Caroline O'Brien
[redacted]

27 April 2018

Dear Sir / Madam,

I write to you with reference to the proposed Catherine Hill Bay – Network Operator Variation.

I would like to express my concern regarding the proposed variation.

As I understand, there is currently no allowance for liquid discharge from the site, and solid discharge is to be removed from site for remediation. The proposed dumping of treated effluent into the local lagoon and creek systems has the potential to be hugely detrimental to the health of the local residents and the environment.

Please consider these facts:

Key potential health risks

Microbial pathogens in wastewater from sewage effluent are the major concern for human health when recycling water. The major groups of pathogens are:

- Bacteria (e.g. *Escherichia coli, Salmonella spp*)
- Viruses (e.g. Enteroviruses, Rotavirus, Hepatitis A)
- Protozoa (e.g. *Giardia Lamblia, Cryptosporidium parvum*)
- Helminths (e.g. *Taenia spp* (Tapeworm), *Ancylostoma spp* (Hookworm))

Key potential environmental risks

Some of the common environmental risks from recycled water include:

- **Salinity**

A chronic problem which needs to be managed in all irrigation systems. Can result in reduced plant growth and plant damage and can impact on freshwater plants and invertebrates in natural ecosystems if discharged directly with little dilution.

- **Sodicity**

Excess sodium in recycled water can cause soil dispersion/swelling, reducing water infiltration on heavier textured soils. This can be difficult to remedy.

- **Sodium**

Can be toxic to some plants if it accumulates in soils from ongoing irrigation.

- **Chloride**

Can be toxic to plants if sprayed directly on leaves, and if it accumulates in soils from ongoing irrigation.

- **Nitrogen**

Mostly of benefit to cultivated plants, but can cause eutrophication (excessive nutrient levels) in land and aquatic ecosystems.

- **Phosphorus**

Mostly of benefit to cultivated plants, but can cause eutrophication (excessive nutrient levels) in land and aquatic ecosystems.

- **Chlorine residuals**

By-products of disinfection processes may be harmful to aquatic or marine ecosystems if discharged directly with little dilution.

- **Hydraulic loading**

Too much water applied to land can result in excess groundwater recharge, water logging and secondary salinity.

- **Boron**

Plant toxicity may arise in some plants in some soils if it accumulates from ongoing irrigation.

- **Surfactants**

Some organic and inorganic surface active agents from detergents can remain in recycled water and be harmful to some aquatic organisms.

Can you please outline the ways in which you propose to address each and every one of these risk factors, and also, the third party checks and balances that are in place to ensure the integrity of these applications.

I read with interest on your web site that "*Rose Group have been involved in numerous first-class developments and have been a leader in sustainability, incorporating eco-friendly principles **in most of** their developments."*

I find it alarming that, in this day and age, incorporating eco-friendly principles IN MOST developments is considered acceptable practice. I would have thought that eco-friendly principles were a requirement in all developments! Clearly, in SOME of their developments they blatantly do NOT incorporate eco-friendly principles – this beggars belief!

Understandably, residents have grave concerns that we are victims of those who choose profit over people and planet.

I look forward to your response regarding the proposed measures that will address all the noted risk factors to ensure the health and well-being of the residents and the environment, and the governing bodies with whom they are compliant.

Regards,

Caroline O'Brien

Caroline O'Brien