

**26 August 2016**

**Review of Conditions of Discharge Permits 6009, 6010, 6011, 7289 and 102259 and  
Change of Conditions of discharge Permits 6009, 6010, 6011 and 7289 for the Levin  
Landfill**

**Schedule of Recommended Conditions**

## Discharge Permit 6010 – discharge landfill leachate onto and into land

- Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[**Note:** Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

### General Conditions – Discharge leachate to ground

- Landfill leachate shall not contaminate adjoining land.
- 2A. Within six months of the commencement date of the decision of the 2015 review of conditions, the consent holder shall cease the discharge of landfill leachate to the Tatana Drain.
- The Permit Holder shall commence the following monitoring programme:

**Table A: Landfill Groundwater Monitoring Locations, Parameters, and Frequency – Deep Aquifer Wells**

Location	Parameters and frequency
C2dd, E1d, E2d and any other future deep monitoring well unless installed for background monitoring purposes.	Quarterly comprehensive for 2 years <u>after May 2010</u> . <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator.
G1d and any other future deep monitoring well installed for background monitoring purposes.	Quarterly comprehensive for 1 year <u>after May 2010</u> . <i>Subsequently</i> Annual comprehensive Quarterly indicator
All monitoring wells where indicator parameters show leachate influence over 3 consecutive sampling rounds.	Annual pesticide / semi VOC

**Table B: Summary of Landfill Groundwater Monitoring Locations, Parameters, and Frequency – Shallow Aquifer Wells**

Location	Parameters and frequency
C1, C2, C2ds, D4 B1, B2, B3s, E1s, E2s, <u>G2s</u> and any other shallow <b>Compliance</b> monitoring well installed in the future.	Six monthly comprehensive for 2 years <u>after May 2010</u> . Quarterly indicator <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator
D5, F1, F2, F3 and any other shallow monitoring well installed to monitor <b>leachate irrigation areas</b> in the future.	Six monthly comprehensive for 2 years <u>after May 2010</u> . Quarterly indicator <i>Conditional</i> Annual comprehensive Quarterly indicator
G1s and any other shallow <b>Background</b> monitoring well installed in the future.	Quarterly comprehensive for 1 year <u>after May 2010</u> .  <i>Subsequently, conditional</i> Quarterly indicator
D1, D2, D3r, D6, and any other <b>Early Detection</b> wells installed in the future.	Quarterly comprehensive for 2 years <u>after May 2010</u> . <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator
All monitoring wells where indicator parameters show leachate influence over 3 consecutive sampling rounds.	Annual pesticide/ semi VOC

Groundwater levels are to be measured and recorded during each sampling procedure.

**Conditions:** A reduction in sampling frequency at any groundwater monitoring point is conditional on:

- A. Completion of the initial monitoring program;
- B. Good consistency of groundwater sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
- C. No decline in groundwater quality as determined from indicator parameter trends over a period of four consecutive sampling rounds;

- D. If a well being monitored on a conditional frequency becomes non-compliant with condition C, the monitoring frequency for that well should return to the initial monitoring frequency until conditions B and C are again being fulfilled.

Sampling frequency for the shallow monitoring wells installed to monitor proposed leachate irrigation areas as defined in Table B may begin on the conditional basis, however the frequency is to revert to the unconditional frequency if leachate irrigation begins and continues from that date as if the monitoring well had been newly installed.

If site management planning indicates any early detection monitoring well is likely to become buried or otherwise destroyed within the following year as a result of normal operations:

- E. This must be communicated to the regional council as soon as practicable;
- F. A replacement well is to be constructed in a position agreed upon with the Environmental Protection Manager at Horizons Regional Council;
- G. The replacement well should be installed in a position suitable to act as an early detection well and be classed as an early detection well; and
- H. The replacement well should be constructed as a nested well (or two separate wells) with screens positioned in both shallow and deep aquifers.

**Table C: Other Water Monitoring Locations, Frequencies and Parameters**

Location	Parameters and frequency
HS1, HS2, HS3	Quarterly comprehensive for 2 years <u>after May 2010.</u> <i>Subsequently, conditional</i> Six monthly comprehensive <del>Quarterly-Monthly</del> indicator <u>between November and April inclusive and every three months for the remainder of the year.</u>
<u>Tatana Drain (TD1 and TD2)</u>	<u>Six monthly comprehensive</u> <u>Quarterly indicator</u>
Leachate Pond Outlet	Quarterly comprehensive for 2 years <u>after May 2010.</u> Six monthly pesticide / semi VOC <i>Subsequently, conditional</i> Six monthly comprehensive Quarterly indicator Annual pesticide / semi VOC

**Conditions:** A reduction in sampling frequency at the Hokie Stream monitoring locations is conditional on:

- I. Completion of the initial two year monitoring program;
- J. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
- K. No decline in water quality between monitoring sites HS1 and HS3 as determined from indicator parameter trends over a period of four consecutive sampling rounds.
- L. If the Hokie Stream monitoring locations are being sampled on a conditional frequency and become non-compliant with condition K, the monitoring frequency for all three monitoring locations should return to the base case intensive monitoring until conditions J and K are again being fulfilled.

**Conditions:** A reduction in sampling frequency at the leachate pond outlet is conditional on:

- M. Completion of the initial 2 year monitoring program;
- N. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results;
- O. No decline in water quality over a period of four consecutive sampling rounds.
- P. If the leachate pond outlet is being sampled on a conditional frequency and becomes non-compliant with condition O, the monitoring frequency should return to the base case intensive monitoring until conditions N and O are again being fulfilled.

If existing analysis records indicate that the water quality at a monitoring location complies with the requirements permitting a shift to a conditional sampling schedule, this may be done immediately. If the site complies, sampling for these parameters can be instigated following the base schedule while sampling for the other parameters can be continued based on the conditional schedule.

**Locations:** (Unless otherwise stated, locations are described on Figure 4, attached to and forming part of this consent).

**Table D: Monitoring Point Locations**

<b>Monitoring group</b>	<b>Monitoring point</b>	<b>Location</b>
Shallow groundwater	B1	
	B2	
	B3s	
	C1	
	C2	
	C2ds	
	D1	
	D2	
	D3r	
	D4	
	D5	Lined landfill area groundwater bore
	D6	Lined landfill area groundwater bore
	E1s	
	E2s	
	F1	Groundwater bore downflow from irrigation area
F2	Groundwater bore downflow from irrigation area	
F3	Groundwater bore downflow from irrigation area	
G1s	South Eastern boundary of the site <del>(proposed location)</del>	
<u>G2s</u>	<u>North of wetland pond near landfill entrance</u>	
Deep groundwater	C2dd	
	E1d	
	E2d	
	G1d	South Eastern boundary of the site <del>(proposed location)</del>
Stream	HS1	Hokio Stream – upstream of landfill (Refer Fig. 2)
	HS2	Hokio Stream – alongside landfill (Refer Fig. 2)
	HS3	Hokio Stream at or about 50 metres downstream of landfill property boundary(Refer Fig. 2)
<u>Tatana Drain</u>	<u>TD1</u>	<u>Top end of drain near Bore C2</u>
	<u>TD2</u>	<u>5m upstream of inlet to road culvert under Hokio Beach Road</u>

Soils	Refer Condition 5	In land disposal area
Leachate		Pond outlet

**Parameters:** The comprehensive and indicator parameter lists referenced in Tables A, B and C are presented in Tables E and F.

