Enquiries: *Jane O'Malley*
Our Ref: *0165 _2020_12_18*
File No.: *BUA_707__04*

PHCC Working Together
Peel-Harvey Catchment Council

18 December 2020

Department of Water and Environmental Regulation
Locked Bag 10, Joondalup DC
JOONDALUP WA 6919
Via email: wastereform@dwer.wa.gov.au

Dear Sir / Madam

Submission to Discussion Paper: Waste not, want not: Valuing waste as a resource

Thank you for the opportunity to provide feedback on the Discussion paper of September 2020 Waste not, want not: Valuing waste as a resource; Proposed legislative framework for waste-derived materials.

The PHCC strongly supports the development of a legislatively-based framework to regulate waste–derived materials (WDM).

By way of background, the PHCC has been involved in the use of WDM for many years, including the use of products derived from the bauxite refining process (e.g. products such as Alkaloam® and Red Sand™). This is reflected in our submissions of 2015 on the End-of-Waste process and our 2019 submission on the Legislative framework for waste-derived materials issues paper.

WRM such as by-products of mineral-refining processes, have the potential to significantly improve environmental outcomes in the Peel-Harvey Catchment and beyond, especially along the coastal plain catchment. The PHCC notes the DWER factsheet "Assessing whether material is waste" states that "material wanted …. for sale to another person is not considered to be waste". The PHCC does not consider products such as Alkaloam® and Red Sand™ to be waste because of their potential commercial viability. The environmental benefits of these products is such that the legislation should encourage and facilitate their use.

The impact of the proposed legislation ought to be reviewed to fully assess its impact on the potential for getting soil amendment products to market and on government in terms of its ability to facilitate this occurring in a timely manner. This is consistent with the recently released "Binjareb Djilba – a Plan for the Protection of the Peel-Harvey Estuary" (DWER, 2020), Action C2 (b) "Improve phosphorus retention in sandy soils used for intensive and broad-scale agriculture through the use of soil amendments…. Changes to regulation may facilitate wider use of soil amendments…". To assist in achieving this outcome, the PHCC recommends that further consultation is undertaken when further details on the legislation is available for review.

58 Sutton Street, Mandurah
Western Australia 6210
T: +61 8 6369 8800
www.peel-harvey.org.au

1. Waste-derived materials to be addressed in general WDM determinations

The PHCC considers that soil amendment products that address water quality issues in the Peel-Harvey catchment including Red Sand™ and Alkaloam®, ought to be addressed in the general WDM determinations.

Red Sand™ - replacing the use of virgin fill material

Sand fill has traditionally come from coastal plain sands and has led to the clearing of Banksia Woodlands. Banksia Woodlands are now a Threatened Ecological Community (TEC) listed under the Environment Protection and Biodiversity Conservation Act. Products such as Red Sand™ have the potential to significantly reduce the use of virgin material and the loss of biodiversity from the Peel-Harvey catchment, with Banksia Woodlands being a prime example. Banksia woodlands and their associated dunes when cleared are commonly bordered by wetland seepage areas also representing sensitive ecological communities. Even where the vegetation has been removed from the dunal system, mining of the sand resource removes the hydrological influence of providing extended seepage water for adjacent wetland communities. The result being a cumulative impact on the water quality and the entire ecosystem, which soil amendment products such as Alkaloam® and Red Sand™ can reduce the need for further clearing, and assist in legacy nutrients.

Alkaloam® - nutrient–retentive soil amendment products derived from bauxite refining process.

Modelling by the (then) Department of Water has shown that the use of soil amendments, such as Alkaloam®, on the Peel-Harvey Catchment's high nutrient-leaching soils would achieve 68% of the water quality improvement target for the Peel-Harvey Estuarine System. This equates to a phosphorus reduction of 48.5 tonnes of phosphorus, given a 71 tonnes reduction is required in total to meet the EPA's Environmental Protection Policy for the Peel-Harvey Coastal Plain Catchment (Kelsey *et al*, 2011)

The impact of Alkaloam® on the retention of phosphorus from the agricultural landscape has been shown in the field to be rapid, effective, cheap and long lasting (Summers *et al* 2020) while other management techniques referred to in Kelsey *et al,* 2011 have been modelled at some equilibrium point which is likely to be far into the future and have not been testing in the field. The time lag for the impact of soil amendment with Alkaloam® has been well stablished to be immediate at the farm scale while other management practices have a range of implementation and physical lags which hamper the effective and timely treatment of eutrophication. These lags defer addressing the historical nature of eutrophication and defer them to future generations.

2. Additional matters to those listed in Section 2.5, which should be considered in determining the priority of materials for developing general WDM determinations

Materials which achieve environmental outcomes that address matters of national environmental significance as determined by the Commonwealth's Environmental Protection and Biodiversity Conservation Act 1999 ought to be included.

