

Technical Assessment of Acquisition of West Hoe Closed Landfill by Auckland Council

No Enduring Liability

1. Legal review of the historical arrangements for the waste deposition has confirmed that council has no enduring responsibility for the site, principally on the basis that payments were made to the original landowner for the landfilling activity lease with the expectation that they then owned the responsibilities arising. In addition, the land has then changed ownership some 5 times since 1979, with disclosure of the landfill being clearly indicated in the site records, and the sale price likely to have reflected its presence.
2. Council holds discharge consent (15274) for the site, due to expire in December 2017. However, as a result of development changes on site and Changda being granted consents for long-term discharges (REG 68097 NRSI 46681, expiring 30 October 2021), 15274 has been superseded and is effectively redundant as it no longer reflects discharge issues and controls. CLCLR is considering the options to surrender its consent, or, allowing it to lapse.
3. Council is not responsible for managing private risk, does not manage any private landfills, and where historic discharge consents extend over private land is actively reducing consent boundaries back to its own landholdings because it cannot give effect to consents over private land. It also does not intend to hold consent over the non-Changda site portion.

Landfill management

4. Historically leachate from the landfill has been discharged into a tributary of the Nukumea Stream. Monitoring confirms that the discharge now meets the Auckland Unitary Plan permitted activity criteria, and in the absence of the proposed development council would have allowed the consent to lapse later this year.
5. Monitoring shows landfill gas is present at the site however discharges have historically met Auckland Unitary Plan permitted activity rules and therefore did not require consent. No specific landfill gas controls have been necessary while the surrounding site remained undeveloped with landfill gas being safely vented through the landfill cover.
6. Changda's development introduces potential landfill gas migration pathways via services trenches through the landfill, and people who could be exposed in nearby residential houses and through activities on or near the landfill. The development will fill up to 11 metres of clay material across Changda's section of the landfill, as well as constructing new systems to collect and treat leachate, including removing methane. Gas migration controls will be required to safely manage any residual landfill gas discharges for buildings bordering the waste footprint and infrastructure on, in or around the landfill site.
7. The effects of loading the landfill wastes with a large mass of clay may result in landfill gas being squeezed out to the edges of the site. While a gas collection trench is proposed to intercept gases that migrate to the edge of the cap and towards the residential development, it is not yet clear how gas controls for services trenches will be implemented.
8. The substantial amount of capping will reduce surface water infiltration into the landfill and reduce leachate volumes; however leachate could become more concentrated. The new control measures designed to manage leachate and landfill gas will require ongoing monitoring and maintenance to ensure that they continue to operate effectively.

9. During construction leachate is being discharged to the trade waste network and requires methane removal. This is unique amongst Auckland's closed landfill sites and the technical risks and operational costs are not yet known. Following construction, assuming a suitable level of performance can be achieved, leachate will be treated in a wetland treatment system prior to discharge to the Nukumea catchment. There are no known constructed wetland systems treating landfill leachate in New Zealand, and the science for removal of landfill contaminants is not well demonstrated. Therefore there is some uncertainty around whether the consent conditions for discharge into the sensitive Nukumea receiving environment will be able to be met.
10. On development completion, Changda seek to vest their landfill land including the new leachate and gas management systems, plus transfer the discharge consent to council. Council would then assume all ongoing responsibility for maintenance of the site plus discharge consent compliance for as long as this is required, which may be some decades.

Costs

11. The costs associated with the management of a closed landfill includes consent management incurring monitoring and regulatory audit costs, maintenance, and potentially CAPEX costs for renewals or replacement control equipment and structures. These costs will potentially continue over decades until the risks and effects are reduced to levels that allow for passive discharge to the environment. In this case there are additional subsurface leachate drains, a wetland system, methane stripping and gas interception equipment. The discharge to trade waste requires a Trade Waste Agreement, equipment requires maintenance, and volumetric discharge costs apply. There are performance risks for the wetland and methane stripping systems, and further risks should any subsurface infrastructure require repair or replacement. Whole of life costs for these landfill control systems are not currently known.
12. Maintenance costs for structures and developments at the surface of landfills require more engineering design, more flexible components and potentially have a shorter life than for a non-landfill site due to instability and aggressive operating environments. Landfill caps generally provide a poor plant growing environment and planting around infrastructure is discouraged. Grass requires ongoing mowing to keep it short to enable monitoring access and reduce fire risks and the various hazards require additional health and safety controls. Any developments and activities on closed landfills require additional approvals to ensure barriers and control systems are maintained and protected.

