

30 September 2021

KwaZulu-Natal Province: Department of Economic Development, Tourism and Environmental Affairs:

Dear Mr Omar Parak,

As per the request, herewith please find a feedback summary of the status on Sugar Cane Agriculture and associated sugar cane sampling, in relation to the Human Health Risk Assessment.

To date, Apex Environmental has collected three (3) sugar cane samples (which includes one (1) control sample) and six (6) sugar cane grass samples (which includes one (1) control sample) within the vicinity of the UPL Cornubia Warehouse. The maps below (Figures 1 and 2) indicate the sampling locations. Tables 1 and 2 below provide details the sample descriptions (Table 1) and basic results interpretation (Table 2) respectively.

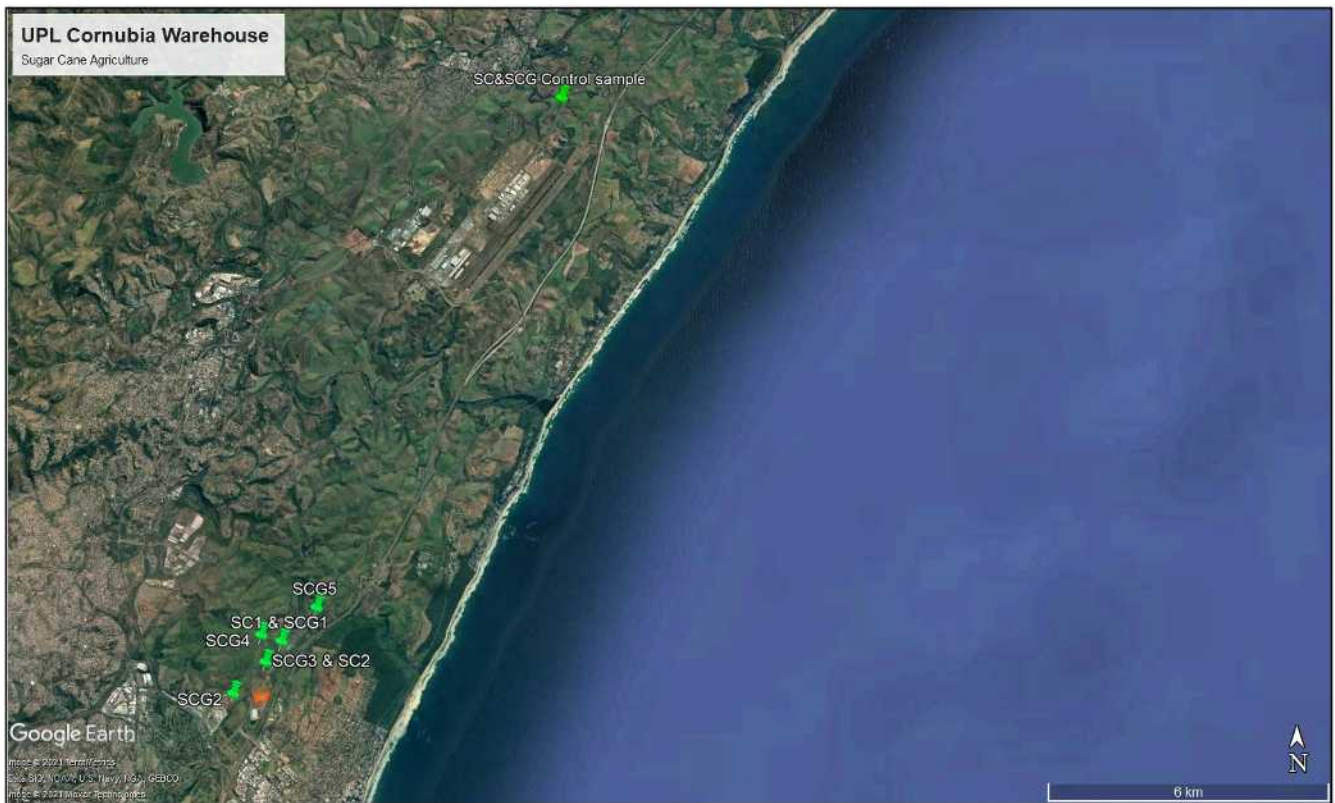


Figure 1: Sugar cane and sugar cane grass sample locations, including control sample.