As an example by-products from the processing of bauxite such as Red Sand™ has the potential to replace the use of virgin fill material. Sand fill has traditionally come from coastal plain sands and has led to the clearing of Banksia Woodlands. Banksia Woodlands are now a Threatened Ecological Community (TEC) listed under the Environment Protection and Biodiversity Conservation Act.

Natural Bassendean sand is not fit for purpose for urban fill in phosphorus sensitive catchments. The use of fill has increasingly been in low-lying areas as land zoned urban encroaches further south into the Peel-Harvey catchment. Noting that most of the higher land has been developed for urban purposes, increasingly the urban land being developed in the Peel-Harvey catchment is low-lying and thus in need of considerable volumes of fill. Fill derived from Banksia woodland has very poor phosphorus retentive capacity which results in increased losses of phosphorus from urban land use in these low lying areas when replacing broadacre beef grazing. Fill derived from Red Sand™ has sufficient phosphorus retentive capacity to enable the urbanization of previously grazed land to retain phosphorus and reduce the eutrophication of the estuarine system.

Another example is the use of Alkaloam®, as a retentive soil amendment product derived from bauxite refining process to reduce the phosphorus leaching into the Ramsar listed Peel-Yalgorup System. The wetlands in the Peel-Harvey catchment are surrounded by poorly nutrient retentive sands which Alkaloam® can effectively treat to retain phosphorus. The close proximity of the Bassendean sands results in a continuous flux of nutrients from surrounding farmland.

3. Materials which be prioritised to be addressed in general WDM determinations issued upon enactment of the legislative framework for waste-derived materials.

The PHCC considers that soil amendment products such as Red Sand™ and Alkaloam® should be prioritised given their benefit in addressing environmental matter of national significance as identified under the EPBC Act. In order to ensure a smooth transition, the PHCC requests that these products be prioritised to the extent that they can be used as of the date of the legislation being promulgated.

4. Comments about WDM determinations for trials of waste-derived materials.

Both Alkaloam® and Red Sand™ have been the subject of many trials and investigations summarised in Harris and Howard (2010) and Red Sand™ has been the subject of a joint study for use as a fill material with the then Landcorp at a test bed in Mandogalup. The PHCC understands that Alkaloam® has previously been the subject of a Public Environmental Review.

5. WDM production specifications

The content as outlined in the discussion paper for the product specifications is generally considered to be appropriate and acceptable, however the PHCC does have concerns with any time limits on the storage of soil amendments products.

6. Content of WDM declarations

The PHCC expectation is that labels on products is all that would be required when products are sold in small quantities. In larger quantities, codes of practice or guidelines should be in place, which outline the most appropriate use and application of the product. In short the PHCC recommends the removal of unnecessary and burdensome requirements on the end user. The concern is that any disincentives imposed along the supply chain has the potential to limit the use of soil amendment products, will therefore limit the environmental (and economic) benefits that result from their use.

7. Storage of waste-derived materials before use

The PHCC understands that a code of practice has previously been created as part of the Public Environmental Review into the use of Alkaloam® as a soil amendment which the PHCC understands addressed the storage and stockpiling of Alkaloam®.

The PHCC position is that imposing storage time limits for soil amendment products may be counterproductive. Our recommendation is that compliance with a code of practice which requires any nuisances such as dust to be addressed, be put in place rather than a time limitation. A time limitation and the subsequent implications of one, may be counterproductive to the commercialism of the products. This will reduce their use resulting in with the environmental benefits being missed.

The imposition of the landfill levy on soil amendment products is not supported by the PHCC and the PHCC recommend that this not be introduced in the Peel-Harvey Catchment.

References

Harris, S. and Howard, B., 2010. Bauxite residue (Alkaloam) sustainability assessment: technical, community consultation, benefit-cost and risk assessment. *URS Australia Pty Ltd: Perth*.

Kelsey P., Hall J., Kretschemer P. Quinton B. and Shakya D. (2011) *Hydrological and nutrient modelling of the Peel-Harvey Catchment*, Water Science Technical Series WST. 33, Department of Water, February 2011, Perth, Western Australia

Summers, R, Richards, P, Weaver, D & Rowe, D 2020, *'Soil amendment and soil testing as nutrient reduction strategies for the Peel Integrated Water Initiative'*, Resource management technical report 416, Department of Primary Industries and Regional Development, Perth.

Thank you again for the opportunity to comment.

Please do not hesitate to contact me on (08) 6369 8800 or email admin@peel-harvey.org.au if you would like any further information.

Yours sincerely

Jane O'Malley
Chief Executive Officer