**Table E: Comprehensive Analysis List**

Type	Parameters
Characterising	pH, electrical conductivity (EC), alkalinity, total hardness, suspended solids
Oxygen demand	COD, BOD
Nutrients*	NO <sub>3</sub> -N, NH <sub>4</sub> -N, DRP, SO <sub>4</sub>
Metals*	Al, As, Cd, Cr, Cu, Fe, Mg, Mn, Ni, Pb, Zn
Other elements	B, Ca, Cl, K, Na
Organics	Total organic carbon, total phenols, volatile acids
Biological	Faecal coliforms

\* Analyses performed for nutrients and metals are for dissolved rather than total concentrations.

**Table F: Indicator Analysis List**

Type	Parameters
Characterising	pH, EC
Oxygen demand	COD
*Nutrients	NO <sub>3</sub> -N, NH <sub>4</sub> -N
*Metals	Al, Mn, Ni, Pb
Other elements	B, Cl

\* Analyses performed for nutrients and metals are for dissolved rather than total concentrations.

**Schedule:** The sampling regime defined in Tables A to C shall be undertaken based on the following schedule:

- Q. The first samples for all parameters shall be taken in July 2010.
- R. Quarterly monitoring referred to in Tables A and B shall be carried out in January, April, July and October.
- S. Six monthly monitoring referred to in Tables A and B shall be carried out in April and October.

- T. Annual monitoring referred to in Table A shall be carried out in April.
- 4. The Permit Holder shall monitor soils in the irrigated areas. The first soil samples from an irrigation area shall be taken in the first year that leachate is irrigated to land in that area and shall be taken prior to irrigation. Thereafter, samples shall be taken on the schedule provided in Table H.

**Table H: Soil Monitoring Locations, Parameters, and Frequencies**

Location	Parameters and frequency
All soil sampling locations.	Background prior to irrigation Six monthly metals and other elements for 2 years Annual pesticide / semi VOC <i>Subsequently, conditional</i> Annual metals and other elements

**Parameters:** The analysis parameters applied for soil monitoring are presented in Table I:

**Table I: Irrigated Soil Analysis List**

Type	Parameters
Metals	Al, As, Cd, Cr, Co, Hg, Ni, Pb, Zn
Other elements	Cl, B
Organics	Pesticides to screen concentrations Semi-volatile organic compounds

**Schedule:** The sampling regime defined in Table H shall be undertaken based on the following schedule:

- A. Six monthly monitoring referred to in Table H shall be carried out in April and October.
- B. Annual monitoring referred to in Table I shall be carried out in April.

The first samples required by the schedule in Table H shall be taken during April or October immediately following the start of irrigation, whichever comes first.

Soil sample sites shall be chosen in consultation with the Regional Council. Soil samples shall be obtained from two locations within each leachate irrigation area, with the sampling locations separated by at least 50 m. In addition, a soil sample shall be obtained from one location down gradient from each leachate irrigation area, with the sampling point selected at a low point between dunes. Each soil sample shall consist of a continuous soil core obtained from the surface to a depth of 0.2 m.



**Conditions:** A reduction in soil sampling frequency for the sites located within a leachate irrigation area, based on the mean of the analysis results for the two sites, is conditional on:

- C. Completion of the initial two year monitoring program.
  - D. Good consistency of soil sample analysis results.
  - E. No continuous increase in contaminant concentrations in soils as determined from parameter trends for the majority of the metals tested over four consecutive sampling rounds.
  - F. If a leachate area being monitored on a conditional frequency becomes non-compliant with condition E, the monitoring frequency for that area should return to the base case intensive monitoring until conditions D and E are again being fulfilled.
  - G. Pesticides or semi-volatile organic compounds being below the screen detection limits in the leachate collected from the lined landfill during the previous two sampling rounds.
5. The results of monitoring under Conditions 3 and 4 of this Permit shall be reported to the Regional Council by ~~31 August~~ 30 September each year for the duration of this Permit.
  6. The Permit Holder shall ensure the above monitoring programme is undertaken by either the Regional Council, or, an independent organisation approved by the Environmental Protection Manager of the Regional Council.
  7. The Permit Holder shall inform the Neighbourhood Liaison Group of the identity of the organisation carrying out the monitoring.
  8. The Permit Holder shall meet the costs of the monitoring.
  9. The Permit Holder shall report the results of the monitoring to the Neighbourhood Liaison Group by ~~31 August~~ 30 September each year for the duration of the Permit.
  10. ~~If a laboratory is used for water quality analyses which do not have independent accreditation for the parameters measured, then on each sampling occasion duplicate samples from a least one sampling location shall be analysed by a laboratory with independent accreditation for the parameters measured. Continued analysis by the unaccredited laboratory shall be at the discretion of the Regional Council. All analyses on water quality samples shall be carried out by an IANZ accredited laboratory.~~
  11. (a) Should any shallow aquifer groundwater ~~and surface water~~ parameters tested for under Condition 3 of this consent exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for Livestock Watering, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.

- (aa) Should any surface water parameters tested for under Condition 3 of this consent, including the Tatana Drain location, exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for 95 per cent protection levels for Aquatic Ecosystems the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result. Where the change can be attributed to landfill leachate the Consent Holder shall consult with the Regional Council to determine if further investigation or remedial measures are required.
- (b) Should any surface water parameters tested for under Condition 3 of this consent indicate a decline in water quality between monitoring points HS1 and HS3, as referred to in Table E, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.
- (c) In the event that a report is submitted to the Regional Council pursuant to Conditions 11(a) or 11(b) and the Regional Council has determined that further investigation or remediation measures are required, then:
- (i) The Regional Council may require the Permit Holder to develop a mitigation or remediation plan.
  - (ii) In the event that the Regional Council determines that a mitigation or remediation plan is required, the Regional Council shall advise the Permit Holder of this requirement in writing within two months of receiving the Condition 11(a) or 11(b) report.
  - (iii) Within six months of receipt of advice in writing from the Regional Council pursuant to Condition 11(c) (ii), the Permit Holder shall submit a mitigation or remediation plan to the Regional Council for approval.
  - (iv) Any mitigation or remediation plan prepared in accordance with Condition 11(c) shall include a timetable for implementation.
  - (v) Following approval of a mitigation or remediation plan prepared in accordance with Condition 11(c) (iii), if the Regional Council determines that the adverse effects of the landfill activity itself on the shallow groundwater aquifer or surface water will be more than minor, the Regional Council shall require the Permit Holder to implement the plan within the timeframe specified in the timetable for implementation required by Condition 11(c) (iv).

- (d) The Permit Holder shall annually review the data derived from the groundwater monitoring program and evaluate contaminant mass load projections for discharges from the landfill to the Hokio Stream. The contaminant mass load projections shall be based primarily, but not exclusively, on the monitoring data obtained for the “B” and “C” series bores indicated in Table D of this discharge permit. The annual report required under Condition 5 shall include the following information:
  - (i) A summary of the methodology used to calculate the mass load projections.
  - (ii) The calculated mass loads transported in the groundwater and comparable mass loads in the Hokio Stream.
  - (iii) An analysis of the implications of the mass load calculations with respect to ensuring discharges from the landfill would not result in a decline in the water quality in the Hokio Stream under Condition 3.
  
- (e) Should the groundwater parameters tested for under Condition 3 of this consent, and subsequent evaluation and indicative assessment of contaminant mass loads under Condition 11(d) of this consent indicate that contaminants sourced from either the closed or active areas of the Levin Landfill are likely to result in a future decline in the water quality of the Hokio Stream, as defined under Condition 3, then:
  - (i) The Permit Holder shall include in the annual report required by Condition 5 an analysis of the significance of the result.
  - (ii) The Regional Council may at any time require the Permit Holder to undertake further investigations and/or conduct a detailed assessment of mass loads to evaluate the actual likelihood of a future decline in water quality of the Hokio Stream as a result of landfill activities as measured under Condition 3. The Permit Holder shall provide a report to the Environmental Protection Manager at the Regional Council documenting the further investigations undertaken or the methodology, procedure and outcomes of the detailed assessment.
  - (iii) If the work required under Condition 11(e) (ii) discloses an actual likelihood of a future water quality decline of the Hokio Stream as a result of landfill activities, and the Regional Council determines that this decline in water quality would constitute a more than minor effect on the water quality of the Hokio Stream, the Regional Council shall require the Permit Holder to develop a mitigation or remediation plan.

