

## 8. BURWOOD LANDFILL SITE MANAGEMENT UPDATE

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The purpose of this report is to update Councillors with current information relating to the site management issues at the Burwood Landfill.

### BACKGROUND

In August 2002 a report (Attachment A) was presented to Council seeking delegated authority for the Solid Waste Manager to negotiate with the two parties that had appealed the recently granted consent to continue operating the landfill at Burwood until May 2005, or until the new Regional Landfill is opened, whichever event came first. Negotiations with the two appellants (Smith Developments Ltd, and Queenspark Residents Association - QRA) are proceeding, and it is now expected that resolution may be able to be reached with both parties. It is in the interests of the wider community that resolution be reached promptly, as the new consent conditions will then apply, which generally dictate a higher standard of management than the old consent. However, notwithstanding the fact that the new consent is not yet operative, Council staff have already moved to put the new operative procedures in place. Resolution of the appeals would nevertheless provide a welcome certainty, and avoid the potential to waste resources on conditions that might subsequently be changed.

During both the consent hearings, and the appeal negotiations certain issues have emerged as being of concern to the community adjacent to the landfill. These are noted below with a discussion on each item.

#### 1. **Odour/Landfill Gas**

Odour is (as currently expressed) the most significant issue of concern to the community. Recent testing for landfill gas, together with other evidence that was presented at the hearings has shown that the principle cause of the odour is landfill gas, not the tipping face, as had been previously thought. While it will remain important to manage the tipping face well, we must also investigate and implement appropriate options to deal with the landfill gas itself.

The Council's landfill consultants have carried out a further gas survey, and will be drilling test holes into the landfill cap over the next few weeks as part of this investigation. From results so far, it seems that the recommended solution will be a combination of:

- Excavation and reinstatement of the capping over 'hot spots' with a combination soil/bark mix that will act as a biofilter, removing the compounds carried with the gas that creates the odour. Landfill gas is around 50% carbon dioxide and 50% methane, which by itself is odourless and harmless to humans when diluted by mixing with air as it escapes. This treatment has already been carried out on two areas of stage one of the landfill.
- Installation of a gas collection system is likely to be appropriate for Stage 2 of the site. There are two options for dealing with the gas once collected. It could be flared to atmosphere, or it could be used to generate electrical power, as is now routinely done with new landfills of any size. Previous advice to the Council on this issue some years ago, was that the latter option was not economic, but it now appears the situation may have changed. One factor in this potential turnaround is that it may be possible to sell greenhouse gas credits, for the verifiable quantities of methane converted to carbon dioxide as it is burnt. Methane, is a 'greenhouse gas' contributing to global warming. The effect of greenhouse gases is measured by converting them to carbon dioxide equivalents. Methane has twenty-one times the effect of carbon dioxide, and as such is one of the worst greenhouse gases.

It will be some time before a best solution can be finally recommended as various site tests, and modelling will be required, but seeking that solution will be treated as high priority. In the meantime following the results of the test holes, it is likely that the Councils consultants will be recommending installation of some of the biofilters over the worst of the 'hotspots'. Also the tipping face has been reduced in size, and odour neutralising spray equipment has been ordered and will be on site very shortly.

Queenspark Residents Association believes that there is a potential health risk from furans, dioxins, and PCBs that they believe will be in the landfill gas. This issue has arisen at other recent landfill consent applications in New Zealand, and the evidence presented that there is no such risk, has been accepted by the Environment Court. In spite of this and to further allay local concerns we have undertaken to have independent consultants arrange a testing and analysis programme, the results of which will be reported to this Committee as soon as they are available. Note that because the gas testing programme involves a considerable amount of work the results are not expected to be available until late 2002/early 2003.

2. ***Proximity of Operations to Housing***

The Council's application for the new consent sought to allow filling over the top of Stage 1F. The new consent as granted, however, does not permit this. In addition the areas that Council is allowed to operate within, have to be filled in a prescribed order, so that the closest 'cell' (Stage D) to the housing is filled last. We have also been further negotiating with Smith Developments on the final shape of Stage D, so as to maximise the distance from the housing. The current proposal has this distance at 675 m – refer Attachment C.

3. ***Leachate***

The new consent has not significantly changed the monitoring programme required, although some new wells will be required. There is, however, a new condition that requires the Council to have in place a remediation plan that can be put into effect should certain trigger levels of key constituents in the wells at the downstream boundary be exceeded. This plan had already been commissioned from the Council's consultants, before the consent was applied for, but the consent has now placed a timeframe on its production. A contingency plan detailing the trigger levels is required within six months of the consent being operative and the full Remediation Options Plan is to be completed within 18 months.

4. ***Daily Cover***

As noted in a recent memorandum to Councillors, a failure to adequately cover the bottom part of the daily lift of refuse has occurred recently. Measures have been taken to correct this (Attachment B). Monitoring staff from Environment Canterbury, have also been involved in site meetings to ensure that Council's site contractor, management, and QRA all have a common understanding of what is required to meet consent conditions with respect to cover.

5. ***Biosolids Preparation Area***

Pending the commencement of application of biosolids onto forests, this material has, for some years been taken to Burwood, mixed with sawdust and spread into the final cover layers. The area where this operation has been carried out is low lying, and ponding around the stockpiles of this material is of concern to QRA. Last year a decision was made to move this area to higher and properly prepared ground on the North side of the landfill much further away from the expanding housing area to the South of the landfill. This was done to reduce perceived potential odour problems, and to provide an area for screening and preparation of other cover materials, made necessary due to reducing space elsewhere as the landfill is filled. However, some stockpiles remain on the Southern side. It is intended to make use of them over the coming few months. Environment Canterbury monitoring staff, have no concerns regarding the ponding.

## **SUMMARY**

The most significant, currently expressed concern of the community that lives in close proximity to the Burwood landfill, is odour. It has recently become apparent that the primary cause of the odour is in fact landfill gas, not the tipping face as had been previously thought. The Council has instructed its consultants to investigate and recommend options for the most effective way of dealing with the landfill gas. In addition landfill management practices have been improved to align with the new consent, which is under appeal. It is anticipated, at this stage that negotiations with the appellants may have a positive outcome, and the Council may not need to proceed to the Environment Court. There will be a financial effect of the new consent conditions, and depending on the solutions recommended to address the landfill gas problem, they may be significant. Estimates will be made for inclusion in the 2003/04 draft Annual Plan, and the 2002/03 five month report.

### **Staff**

**Recommendation:** That staff prepare estimates for inclusion in the 2003/04 draft Annual Plan for dealing with the Burwood Landfill gas issue, and complying with other new consent conditions.

### **Chairman's**

**Recommendation:** That the above recommendation be adopted.