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16 October 2000

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Report to the Environment Committee
from Kathryn Hooper, Resource Quality Officer

Investigation of Selected Closed Landfills in the Wellington Region 1998/99

1. Purpose

To inform the Committee of the findings of an investigation of four Closed Landfills in the Wellington Region over the 1998-99 period.

2. Background

The Regional Plan for Discharges to Land (1999) identifies closed landfills as potentially contaminated sites with a high priority for investigation and action.

There are approximately 80 closed landfill sites in the Wellington Region. Over the last three years, the Wellington Regional Council has investigated nine closed landfills to assess the impacts of discharges of landfill leachate. As part of this on-going monitoring programme, four landfills were investigated from December 1998 to June 1999.

The landfills were selected because:

- They have potential to discharge mobile contaminants;
- Little or no monitoring has been carried out in the past;
- The site history is not well defined;
- There is potential for adverse environmental effects.

The investigation focussed on the environmental effects of leachate discharges to surface water. Issues relate to discharges of landfill gas or land subsidence were not addressed.

The four landfills chosen were:

- Pukerua Bay Landfill
- Moonshine Road No.2 Landfill
- Wingate Landfill

- Rugby League Park Landfill

The sampling programme comprised seven sampling runs, one of which was undertaken in wet weather to assess the effects of rainfall infiltration on leachate discharges. To determine whether the levels of contaminants being discharged to surface water were likely to cause adverse effects in the receiving environment, all results were compared to the Australian and New Zealand Environment and Conservation Council (ANZECC) freshwater guidelines for stock watering and the protection of aquatic ecosystems.

3. Key Findings

3.1 Pukerua Bay Landfill

- Only two sampling runs were possible at this site because there was no flow in the stream on five occasions due to dry summer conditions. It is therefore difficult to draw any firm conclusions from the limited data available for this site.
- Results that were obtained indicate very high levels of iron present in the Taupo Swamp, and suggest an Iron discharge from an unnatural source, possibly the landfill.

3.2 Moonshine Road No. 2 Landfill

- Results from sampling at this location show that any discharge from the landfill is having little impact on water quality in the Moonshine Stream.

3.3 Wingate Landfill

- On average, iron and suspended solids levels exceeded ANZECC guidelines for aquatic ecosystems. Given the dilution of these contaminants in the stormwater system, it is anticipated that the discharge of iron will have little or no adverse effect on the receiving environment.
- The high suspended solids load indicates that settling ponds at the landfill are currently inadequate, and further treatment of the discharge is necessary. This was further demonstrated during the wet weather survey.
- The wet weather discharge from the landfill contained levels of Copper, Iron and Manganese above guidelines for aquatic ecosystems. These contaminants were diluted in the stormwater system, and while levels at the downstream site exceeded stock watering guidelines, this is not considered significant given that the water is not used for stock watering purposes.

3.4 Rugby League Park Landfill

- Results confirm that there is a discharge of leachate from the landfill.

- Allowing for the dilution of the small volume of leachate entering the stormwater system, it is likely that the discharge will have no measurable effect on the waters downstream.

4. **Further Action**

As a result of this study, the following actions will be taken:

- Further investigation will be undertaken at Pukerua Bay Landfill to determine the source of high levels of Iron.
- The owners of Wingate landfill will be encouraged to monitor the leachate discharge to ensure there is no adverse effect down stream. Settling ponds at the landfill should be upgraded to increase the level of treatment they provide.
- No further monitoring needs to be undertaken at Moonshine Road No. 2 Landfill or at Rugby League Park landfill.

5. **Communication**

Copies of this report will be sent to Landfill Owners and relevant Territorial Authorities. Staff will contact the landowners to follow up the recommended actions.

6. **Recommendations**

That the report be received and the contents noted.

Report prepared by:

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