- (iv) For the purposes of quantifying whether the adverse effects of the landfill activity itself on the water quality of the Hokio Stream will be more than minor, any determination made by the Regional Council may be independently peer reviewed, at the request of either the NLG or the Permit Holder, by an appropriately qualified and experienced person. The request for a peer review must be lodged with the Regional Council within a period of one month following the determination by the Regional Council.

The peer reviewer shall prepare a detailed report which analyses the determination of adverse effects made by the Regional Council, and provide clear recommendations as to whether implementation of a mitigation or remediation plan is required for the purposes of adopting the best practicable option to remove or reduce the more than minor adverse effect on the water quality of the Hokio Stream. This report shall be completed within a period of three months of the request for a peer review.

Should a peer review of the determination be undertaken, the Regional Council shall take into account the outcome of the review in again determining whether this decline in the water quality of the Hokio Stream would constitute a more than minor effect on the water quality of that stream.

- (v) In the event that the Environmental Protection Manager at the Regional Council determines that a mitigation or remediation plan is required, the Regional Council shall advise the Permit Holder of this requirement in writing within two months of receiving the annual report.
- (vi) Within six months of receipt of advice in writing from the Regional Council pursuant to Condition 11(e) (v) the Permit Holder shall submit a mitigation or remediation plan to the Regional Council for approval.
- (vii) Any mitigation or remediation plan prepared in accordance with Condition 11(c) or Condition 11(e) (v) shall include a timeframe or threshold for implementation.
- (viii) Following the completion of the mitigation or remediation plan, if the Regional Council determines that the potential adverse effects of the landfill activity itself on the water quality of the Hokio Stream, as monitored under Condition 3, continue to be more than minor, the Regional Council shall require the Permit Holder to implement the plan within the timeframe specified in the timetable for implementation required by Condition 11(c) (vii) or alternatively when the threshold identified is triggered .

[Advice Note: Condition 11 may be subject to a review pursuant to s 128 (1)(a) of the Resource Management Act 1991 (see condition 31) and it is anticipated such a review will occur in the event of disagreement by either the Permit Holder or NLG with any determination of the Regional Council in relation to condition 11 (a) – (e)]

12. Should any parameters tested for under Condition 3 of this consent from the deeper gravel aquifer (bores identified as C2dd, E1, E2, the proposed G1d and any other monitoring bore intersecting the deep gravel aquifer), exceed the requirements of the Ministry of Health's Drinking Water Standards for New Zealand 2000, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the results and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.
13. Sampling of the groundwater wells within a 1.5 km radius down-flow or across-flow from the landfill property boundary is to be carried out by the Permit Holders representative upon receiving a written invitation from the bore owners. The frequency of sampling is to be decided through discussion between the bore owner and the Permit Holder. Initial analyses from individual bores are to be tested for the parameters in the Comprehensive Analysis List in Condition 3. Subsequent testing may be performed based on the Indicator Analysis List in Condition 3. Should analysis of water obtained from any groundwater wells used for human drinking water show concentrations of parameters which exceed the requirements of the Ministry of Health's Drinking Water Standards for New Zealand 2000, or repeated sampling from a specific bore indicates a decrease in water quality, the Permit Holder shall report to the Regional Council and the bore owner as soon as practicable on the significance of the results. Where the exceedance or decreasing water quality can be attributed to landfill leachate, the Permit Holder shall consult with the Regional Council and the bore owner to determine if further investigation or remedial measures are required.
14. Any currently active and future lined landfill area shall be closed and remediated by:
  - a) Compacting refuse to such an extent and consistent with CAE guidelines of 600-800 kg/m<sup>3</sup>, to ensure post closure settlement is minimised as far as practicable; and
  - b) Grading to a final slope of less or equal to 1V:3H (1 in 3) on any face; and
  - c) Ensuring the landfill cap incorporates a layer at least 700 mm thick with a permeability of no greater than  $1 \times 10^{-7}$  m/s, or has a material and layer structure that reduces rainwater infiltration to the waste to an equivalent extent; and
  - d) Establishing and maintaining a grass or tussock vegetation cover on the capped landfill, unless it can be demonstrated to the Regional Council's satisfaction that a different vegetation cover can produce clear benefits through reducing infiltration to the covered waste. Any vegetation cover should be consistent with an ongoing capacity to monitor and maintain the ongoing integrity of the landfill cap.

In-situ refuse density shall be determined through annual calculation based on information derived from topographic surveys of the landfill and borrow areas, and from weighbridge records. The survey shall be carried out within one month of the anniversary of the previous survey.

### **Specific Conditions – discharge leachate to ground from existing landfill**

15. The Permit Holder shall close and remediate the existing unlined landfill by April 2011 by:
- a) Grading to a final slope on the landfill faces and caps of between 1V:3H (1 in 3) and 1V:40H (1 in 40);
  - b) Ensuring the final landfill surface is sloped to promote run-off toward the outside of the landfill footprint and prevent surface water ponding on the landfill cap;
  - c) Ensuring the landfill cap incorporates a layer at least 700 mm thick. All material added to the existing cap to bring the thickness up to 700 mm, or for future cap maintenance purposes, is to have a permeability of no greater than  $1 \times 10^{-7}$  m/s;
  - d) Establishing and maintaining a grass or tussock vegetation cover on the capped landfill consistent with an ongoing ability to monitor and maintain the integrity of the landfill cap. The vegetation is to be managed to exclude tree species that can potentially develop root systems capable of disrupting the landfill cap and thereby enhancing rainwater infiltration;
  - e) Monitoring the landfill cover on an annual basis to identify areas of differential settlement slope stability issues, erosion and changing vegetation patterns, including a topographic survey to ensure Conditions 15(a) to (d) continue to be met; and
  - f) The Permit holder shall submit an annual report to the Regional Council by ~~31 August~~30 September each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 15(a) to (e) above. The annual report shall include a plan of the unlined landfill specifically documenting the shape of the closed landfill and any changes during the previous year. [The annual report can be written in conjunction with the annual report required as part of Condition 14 for Consent Number 6009].

The area of the existing landfill to be remediated is defined as Area A on Figure 1 attached.

16. Within one month following the remediation of the Levin landfill, the Permit Holder shall report in writing to the Regional Council of the Permit Holder's compliance with Conditions 14 and 15 of this permit.

### **Specific Conditions – Discharge leachate to ground from lined landfill**

#### **Environmental Effects**

17. There shall be no disposal of leachate sludge from the pond onto irrigation areas. Leachate sludge shall be disposed of in accordance with Condition 26 of consent number 6009 and Condition 18 of consent number 7289.