Risks to council should it accept the landfill and landfill related assets.

13. *Financial Risk* - council will be responsible for the as yet unknown costs of all expenditure associated with operating, inspecting and maintaining the closed landfill and its control systems, as well depreciation and renewals of the assets for some decades. Costs are expected to be much greater than historical management costs due to the increased controls and potential risks of exposure for residents. There are no whole-of-life costings available. No OPEX or CAPEX budgets have been allocated based on the development.
14. *Environmental risk* – Council would be liable for any failure of any controls that result in discharges to the environment, nuisance or property damage. Approximately 1/3 of the total landfill area is in the ownership of another landowner, which means council would not have full control over inputs into the landfill or activities that may impact its performance.

15. *Legal risk* – Council’s current position of having no enduring liability for the site would increase, including potential enforcement action for any consent non-compliance issues. There could also be potential legal risks arising from the owners of the remainder of the landfill seeking council to take on responsibility for their portion, which may require further expenditure for capping, leachate controls and consents. Vesting this site may create a precedent for council to be pressured to take on similar land from other developers.
16. *Technical risk* – leachate treatment is proposed through an as yet unproven wetland system, with a contingency trade waste discharge to should it not perform as expected. The trade waste discharge however requires methane gas pretreatment for which there are unquantified technical maintenance requirements and costs. Gas management proposed for the site is a passive venting system. Poor performance or failure of leachate or gas systems could be difficult and costly to rectify given the infrastructure will be buried.

Can these risks be avoided, mitigated or managed to an appropriate level?

17. Options to mitigate financial, environmental, and technical risks have been considered and addressed where possible by Changda during the consenting process, however, all the remaining risks would be passed on to council. At this point in time there are too many unknowns to determine if these risks could be further mitigated. The base level of risk should council agree to the vesting of the land, far exceeds that which council has historically accepted in managing the site.
18. Council functions under section 31 of the Resource Management Act enable it to ensure effects are being managed. These functions relate to the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land. Council in its regulatory role must therefore ensure that the site is being managed to meet the purposes of the Act.

If council does not accept the land, what other options?

19. The developer could consider the following range of options for future private landowners to manage the effects of the closed landfill:
 - a) Landfill ownership and management could sit with individual property owners; or
 - b) Landfill ownership could sit with individual landowners, with management be undertaken by a body corporate employed by the landowners; or
 - c) Landfill ownership could sit with individual landowners and management undertaken by council through a targeted rates agreement.

Option a) is unlikely to enable coordinated management of the site however option b) is potentially a better mechanism to ensure this can occur. The targeted rates option c) has council managing a private landfill which is contrary to the CLAMP, introduces risk for ensuring compliance, and requires additional resources to undertake management and administration.

Conclusions

20. On the basis of the legal review that has been outlined in this report, council currently has no enduring liability for the West Hoe landfill site, and the land value of the site has always reflected the use of the site as a landfill.
21. Significant financial, environmental, legal, and technical risks associated with the future management of this site exist, which would all be transferred to and owned by council should it agree to vest the site.

22. There are no compelling reasons under the Closed Landfill Management Plan (CLAMP) for council to take on the ownership or management of this private landfill. Land development across Auckland is expected to occur on increasingly marginal land in future, due to the limited supply of land for residential development. Developers may incorrectly assume that council is prepared to accept marginal land as part of a subdivision plan, for example contaminated or unstable land. Therefore it is important that that council consider the full impact of agreeing to own or manage these sites, and avoid setting a precedent with this site which would impose an additional ongoing burden on ratepayers.
23. On the basis of the significant landfill related risks outlined above, Engineering and Technical Services staff recommends that council does not accept ownership of the West Hoe landfill.