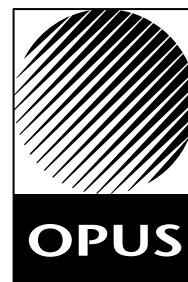


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TO Peter Keller
COPY
FROM Suzanne Porter
DATE 8 May 2006
FILE
SUBJECT **Riversdale Sewage Disposal - Ecological Impact**



Dear Peter,

This is an opinion only and not based on any knowledge of the site apart from what you have sent including the photos.

One of the most important factors potentially affecting the ecology of receiving waters, from the impact of spray irrigation of wastewater, is the land use practices of the affected catchment.

It appears the present land use is predominantly sheep and beef farming with little riparian cover along the gullies or watercourses and minimal vegetative cover.

Without having any information on the background water quality of the existing watercourses or those to which the gullies drain it is difficult to accurately assess the potential impacts.

Excessive nutrient loadings (in particular nitrogen and phosphorous) can cause nuisance growths of periphyton in streams affecting clarity, water and habitat quality.

However, if the existing water courses were of reasonable water quality and did not indicate excessive elevated background levels of nitrogen or phosphate, by implementing appropriate land use controls, likely impacts could be mitigated.

Appropriate land use practices would need to be studied further depending on the quality of the existing watercourses, but from an initial thought this may include mitigation measures such as

- Planting the main gullies receiving the effluent flow (i.e. all main gullies draining the irrigated area)
- Planting parts of the irrigated area if practicable or limiting existing grazing.
- Re- evaluating the existing stocking rates and management
- Riparian planting of existing watercourses.
- Cropping with appropriate nitrogen stripping species

Other mitigation measures could include general guides such as:

- Leaving a reasonable area of non-irrigated land next to all watercourses-i.e. at least 20m wide
- Ensuring spray-drift is not able to enter nearby streams or rivers

The effects of applying Nitrogen at a rate of 150kg nitrogen/ha/yr are likely to be comparable to that of the presently grazed area.

My initial opinion without having any knowledge on the area, soil types, or nature of the water courses, is that spray irrigation at a rate not exceeding 150kg nitrogen /ha/yr will, if managed well, and appropriate mitigation measures put in place have minor effects on the receiving environment.

I trust this may be of some help to you. Please call me if you require further information.

Regards Suzanne