- ~~18. The rate of application of leachate irrigated to land shall not exceed 200 kg Nitrogen/hectare per year. The Permit Holder shall ensure that no leachate from the lined landfill is irrigated or otherwise discharged to land.~~
- ~~19. There shall be no ponding or runoff of leachate on or beyond the irrigation areas.~~
- ~~20. Subject to Condition 19 of this permit, application of leachate on to soil shall not exceed 50 millimetres per day. Notwithstanding, the maximum rate of application shall not exceed 5 millimetres per hour.~~
- ~~21. There shall be no discharge of offensive or objectionable odour at or beyond the legal boundary of the Levin Landfill property as shown on Figure 1 resulting from leachate irrigation.~~
- ~~22. Should the quality of leachate being irrigated exceed the STV parameters set out in the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for metals in Irrigation Water the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and in consultation with the Regional Council determine if further investigation or remedial measures are required.~~

## **Process Management**

- ~~23. The daily volume of leachate irrigated to land shall be metered and recorded.~~
- ~~24. The Permit Holder shall make regular and at least weekly, inspections of the irrigation system, including pumps, pipes, irrigators and vegetation to ensure that the system is operating efficiently and that vegetation is in good health.~~
25. The Permit Holder shall have carried out the works described in Condition 14(a) to (d) of this permit to rehabilitate:
- a. Any lined landfill area within four months following the closure of that lined landfill area, if the landfill area is closed before 35 years from the granting of this consent.
  - b. Any lined landfill area before 35 years from the granting of this consent.

[Note: "lined landfill area" is defined as a distinct "cell" or stage of the landfill.]

## **Monitoring and Reporting**

- ~~26. A plan of the leachate irrigation system shall be prepared to the satisfaction of the Regional Council's Environmental Protection Manager nine months prior to placement of refuse on the lined landfill. The plan shall include:~~
- ~~a. A map showing areas to be irrigated;~~
  - ~~b. Design of the recirculation, treatment and irrigation systems;~~
  - ~~c. Contingency measures in case of failures in the irrigation system;~~
  - ~~d. Criteria for installing aerators in the leachate pond;~~

- ~~e. — Assessment of options for recirculating leachate over the lined landfill;~~
- ~~f. — Assessment of groundwater profile beneath the irrigation area and effects leachate irrigation will have on groundwater;~~
- ~~g. — Groundwater and soil monitoring programme, including a map showing sampling locations; and~~
- ~~h. — Any other relevant matter.~~

~~27. — The Permit Holder shall keep a log of:~~

- ~~a. — The dates and times of leachate irrigation;~~
- ~~b. — The total volume of leachate irrigated daily;~~
- ~~c. — The volumes of leachate irrigated to specific areas;~~
- ~~d. — Weather and ground conditions during irrigation;~~
- ~~e. — Observations made during the weekly inspections of the pump, irrigation system and irrigation areas; and~~
- ~~f. — Repairs and maintenance carried out on the irrigation system.~~

~~Copies of this log shall be forwarded to the Regional Council's Environmental Protection Manager on 28 February and 31 August of each year that the irrigation system is operated.~~

28. The Permit Holder shall inspect the landfill for leachate break out, settlement and other adverse environmental effects at least once per month until such time as discharge of refuse to the landfill ceases. Thereafter, the frequency of inspection shall be determined in consultation with the Regional Council.

29. The Permit Holder shall record the date, time, observations and any remedial action as a result of Condition 28. The record shall be made available to the Regional Council on request.

## Review

30. The Regional Council ~~shall~~may initiate a ~~publicly notified~~ review of Conditions 3, 4, 11 (a) – (e), 12, 13, 14, ~~24, 27~~, 28 and 29 of this Permit in October 2015 and April 2020, 2025, 2030 and 2035, ~~unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary~~. The reviews shall be for the purpose of:

- a. Assessing the adequacy of monitoring outlined in Conditions 3 and 4 of this consent; and/or
- b. Assessing the effectiveness of Conditions 11(a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this consent,



in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall allow for the:

- c. Modification of monitoring outlined in Conditions 3 and 4 of this consent;
- d. Deletion or changes to Conditions 11(a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this consent;
- e. Addition of new conditions as necessary ,

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

**[Condition 30 amended as per change of consent conditions decision APP-1995003658.03 dated 29 June 2015]**

- 31. The Regional Council may initiate a publicly notified review of Conditions 11 (a) – (e) of this Permit at any time outside those reviews required by Condition 30. The review shall be carried out pursuant to section 128 (1)(a)(i) of the Resource Management Act 1991 and shall be for the specific purpose of:
  - a. Assessing the need and appropriateness of implementing a mitigation or remediation plan as the best practicable option to remove or reduce any adverse effect on the water quality of the Hokio Stream.

The review of conditions shall allow for the:

- b. Deletion or changes to Conditions 11(a) – (e) of this consent;
- c. Addition of new conditions as necessary,

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall have regard to:

- d. The nature of the discharge and the receiving environment; and
- e. The financial implications for the applicant of including that condition; and
- f. Other alternatives, including a new condition requiring the observance of minimum standards of quality of the receiving environment, having regard to the need to be satisfied that including that condition is the most efficient and effective means of removing or reducing that adverse effect.

## **Discharge Permit 6009 – discharge solid waste to land**

1. This permit does not authorise the disposal of liquid waste to land at the Levin Landfill.

Liquid waste is defined as:

Septic tank waste, grease trap waste, sewage and any material that contains free liquids.

The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:

- i. The “Paint Filter Test”; or
  - ii. Material which may be loaded, transported and deposited at the landfill without the risk of free liquid seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.
2. The Permit Holder shall take all practicable measures to avoid the discharge of waste from within the landfill to surrounding land. To this end, the Permit Holder shall ensure:
  - a. The amount of refuse exposed at any one time is confined in dimension to 800 square metres of tipping face; and
  - b. Exposed refuse is covered at the end of each day that refuse is received at the landfill.
3. If refuse is discharged from within the active landfill areas to land outside the legal boundary of the landfill property, the Permit Holder shall ensure that such waste is cleared and removed to the landfill as soon as practicable.
4. The Permit Holder will monitor the landfill at least once every two weeks for the build up of litter, paper and other deposits outside the active landfilling areas, and remove such material as required.
5. The Permit Holder shall regularly inspect for the presence of vermin, birds and other pests take appropriate measures to control them.
6. The Permit Holder shall regularly inspect the landfill for noxious weeds, and take appropriate measures to control those noxious weeds.

## **Hazardous Material**

7. The Permit Holder shall not allow the disposal of waste of an explosive, flammable, reactive, toxic, corrosive or infectious nature, to an extent that the waste poses a present or future threat to the environment or the health and the safety of people.
8. The Permit Holder shall develop and implement a procedure for the landfill operator, such that potentially hazardous material, as listed in Annex 1 attached to and forming part of this permit, will not be accepted for disposal at the Levin landfill without specific authorization. The Operations Manager of the Horowhenua District Council, or some other designated person, is able at their discretion to accept quantities of such wastes. The waste shall be accompanied by a Hazardous Waste Manifest, as listed in Annex 1, which will form part of the permanent record and shall be reported ~~by~~ the Regional Council by ~~31 August~~30 September each year for the term of this Permit.
9. The Permit Holder shall maintain a secure facility for any small quantities of hazardous waste, pending a decision on treatment, disposal or transfer to another facility.
10. Hazardous waste stored at the facility described in Condition 9 shall be stored in a sealed and banded area to avoid adverse effects from spills.
11. Any hazardous waste accepted for disposal shall be disposed within an adequate volume of mature refuse, in accordance with Centre for Advanced Engineering's Landfill Guidelines (2000).

## **Monitoring and Reporting**

### **Specific Conditions – Discharge Solid Waste to Land at Existing Landfill**

12. No solid waste shall be disposed to the existing landfill, after two years from the commencement of this consent.
13. All new fill should be placed on top of at least 2 metres of existing material in the existing landfill.
14. The Permit Holder shall update the Landfill Management Plan in respect of the operations on the lined landfill to the satisfaction of the Environmental Protection Regulatory Manager at the Regional Council within six months ~~of the completion of the review of the consents of the commencement date of the decision of the 2015 review of conditions of consent.~~ The Landfill Management Plan shall include, but not be limited to:
  - a. The specific conditions contained herein, related to the operation, management and monitoring of the landfill.
  - b. A description of the development and maintenance of the landfill.
  - c. A description of how the consent will be exercised in a manner to ensure compliance with the consent and the conditions thereof and the Resource Management Act 1991.

