list-style-type: none"> High rainfall events could exacerbate the situation. The reason would be due to high COD/BOD in the sludge due to the spills on the mill platform which is then washed into the effluent system. 	roads and possibly farmlands.						
Access to Pond 1 – sludge.	<p>Safety and Security: Trespassers entering this area illegally risk the possibility of accidents, spillages.</p>	<p>Environment, 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.</p>	Medium	1	6	2	2	10

<p>Process of transferring Pond 1 sludge from the sludge storage area to the receiving vehicles.</p>	<p>Dust: If the sludge is spilt and allowed to dry out; Windblown from the process of sludge transfer with pay loader.</p> <p>Spillage:</p> <ul style="list-style-type: none"> • Onto area outside of bunded area. • Onto personnel not authorised to be at the location. 	<p>People: Driver of vehicles and the Environment.</p> <ul style="list-style-type: none"> • Risk to health: eyes and respiratory systems in case of dust. • Personnel not being aware of their surroundings may be at risk during the transfer of spillage onto them, onto their clothing. <p>Economics:</p> <ul style="list-style-type: none"> • 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. • Vehicle damage from overfilling, resulting in spillages outside of mill site. 	<p>Medium</p>	<p>1</p>	<p>4</p>	<p>1</p>	<p>2</p>	<p>7</p>
<p>Transporting of pond 1 sludge waste to farms</p>	<p>This activity presents the greatest risk for</p>	<p>Health and Safety:</p>	<p>High</p>	<p>3</p>	<p>6</p>	<p>2</p>	<p>2</p>	<p>30</p>

<p>to be used as a nutrient source.</p>	<p>impacting the environment.</p> <p>Spillage:</p> <ul style="list-style-type: none"> • Overfilling receiving vehicle trailer with pond 1 sludge. • Sludge has a very strong odour. <p>Road accidents: Non-compliance to the ROAD TRAFFIC ACT (RTA).</p> <p>Soil and natural water resources contamination: Affects the flora and local animals, domestic and wild as well as residents.</p>	<p>Health of People: spills onto clothing when walking on the roads, and splashed on with motor vehicles driving through spilt materials.</p> <p>Road safety and compliance to the RTA.</p> <p>Environmental:</p> <ul style="list-style-type: none"> • Spillage onto the road as well as spreading into the surrounding environment by wind and rain. • Nuisance to vehicles. • Pedestrians and cyclists affected by sludge splashing onto them. • Sludge on the roads and walk ways. 						
<p>Pond 1 sludge waste off-loading onto the</p>	<p>Spillage:</p>	<p>Environment: Natural water course into the surrounding area</p>	<p>Moderate</p>	<p>3</p>	<p>4</p>	<p>2</p>	<p>2</p>	<p>24</p>

designated area on farm.	<ul style="list-style-type: none"> • Outside of designated area. and possible run-off. • Depending on the offloading procedure on the receiving farm, the equipment used to offload may spill residual mixture when travelling to other places to do work. 	affecting flora and water.						
Storage at the end user facilities.	<ul style="list-style-type: none"> • Run off and possible windblown dust if mixture is allowed to dry. • Unauthorised removal of material. 	Environment: <ul style="list-style-type: none"> • Run-off of any liquid especially rain. • Dust of possibly dried out sludge, 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. 	Low	3	4	2	2	24

		<p>This will affect the water quality</p> <ul style="list-style-type: none"> • Unmanaged waste activity by unauthorised removal, resulting in possible human health problems and environmental damage 						
<p>Pond 1 sludge waste management during distribution onto the intended farms as a fertilizer/soil enhancer.</p>	<p>Health: Dust: There may be health impacts from working with the possibly dried sludge waste during the spreading of fertilizer operations.</p> <p>Environment: Any run-off from the wet sludge spreading operations will affect the receiving environment if not managed correctly, especially near to natural water sources.</p>	<p>Health: Dust:</p> <ul style="list-style-type: none"> • 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, eyes and lungs. • The wet sludge is not be contacted by the skin, feet, hands and eyes and clothes. Hence appropriate PPE and management of the material 	Medium	3	4	2	2	24

		<p>must be adhered to.</p> <p>Environment:</p> <ul style="list-style-type: none"> 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. 						
Repeat application onto the same fields.	<p>Environment:</p> <p>The frequency of application if not adhered to by the qualified agronomist.</p>	<p>Environment:</p> <ul style="list-style-type: none"> The soils viability to propagate the sugar cane crops will be affected if not monitored correctly. May result in toxic build up if the soils and application are not monitored. 	Low	2	2	2	1	10
Secondary waste generation.	<p>Environment:</p> <p>Secondary waste generation would involve having the sludge with litter oily rags and such being spread over the fields.</p>	<p>Environment:</p> <ul style="list-style-type: none"> Should this contaminated sludge be collected for farm soil enhancer, it 	Low	1	2	2	2	6

		spreads the unsightly litter onto farmlands. These then may be dispersed by wind.						
Socio-Economic Risks: Positive spin offs at risk should Pond 1 Sludge waste 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.	Employment from the local community for the operation as the resource is freely available.	POSITIVE					+
<ul style="list-style-type: none"> • Small business development and community based projects. • Example growing vegetables and other high value crops utilizing this sludge as a fertilizer medium. 	<ul style="list-style-type: none"> • Some members of the community also can provide opportunities for themselves by growing healthy vegetables to sell. • The sludge is not sold. 		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:

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

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

I, Kevin 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: Waset Act, 2008 (Act 59 of 2008).


Signature of the applicant²/ Signature on behalf of the applicant:

Kevin 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 Pond 1 Sludge Waste
Stream

Effluent Treatment Plant