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MEMBERS

R.W. Randolph
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Department of Labour Approved Inspection Authority
 Approval Number: OH0084-CE034



Figure 2: Sugar cane and sugar cane grass sample locations in relation to the UPL Cornubia Warehouse, excluding control sample location.

Table 1 – Samples Description

Sample No.	Date sampled	Description	Analysis	Laboratory
A19519-SCG1	20/8/2021	Sugar Cane Field: Sugar cane grass	Pesticides	HKAL
A19519-SCG2	20/8/2021	Sugar Cane Field: Sugar cane grass	Pesticides	HKAL
A19519-SCG3	20/8/2021	Sugar Cane Field: Sugar cane grass	Pesticides	HKAL
A19519-SCG4	20/8/2021	Sugar Cane Field: Sugar cane grass	Pesticides	HKAL
A19519-SCG5	20/8/2021	Sugar Cane Field: Sugar cane grass	Pesticides	HKAL
A19519-SC1	20/8/2021	Sugar Cane Field: Sugar Cane	Pesticides	HKAL
A19519-SC2	20/8/2021	Sugar Cane Field: Sugar Cane	Pesticides	HKAL
A19519-SC3	15/9/2021	Sugar Cane (Control Sample) Tongaat	Pesticides	HKAL
A19519-SCG6	15/9/2021	Sugar Cane Grass (Control Sample) Tongaat	Pesticides	HKAL

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Table 2 – Basic Results Interpretation

PESTICIDE RESIDUES ON CROPS VS SA MAXIMUM RESIDUE LEVELS (MRL)					
Compiled by Dr Gerhard Verdoorn					
Pesticide	Crop	Concentration range (mg/kg)	SA MRL mg/kg	Concerns	Comments
2,4-D acid	Sugarcane	0.012 - 0.014	0.5	None, below SA MRL	-
Glyphosate	Sugarcane	0.013 - 0.27	0.5	None, below SA MRL	-
MCPA	Sugarcane	<0.01	0.1	None, below SA MRL	-
Tebuthiuron	Sugarcane	0.032 - 0.048	None	None, no SA MRL set	EU MRL = 0.01 mg/kg
Triclopyr	Sugarcane	0.016 - 0.054	None	None, no SA MRL set	EU MRL = 0.01 mg/kg
Diuron	Sugarcane	0.016	0.1	None, below SA MRL	-
Terbuthylazine	Sugarcane	<0.01	None	None, no SA MRL set	EU MRL = 0.05 mg/kg
Metolachlor	Sugarcane	0.04	0.05	None, below SA MRL	-
Control Samples					
Glyphosate	Sugarcane grass	<0.01	0.5	None, below SA MRL	-
Glyphosate	Sugarcane	0.027			

Discussion:

The information presented above has been submitted to Dr Gerhard Verdoorn for further interpretation. The results and report will thereafter be presented to Professor Mary Gulumian (Principal Toxicologist) for specific Human Health Risk Assessment reporting.

Information has been obtained from the sugarcane farmer, Mr Rob West, regarding the agro-chemical products that are applied to the sugarcane. From the list of compounds provided by Mr West, MCPA, Triclophyr, and Diuron is utilised and has been detected in the samples, therefore indicating the contaminants could already have been present in and on the sugarcane. The control samples were obtained 15 kilometres North-East of the UPL Cornubia Warehouse, outside of the modelled pesticide isopleth (preliminary air dispersion model provided by Airshed). Analysis detected low levels of Glyphosate, which is a compound associated with sugarcane agriculture.

The results detected were observed to be below the applicable South African and European Union’s Maximum Residue Levels (MRLs) for human consumption. Further interpretation and risk characterization will be provided in the final report.

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Finally, more sugarcane samples, in particular cane closer to the contaminated tributary and Ohlanga River will be collected prior to harvesting by Robert Agricultural in November 2021, and subsequent months, depending on the cane harvesting schedule. This verification sampling will be conducted to determine any possible root up-take of contaminants through subsurface and ground water contact. It is imperative that this quality control sampling step occurs before sugarcane is sent to any sugarcane mills for processing.

Your sincerely,
Leon Pretorius



Legal electronic signature of:

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This Advanced Electronic Signature fulfills the requirements of the Electronic Communications and Transactions Act 25 of 2002, Section 13 (1) and (4).

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