- d. A description of how the consent will be exercised to minimise adverse effects on the environment.
- e. A description of the hazardous waste acceptance criteria, including the criteria set out.
- f. The emergency procedures to be followed in the event of natural emergencies and hazardous waste spills.
- g. The methods of controlling dust and odour emissions including the criteria for assessing when, and how regularly, roadways and the landfill are dampened by water or otherwise.
- h. Details of measures to avoid nuisance effects on adjacent properties i.e. birds and vermin, as a result of landfill activities.
- i. Operational, intermediate and final capping requirements.
- j. Closure and aftercare.
- k. Procedure to update the management plan, in light of changing circumstances, to continue compliance with Conditions of this Permit.
- l. A screen planting implementation description.
- m. ~~The feasibility of carrying out greenwaste composting operations on top of the closed landfill shall be assessed. Where it is deemed to be feasible, the composting operations shall be incorporated into the Closed Landfill Aftercare Management Plan.~~ An Odour Management Plan.

The Permit holder shall prepare a Closed Landfill Aftercare Management Plan in respect of the closed landfill (Area "A") to the satisfaction of the Environmental Protection Manager at the Regional Council within six months of the completion of the review of the consent conditions. The Closed Landfill Aftercare Management Plan shall include, but not be limited to those aspects that are detailed in Appendix E of the MfE publication entitled 'A guide for the Management of Closing and Closed Landfills in New Zealand (May 2001)'. The Closed Landfill Aftercare Management Plan shall require at the least:

- n. Grading to a final slope on the landfill faces and caps of between 1V:3H (1 in 3) and 1V:40H (1 in 40);
- o. Ensuring the final landfill surface is sloped to promote run-off toward the outside of the landfill footprint and prevent surface water ponding on the landfill cap;
- p. Ensuring the landfill cap incorporates a layer at least 700 mm thick. All material added to the existing cap to bring the thickness up to 700 mm, or for future cap maintenance purposes, is to have a permeability of not greater than  $1 \times 10^{-7}$  m/s.

- q. Establishing and maintaining a grass or tussock vegetation cover on the capped landfill consistent with an ongoing ability to monitor and maintain the integrity of the landfill cap as per Condition 15 (d) of Consent 6010.
- r. Monitoring the landfill cover on an annual basis to identify areas of differential settlement slope stability issues, erosion and changing vegetation patterns, including a topographic survey to ensure Conditions 14(n) to (q) continue to be met;

The Permit holder shall submit an annual report to the Regional Council by ~~31 August~~30 September each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 14(n) to 14(r) above. The annual report shall include a plan of the unlined landfill specifically documenting the shape of the closed landfill and any changes during the previous year related to Condition 14(q) [The annual report can be written in conjunction with the annual report required as part of Condition 15 (f) for Consent Number 6010]

### **Specific Conditions – Discharge of Offal and Dead Animals to Land**

- 15. Offal waste shall be immediately buried in depth of 0.6 metres upon delivery.
- 16. All animals disposed of as diseased animals under the Animal Act 1967 shall be immediately buried to a depth of at least 1 metre.
- 17. Pits for the burial of offal and animals shall be excavated in mature refuse and shall be away from the public tipping area.
- 18. Pits for the burial of offal and animals shall be at least 10 metres from any landfill batter slope.
- 19. Pits for the burial of offal and animals shall not exceed a maximum size of two metres by 15 metres.
- 20. The immediate cover material of all offal and animals shall be a minimum depth of at least 100 millimetres unless these conditions specify otherwise. Pits shall be filled to within one metre of the prior refuse surface level and reinstated with appropriate compaction with previously removed refuse or other suitable material.
- 21. Pits for the burial of offal and animals shall be demarcated as such and shall be fenced off.
- 22. Any other malodorous wastes not already covered specifically by these conditions shall be covered immediately upon disposal.

### **Specific Conditions – Discharge of Biosolids and Sludges to Land**

23. Biosolids, sludges and similar materials which do not contain free liquids may be accepted at the landfill as solid waste. This shall include dewatered municipal wastewater treatment plant solids, dewatered processing plant solids and dewatered agricultural wastes.  
The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:
- i. The “Paint Filter Test”; or
  - ii. Material which may be loaded, transported and deposited at the landfill without the risk of free liquids seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.
24. If not co-disposed of within the landfill, the biosolids, sludges and similar materials shall be applied to the landfill surface in accordance with the 1992 Ministry of Health Guidelines for the “safe use of sewage effluent and sewage sludge on land”.
25. The Permit Holder shall maintain records of:
- a. The type of waste received;
  - b. The volume of waste received;
  - c. Source of waste; and
  - d. The location in which the material was placed.
26. Disposal of site-generated sludge from cess-pits, leachate ponds or other site activities that contain free liquids is acceptable to facilitate site operation, provided this does not adversely affect landfill stability or face operations.

### **Specific Conditions – Discharge Solid Waste to Land at Lined Landfill**

27. Design specifications and a set of construction drawings for the lined landfill shall be forwarded to the Regional Council (Environmental Protection Manager) for certification, to ensure compliance with the conditions of this consent and all related consents, at least three months prior to the intended construction of the lined landfill begins.
28. The Permit Holder shall construct the liner system for all new cells to include the following elements:
- a. A smooth base constructed from insitu materials the level of which is above the winter groundwater level.

- b. A geosynthetic clay liner (GCL) a minimum of 5mm thick, with a coefficient of permeability not exceeding  $3 \times 10^{-11}$  m/s. The Permit Holder shall supply documentation from the manufacturer demonstrating quality control procedures ensuring that 95 % of the GCL meets the coefficient of permeability standard required.
- c. A synthetic flexible membrane (high density polyethylene, HDPE with a minimum thickness of 1.5 mm, or polypropylene, PP with a minimum thickness of 1.0 mm).
- d. A protective layer of sand 100 mm thick on the base overlain by a 300 mm thick gravel drainage layer, and on the sides ~~a protective layer of sand 300 mm thick that will be placed progressively as the landfill rises.~~ slopes a confining layer of gravel 300 mm thick, lain on top of a protective geofabric and geogrid, appropriately designed for the site conditions.
- e. Provision for the collection of leachate from the liner and reticulating to a treatment system outside the landfill area.
- f. An alternative to any of the above as agreed from time to time, in writing, between the Permit Holder and the consent authority.

~~29. Nine months prior to placement of refuse on the lined landfill, the Permit Holder shall present a Management Plan to the Regional Council including the same items as those described in Condition 14 (a) to (m).~~

30. If any ancient human remains or artefacts are discovered during any earthworks activity associated with the construction and maintenance of the landfill, then works shall cease, and the Consent Holder shall immediately inform the Environmental Protection Manager of the Regional Council and relevant iwi. Further work in the vicinity of the find shall be suspended while relevant iwi carry out their procedures for the removal of taonga. The Environmental Protection Manager of the Regional Council will inform the Consent Holder when work can recommence in the vicinity of the find.

31. The Regional Council ~~shall~~may initiate a ~~publicly notified~~ review of Conditions 2, 8, 14 (a) to (m), 28, ~~29~~, 32, 33, and 34 of this permit in October 2015 and April 2020, 2025, 2030 and 2035, ~~unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary.~~ The reviews shall be for the purpose of:

- a. Assessing the adequacy of the management plan outlined in Conditions 14 ~~and 29~~ of this consent; and/or
- b. Assessing the effectiveness of Conditions 2, 8 and 28 of this consent.
- c. Assessing the effectiveness of the NLG outlined in Conditions 32, 33 and 34.

In avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill, the review of conditions shall allow for:

- d. Modification of the management plan outlined in Conditions 14 ~~and 29~~ of this consent;

- e. Deletion or changes to Conditions 2, 8 and 28 of this consent;
- f. Deletion or changes to Conditions 32, 33, and 34; and
- g. Addition of new conditions as necessary.
- h. An alternative to any of the above as agreed from time to time, in writing, between the Permit Holder and the consent authority.

To avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

**[Condition 31 amended as per change of consent conditions decision APP-1995003658.03 dated 29 June 2015]**

**Specific Conditions – Neighbourhood Liaison Group (hereinafter “NLG”)**

~~32. The Permit Holder shall establish a NLG. The following shall be eligible to be members:~~

- ~~a. Representation from Lake Horowhenua Trustees and Ngati Pareraukawa;~~
- ~~b. The owners and occupiers of those properties adjoining the Levin Landfill property described as A through to N on Drawing 2181 attached;~~
- ~~c. Other parties who are invited from time to time as agreed by the Permit Holder and/or the NLG, including but not limited to original submitters; and~~
- ~~d. A representative from each of the Horowhenua District and the Regional Council, being consent authorities.~~

~~The Permit Holder shall re-establish, chair, manage and conduct a Neighbourhood Liaison Group (NLG) in 2016. Representation on the NLG shall be available to all owners and occupiers of the properties adjoining the Levin Landfill property, described as A through to N on Drawing 2181. In addition, the following entities shall each be eligible have one representative on the NLG:~~

- a. The Lake Horowhenua Trust,
- b. Ngati Pareraukawa,
- c. Manawatu-Wanganui Regional Council
- d. Horowhenua District Council
- e. The Permit Holder (if a different entity from HDC)



Technical advisors may be invited to NLG meetings if deemed necessary, and only by agreement from the active members of the NLG.

33. The Permit Holder shall:

- a. Convene one meeting one month after the commencement of the ~~consents~~2015 review of conditions;
- b. Thereafter at intervals of six months for the first 18 months after the ~~date of exercising the consent~~ commencement of the 2015 review of conditions; and
- c. Thereafter at intervals of no more than 12 months unless 80% of the people attending a meeting agree that changes to the intervals are acceptable.

34. The purpose of the NLG is to provide a forum where:

- a. members can raise matters of concern regarding the landfill and its operation for discussion with the Permit Holder,
- b. members can raise any matter the NLG member believes the Permit Holder could address in order to meet the conditions of the consent(s),
- c. the Permit Holder can provide feedback as to any proposed changes and amendments to the consents,
- d. the Permit Holder can provide and discuss recent compliance assessments and monitoring results

To facilitate the above the Permit Holder shall:

- a. Supply notes of each meeting to the Group Members;
- b. Forward an annual report to members ~~and as sent~~ to the Regional Council ~~and the District Council~~;
- c. Forward any other information to the Group Members, in accordance with the conditions of the consents; and
- d. The Permit Holder shall ensure the NLG members are:
  - ~~i. Able to advise the Permit Holder of potential members of the NLG.~~
  - ii. Given the opportunity to inspect the operations on site on the occasion of NLG meetings, and/or on such other occasions as are agreed by the Permit Holder. The Permit Holder shall not unreasonably withhold such agreement. The Permit Holder shall grant the NLG members access to the landfill property, during working hours, subject to relevant health and safety regulations and the Management Plan.

- iii. Consulted by the Permit Holder as a group prior to any review of the resource consents or any change of conditions pursuant to section 127 of the Resource Management Act 1991 (and/or any consequential amendments).
- iv. Provided by the Permit Holder with a copy of all monitoring reports and other documentation relating to the non-commercially sensitive, environmental operation of the landfill, at the same time as such reports are provided to the Regional Council in accordance with the resource consents.
- v. Able to raise with the Permit Holder, as necessary, any matter which the NLG member believes the Permit Holder should address in order to meet the conditions of the consent(s).
- vi. Formally acknowledged and considered by the Permit Holder with respect to NLG member's written suggestions to the Permit Holder on possible improvements to, or concerns about, the landfilling operations.
- ~~vii. Kept informed by the Permit Holder as to whether or not progress is being made towards a regional landfill.~~

### **Charges**

- 35. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[**Note:** Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

## Discharge Permit 6011 – discharge landfill gas, odour and dust to air

1. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[**Note:** Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedures for setting administrative charges are governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

### Environmental Effects

2. The Permit Holder will ensure dust is controlled on access roads and on the landfill, if necessary, by watering or other methods.
3. There shall be no discharge of odour or dust from the landfill that in the opinion of a Regional Council Enforcement Officer is noxious, dangerous, offensive, or objectionable beyond the property boundary. The Permit Holder will also ensure that:
  - a. On-site and off-site Health and Safety Effects of landfill gas being emitted by the old landfill should be quantified by sampling groundwater monitoring wells for evidence of landfill gas when groundwater samples are taken from the wells. As a minimum, the gases tested for are to include methane, carbon dioxide and oxygen; and
  - b. Any building constructed on the landfill site is adequately ventilated.
  - c. From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must place daily cover over the entire operational fill area to a depth of at least 150 millimetres by the end of each operating day. Daily cover material may comprise of sand, soil or mulched woody material and should be applied to ensure effective odour control.
  - d. From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must ensure that intermediate cover is placed over daily cover to close-off a fill area that will not receive additional lifts of waste or final cover for more than three months. The combined depth of cover, including daily cover, over the waste shall be a minimum of 300 millimetres. Raw sand can not be used as intermediate cover. Intermediate cover shall be stabilised within 20 working days of completion.
  - e. The Consent Holder must carry out monthly surface emission testing for all areas of the landfill with final or intermediate cover, and the bio-filter bed. The monitoring of surface emissions shall be undertaken utilizing emission testing methods that have been given prior written certification as to their appropriateness by the Manawatu-Wanganui Regional Council's Regulatory Manager. The monitoring of surface emissions shall not be undertaken during or immediately after heavy rainfall or during strong wind speed conditions, and the meteorological conditions at the time of the monitoring shall be provided in the monitoring report.

[Advice Note: Favourable meteorological conditions for emission testing include those where weather and ground conditions are dry with less than 0.5 mm of rain having fallen for at least two days, and wind speed should be less than 25 km per hour ideally 5 – 10 km/hour.]

- f. Surface emissions of methane, as determined by testing carried out by condition 3(e) shall not exceed the following

100 parts per million (ppm) for final capped areas  
200 ppm for intermediate capped areas  
5,000 ppm for onsite buildings and structures.

An exceedance of the above limits requires remedial action to be undertaken within 24 hours and retesting within 24 hours of remediation being completed. If the second testing results in a continued exceedance at the same location then an action plan shall be developed and implemented to reduce methane concentrations below the specified limits and details provided to the Manawatu-Wanganui Regional Council advised within 48 hours of the retest.

- g. Records of surface emission testing must be included in the Annual Report and provided to Manawatu-Wanganui Regional Council on request.

- h. Within six months of the commencement date of the decision of the 2015 review of conditions, the leachate collection chamber must be vented to a bio-filter. The bio-filter must be designed by a suitably qualified and experienced person.

- i. The Consent Holder must employ an appropriately qualified person to undertake a comprehensive assessment of the bio-filter performance on an annual basis. The assessment shall include, but not be limited to, an evaluation of the media size distribution and composition and effectiveness in removing contaminants.

