

To: Ms Vicki King
Metamorphosis Environmental Consultants

25 August 2021

OPINION – RE: OPENING OF BEACHES

Apex wishes to draw attention to the following considerations (and the report from Dr Gerhard H Verdoorn, Griffon Poison Information Centre, dated August 24th, refers):

1. The uMhlanga Estuary closed on the 21st of July, with MER samples having been taken on the 28th and 29th of July. The estuary mouth had been closed for approximately one week prior to sampling, and the results therefore do not represent the concentrations of chemicals during or directly after an estuary mouth opening event.
2. The estuary again opened between the dates of approximately 15th to 19th August, with MER having taken samples on the 17th and 18th of August (whilst the estuary mouth was open). These laboratory results are only expected and due between 27th to 29th August.
3. At face value, the MER sampling results and Dr Verdoorn's interpretation of the 28th/29th sample results might indicate that the beaches are (or were) safe to be re-opened; however, the results must be viewed within the context that they were taken.
4. The MER sampling results / toxicology report reflect a "snapshot" of the conditions which prevailed at the time of sampling (only). At the time of sampling, the estuary had been closed for approximately one week, after which time the dilution rates and predicted toxic doses would have posed little risk to people using the beach outside of the buffer zone.
5. The estuary water and sediment itself continues to be regarded as **highly toxic**, which has been confirmed by the toxicity test results received on Monday 23 August. These results offer the specialist teams little confidence that the intertidal zones outside of the buffer zone would be safe should the mouth re-open again (and which is predicted to occur this week).

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Department of Labour Approved Inspection Authority
Approval Number: OH0084-CE034

6. Additional factors to consider include the following:

- 6.1 The chemical cocktail in the estuary is complex and may extend to (pose a risk of) additive and synergistic human health effects.
- 6.2 The chemical cocktail may also bypass the sample analysis capabilities of the laboratories (laboratory limitations), which will impede the specialists' interpretations and recommendations.
- 6.3 Public health concerns must extend to the old, infirm, young, and immune compromised, who may react unpredictably to even small concentrations of chemicals.
- 6.4 From situational reports, an odour from the estuary reportedly persists. Although this has not yet been quantified, this potential issue may assist to support any decision-making process.

7. It is therefore recommended that the precautionary principal be applied, which would require that the affected beaches remain closed at least until the results of the latest (15th August) sampling have been received and interpreted. Further, that the embargo on consumption / harvesting of any intertidal sea life should remain in place until further notice.

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