- j. The Consent Holder shall maintain the biofilter, measure and record the following parameters:

- i. Daily visual inspection of the state of the biofilter bed, particularly for signs of any short-circuiting, clogging of the bed, compaction and weed growth.
- ii. Daily inspection of the inlet gas fan and ductwork and any maintenance;
- iii. Continuous display of differential pressure for the biofilter;
- iv. Weekly recording of pressure across the biofilter bed;
- v. Weekly inspection to check for odour at the biofilter (i.e. assessment of odour intensity in accordance with the most up to date good practice guidance for assessing and managing odour).
- vi. Weekly monitoring and recording of the biofilter media moisture content;
- vii. Monthly monitoring and recording of the pH of the biofilter media;
- viii. Quarterly raking and loosening of the biofilter media, or as otherwise required, to reduce the potential for short-circuiting, clogging of the bed, compaction and weed growth.

- k. The Consent Holder must ensure that the biofilter and bed complies with the following limits at all times:

- i. Pressure drop across the biofilter shall be less than 100 mm water gauge;
- ii. Biofilter media moisture content shall be between 40-60% moisture content;

- iii. The air flow rate shall not exceed 100 cubic metres per hour per square metre of biofilter media;
  - iv. The pH of the filter material shall be between 6 and 8 pH units;
  - v. An even distribution of gas flow through the filter bed; and
  - vi. There shall be no short circuits of untreated air through and filter bed.
- l. If, after 12 months of the commencement date of the 2015 review of conditions, the Manawatu-Wanganui Regional Council determines that odour is causing adverse effects on the environment, the Permit Holder shall investigate and identify the odour source identified in the MWH report titled Continuous Ambient Air Quality Monitoring for Hydrogen Sulphide – Levin Landfill and dated 10 July 2015.
  - m. The Consent Holder shall remediate the odour source identified in condition 3(l) should the source be located on the Levin Landfill property.
  - n. The Consent Holder shall provide a report to Manawatu-Wanganui Regional Council and the Neighbourhood Liaison Group that outlines the remediation actions taken and outcomes within 20 working days of condition 3(m) being completed.
    - c. Within 6 months of the commencement date of the 2015 review of conditions, the Permit Holder shall install a landfill gas collection system and flare on the site. The gas collection and flare shall be maintained and utilised at all times.  
  
[Advice Note: HDC holds Discharge Permit 106798 for discharges from the flare.]
    - d. Within 2 months of the commencement date of the 2015 review of conditions, the Permit Holder shall prepare an Odour Management Plan (OMP) that includes:
      - i. Design specifications for daily, intermediate and final capping
      - ii. Methodology for monthly boundary monitoring
      - iii. Methodology for monthly surface monitoring for methane
      - iv. Methodology for biofilter monitoring
      - v. Odour control practices relating to the leachate pond
      - vi. Odour control practices for the working face of the landfill
  - o. Maintenance and use guidelines for the gas collection system and flare.
- 4. There shall be no deliberate burning of waste or other material at the landfill. If fires occur at the landfill they shall be extinguished as quickly as possible.
  - 5. The Permit Holder shall take all practicable steps to avoid, remedy or mitigate significant adverse effects of the discharge of landfill gases to air.

## Monitoring and Reporting

6. The Permit Holder shall keep a record of any complaints received. The complaints record shall include the following, where possible:
- a. Names and addresses of complainant;
  - b. Nature of complaint;
  - c. Date and time of the complaint and alleged event;
  - d. Weather conditions at the time of the event; and
  - e. Any action taken in response to the complaint.

The record shall be made available to the Regional Council on request.

The Permit Holder shall also keep a record of landfill gas monitoring results including:

- a. Date and time of sampling;
- b. The concentrations of gasses detected.
- c. Weather conditions at the time of sampling.

The monitoring results shall be made available to the Regional Council on a quarterly basis.

6A. The Consent Holder shall nominate a liaison person to manage any air quality complaint received. The name and contact details of the liaison person shall be provided to the Manawatu-Wanganui Regional Council's Regulatory Manager. The Consent Holder shall ensure a liaison person is available at all times to respond to odour or dust complaints.

6B. The Consent Holder shall ensure any complaint received from a member of the general public regarding odour or dust emanating from the landfill site is investigated as soon as practicable and within 24 hours of the complaint being received, or at a time mutually agreeable with the party making a complaint.

6C. The Consent Holder shall notify a Manawatu-Wanganui Regional Council Consents Monitoring Officer and the Midcentral District Health Board's Medical Officer of Health as soon as practicable after becoming aware of any offensive or objectionable odour emanating from the landfill. An explanation as to the cause of the incident and details of any remedial and follow-up actions taken shall also be provided to the Regional Council Consents Monitoring Officer.

6D. The Consent Holder must undertake monthly odour surveys around the boundary of the site, particularly those sections of the boundary that are between the landfill and residential houses, until such time as discharges of refuse to the landfill ceases. Thereafter, the frequency on inspection shall be determined in consultation with the Manawatu-Wanganui Regional Council. The monitoring shall be undertaken using a modified German VDI standard 3940 method as agreed by Horizons Regulatory Manager, or subsequent method.

6E. The Consent Holder must carry out a weekly walk over site inspection of all the landfill surfaces, including the area around the bio-filter and leachate pond. The purpose of the walk over site inspection is to check for odour, cracks in the landfill cap surface and integrity of gas collection or leachate pipework.

6F. The Consent Holder shall maintain a log of all inspections, investigations and actions taken in accordance with all monitoring and odour inspection conditions of this consent. The log shall be made available to the Manawatu-Wanganui Regional Council on request and submit a summary of all results and assessments presented in the Annual Report.

7. The Regional Council ~~shall~~ may initiate a ~~publicly notified~~ review of Conditions 3 and 6 of this permit in October 2015 and April 2020, 2025, 2030 and 2035, ~~unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary.~~ The reviews shall be for the purpose of:

a. Assessing the effectiveness of Conditions 3 and 6 of this consent;

in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill, the review of conditions shall allow for the:

b. Changes to Conditions 3 and 6 of this consent; and

c. Addition of new conditions as necessary;

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

**[Condition 7 amended as per change of consent conditions decision APP-1995003658.03 dated 29 June 2015]**

**Discharge Permit 7289 – discharge liquid waste onto and into land**

1. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[**Note:** Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

2. Liquid wastes shall only be placed at the Levin Landfill as a contingency to normal disposal.
3. For the purposes of this Permit, contingency conditions are circumstances where liquid waste is unable to be treated and disposed of at its regular location, for reasons of either, unforeseen events, breakdown or temporary closure for maintenance purposes.
4. Liquid wastes are defined as the following:
  - a. Septic tank waste ("septage");
  - b. Grease trap waste;
  - c. Sewage; and
  - d. Any material that contains free liquids.

The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:

- i. The "Paint Filter Test"; or
  - ii. Material which may be located, transported and deposited at the landfill without the risk of free liquid seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.
5. The Permit Holder shall notify the Regional Council's ~~Environmental Protection Regulatory~~ Manager ~~and the Neighbourhood Liaison Group~~ as soon as practicably possible after receiving notification of the intention to dispose of waste at the landfill under the terms of this consent, or as soon as practicable following urgent disposal in accordance with Condition 3.

The Permit Holder shall detail the reason for the discharge, volume of discharge and timing of the discharge.

~~Each nominated member of the Neighbourhood Liaison Group shall be notified in writing by post.~~

6. The maximum annual volume of liquid waste discharged shall not exceed 150 cubic metres (150 m<sup>3</sup>) in any calendar year. (Calendar year is defined as being over any 12 month or 365 day period.)



7. Subject to Condition 6, the volume of liquid waste discharge shall not exceed 75 cubic metres (75 m<sup>3</sup>) during any seven day period.
8. Subject to Condition 6 and 7 the maximum daily volume of liquid waste discharged shall not exceed 20 cubic metres (20 m<sup>3</sup>).
9. The liquid material shall be placed in trenches which are no more than 2m wide, 1.5m deep and 5m long which are excavated in compacted refuse which is at least six months old and located within a lined landfill area.
10. Only one trench shall be open at any one time.
11. Trenches shall be at least 10 metres from any landfill batter slope.
12. The open trench shall be open for no longer than two weeks.
13. Trenches shall be filled with liquid wastes to a depth of not less than 1m below the prior refuse surface level and reinstated with appropriate compaction with previously removed refuse and cover.
14. The location of placement and cumulative volume will be identified on a site plan which shall be made available to the Regional Council upon request.
15. The location and placement shall be appropriately signed and fenced.
16. The Permit Holder will ensure odours, vermin and flies are not generated from or do not accumulate in open trenches.
17. The Permit Holder shall maintain records of:
  - a. The type of liquid waste received;
  - b. The volume of liquid waste received;
  - c. The source of liquid waste; and
  - d. The location in the landfill in which the material was placed.
18. In addition to the material that is accepted on the basis set out above, the consent holder may dispose of site-generated sludges that contain free liquids from cess-pits, leachate ponds or other site activities to facilitate site operation, provided this does not adversely affect landfill stability or face operations. The disposal of such materials is not to be included within the quantity restrictions as set out in Conditions 6, 7 and 8 of this permit.
19. The Regional Council ~~shall~~ may initiate a ~~publicly notified~~ review of Conditions 5, 9, 12 and 17 of this permit in October 2015 and April 2020, 2025, 2030 and 2035, ~~unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary~~. The reviews shall be for the purpose of:
  - a. Assessing the adequacy of the monitoring conditions outlined in Conditions 5 and 17; and

- b. Assessing the effectiveness of Conditions 9 and 12 of this consent,  
  
in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall allow for the:

- c. Modification of monitoring outlined in Conditions 5 and 17;
- d. Changes to Conditions 9 and 12 of this consent; and
- e. Addition of new conditions if necessary,  
  
to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

**[Condition 19 amended as per change of consent conditions decision APP-1995003658.03 dated 29 June 2015]**

## **Discharge Permit 102259 – discharge stormwater to land and potentially to groundwater via ground soakage**

1. This Permit shall be for a term of 35 years from the date of commencement of Levin Landfill Consents 6009 – 6011 and 7289.
2. Pursuant to section 125(1) of the Resource Management Act 1991, this Permit shall not lapse within its duration of 35 years.
3. The activities authorised by this Permit shall be restricted to the discharge of stormwater to land via ground soakage originating from the existing fill site or any part of the new lined landfill that has had, or is intended to have, refuse placed beneath or upon it, as shown on Plan C102259 attached to and forming part of this Discharge Permit.
4. All works and structures relating to this Discharge Permit shall be designed and constructed to conform to best engineering practices and shall at all times be maintained to a safe and serviceable standard.
5. The Permit Holder shall ensure that the stormwater system, including all drains and ponds, is kept clear of refuse at all times.
6. The Permit Holder shall ensure the stormwater soakage ponds are inspected regularly and maintained to optimise their performance at all times. This shall include de-sludging or remediating the ponds as required.
7. ~~There shall be no ponding in the stormwater soakage areas 12 hours after the last rain event.~~
8. There shall be no runoff or existing discharge of stormwater beyond the property boundary that has originated on any landfill area or new lined landfill area that has had, or is intended to have, refuse placed on it.

### **Management – Existing Landfill**

9. As far as practically possible, the Permit Holder shall ensure that all stormwater from the existing landfill area is directed to ~~at the~~ centralised soakage areas ~~to the south of the existing fill,~~ as shown on ~~Plan C 102259~~ the latest version of the Stormwater Plan.

### **Management – New Landfill**

10. Where it is practical and economical to do so, the Permit Holder shall ensure that within the operational landfill cell the minimum amount of stormwater shall be allowed to come into contact with refuse. This shall be effected by constructing impermeable barriers, diversion drains or bunds on the side slopes and within the base of the landfill.
11. There shall be no contamination of stormwater with leachate. Leachate includes any stormwater within an operational cell that is not separated from refuse by a barrier as defined in Condition 10.

12. The Permit Holder shall ensure that a suitable stormwater soakage area is available for a given design storm and the area of the operational cell from which the stormwater is collected.
13. Areas designated for stormwater discharge to land and their catchment and reticulation system shall be identified and located on site plans and their dimensions submitted for approval by horizons.mw's Team Leader Compliance prior to their use.

### **Monitoring**

14. The Permit Holder shall monitor groundwater quality in at least one upgradient and one downgradient bore of the existing landfill stormwater soakage area, and at least one upgradient and two downgradient bores of the new landfill area. The location and number of bores is to be determined in consultation with horizons.mw's Team Leader Compliance. Groundwater samples shall be taken quarterly in January, April, July and October for the term of this Discharge Permit, beginning in October 2002, and analysed for the following parameters:
  - PH
  - Conductivity
  - Ammonia-N
  - Nitrate-N
  - Sodium
  - Boron
  - Chloride
  - Iron
15. Monitoring bores required in Condition 14 of this Discharge Permit can be incorporated into the monitoring programme of other Levin Landfill Consents (6009-6011 and 7289), providing the information sought is obtained at the frequency specified and reported as required for this Permit.
16. The results of monitoring under Condition 14 of this permit shall be reported to Horizon Manawatu's Team Leader Compliance by 31 August each year for the duration of this Permit beginning 31 August 2003. The annual report shall be supplemented by the raw water quality analysis data being forwarded to the Regional Council as soon as practically possible following the receipt of laboratory analysis certificates.
17. If a laboratory is used for water quality analyses which does not have independent accreditation for the parameters measured, then on each sampling occasion duplicate samples from at least one sampling location shall be analysed by a laboratory with independent accreditation for the parameters measured. Continued analysis by the unaccredited laboratory shall be at the discretion of horizons.mw.

18. Should any groundwater ~~and surface water~~ parameters tested for under Condition 14 of this consent exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for Livestock Watering, the Permit Holder shall report to horizons.mw's Team Leader Compliance as soon as practicable on the significance of the result, and where the change can be attributed to the landfill operation, consult with horizons.mw's Team Leader Compliance to determine if further investigation or remedial measures are required.
19. The Regional Council ~~shall~~may initiate a ~~publicly notified~~ review of all conditions of this Permit in October 2015 and April 2020, 2025, 2030 and 2035, ~~unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary~~. The reviews shall be for the purpose of:
- i. reviewing the effectiveness of these conditions in avoiding or mitigating any adverse effects on the environment; and/or
  - ii. reviewing the adequacy of the monitoring programme required by this discharge permit.

The review of conditions shall allow for:

- i. the deletion or amendment to any conditions of this permit; and
- ii. the amendment or addition of new conditions as necessary to avoid, remedy or mitigate any adverse effects on the environment

If necessary and appropriate, the review provided for under this condition shall require the Permit Holder to adopt the best practicable options to avoid, remedy or mitigate any significant adverse effects on the environment.

**[Condition 19 amended as per change of consent conditions decision APP-1995003658.03 dated 29 June 2015]**

20. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to horizons.mw for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

**[Note:** Section 36(1)c of the Act provides that horizons.mw may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of horizons.mw's Annual Plan.]