

Minutes  
**Redvale Landfill**  
**Community Liaison Committee Meeting**  
**Held at the Redvale Landfill Office - Monday 17/10/2016 at 6.30pm**

Site Tour 6.30pm

Welcome: Debbie & Nick de Witte, Andrew Neil.

Present: R.Leinwand, B.Earwaker, S.Thompson (Deputy School Principal), B.Gibbs, L.Johnston, M.Drury, K.Storie, R.Croker, A.Vosper, C.Wills, R.Bailey.

Apologies: M Kennedy, N.Donovan, F.McKenzie,

Absent: S.Walker, D.Hardy,

Minutes previous meeting: Circulated

*Minutes be accepted as a true and correct record –  
Seconded –*

Matters arising:

- B.Gibbs reported he could not find the electronic form for complaints in the Community section on the WM website. better link is required.  
**WM to provide a simple link address for easy access.**  
[www.wastemanagement.co.nz/webform/redvale](http://www.wastemanagement.co.nz/webform/redvale)
- New Chairman. **With the resignation of Mike Kunzli a new Chairman has been appointed. The new Chairman is Rob Leinwand existing committee member and resident of Tender Road.**

Correspondence In: nil

Correspondence Out: nil

Operations report:

- Disposal  
Landfill operations continue in 20A and 17/18 at two locations at RL80.  
A road is being constructed south to north to connect the two locations.
- Managed Fill  
The Managed Fill site is available for soils.
- Energy  
Major 60k service has been completed on G10 and is underway for G4.
- Site Development  
Main construction works have commenced in the western property with removal of mudstone and lime rock.

Complaints:

AC data not received. Redvale register attached.

WM will work closely with AC to have their input to the register.

Regulatory Issues: N.Donovan absent.

Current issues:

- Generation noise  
No immediate concerns. The acoustic barrier has made a difference.  
Marshall Day have completed a Noise Monitoring assessment for early morning noise in Richards Rd and Tender Rd. Marshall Day have concluded that the site complies with the new consent conditions. Report attached.

**Action**

**A.Vosper**

General Business:

Nick de Witte – Waste truck movements.

A.Vosper confirmed that the average numbers of waste vehicles per open day was 215.

This information will be reported to the Peer Review Panel as part of the routine reporting.

**A.Vosper**

Nick de Witte – WM's position on subdivision following the case of 55 Tender Rd.

A.Vosper referred it back to Corporate. The company's response attached.

**A.Vosper**

Next meeting date: 28<sup>th</sup> November 2016 - Northridge Country Lodge

2017 scheduled meeting dates: 13<sup>th</sup> February, 15<sup>th</sup> May, 14<sup>th</sup> August and 13<sup>th</sup> November.

Meeting closed: 9.30pm

## Redvale Landfill

12th Aug 2016 -  
10th October



### Complaints Register

Start Date of Incident	End Date of Incident	Time of Incident	Complaint By	Address	Odour - Noise - Litter - Mud -	Complaint detail	Wind Direction	Description and investigation	Authorities response
20/08/2016	20/08/2016	10:40	Lloyd Richardson	255 HB Rd	Odour	Step up performance. Not enjoying WM imposing on property and into lungs	SE	Checked surrounding area. Checked and found that additional odour cannon and spray bars were placed around active area.	
20/09/2016	20/09/2016	7:15	Glennis Munn	118 Kahikatia Flats Rd	Odour	Landfill odour this morning.	still conditions	Supervisor walked property with no odour detected. No odour reported from staff at HB Rd. Odour system working.	AC complaint received. Odour direct to landfill- Still conditions, no odour at landfill or outside found.
20/09/2019	20/09/2016	8:30	Lloyd & Sarah Richardson	255 HB Rd	Odour	Odour at property.	still conditions	Went to property once test was received from AD. 8:55 no odour detected also confirmed by cleaner on site. Very still conditions then slight breeze blowing towards the Lfill. Odour system working.	AC complaint received. Odour in morning - 8:15:00 a.m. - Not attended.
23/09/2016	23/09/2016	am.	Jenny Hutchinson	184 Richards Rd	Odour	Odour on/off all morning then again at 3.30pm	N/NE	3.30pm owner reported odour was very bad. Stayed on site from 3.35 till 4.15pm with no odour detected with wind coming from the Lfill direction.	AC complaint received. Odour direct to landfill - 12:45 - Multiple odours detected over the day, not present on landfill staff attendance.
27/09/2016	27/09/2016	14:30	Jenny Hutchinson	184 Richards Rd	Odour	Odour moderate to strong on and off.	NE	Checked property with no odour detected which owner also agreed with at the time. Owner reported odour was at its strongest after 3.30pm.	AC complaint received. Odour direct to landfill - 16:00 - Visited immediately, but odour had disipated.
30/09/2016	30/09/016	8:24	Lloyd Richardson	255 HB Rd	Odour	Calling environmental agency to have Lfill shut down.	Easterly	Property visited by RB & AD with slight odour detected. Could smell cows in paddock & property septic tank over any rubbish smell. Lloyd verbally abusive. Arranged to have spray bars closer to active area and increase odour concentrate in spraytanks. All spray bars and canon going.	AC complaint received. Odour direct to landfill - 08:24 - Faint odour detected above background rural odours.
30/09/2016	30/09/2016	12:20	Jenny Hutchinson	184 Richards Rd	Odour	Odour blowing into house.	NE	Notified owner that Tee bars will be moved closer to push ramp as odour was only intermittent. Owner confirmed no more odour at 1.48pm.	
30/09/2016								No information supplied to WM at the time of the complaint. Possibly related to one of the two above.	AC complaint received. 30/09/16 Odour in morning - 09:15 - Odour complaint to council.



REDDALE LANDFILL  
BIANNUAL NOISE COMPLIANCE MONITORING

Rp 001 2014412A | 31 October 2016

Project: **REDDALE LANDFILL**

Prepared for: **Waste Management NZ Limited**  
**PO Box 228**  
**Silverdale**  
**Auckland 0944**

Attention: **Rob MacFarlane**

Report No.: **Rp 001 2014412A**

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Draft	00	Draft issued to Client	17 Oct 2016	Mat Cottle	Not reviewed
Final	00	Includes Client comments	31 Oct 2016	Mat Cottle	Curt Robinson

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## PREFACE

Redvale Landfill is required to operate within environmental controls set out in consent conditions. With regard to noise, there are conditions which apply to a number of consented activities on site, some of which use the older average maximum ( $L_{A10}$ ) noise level index, whilst others use the currently favoured equivalent continuous sound level ( $L_{Aeq}$ ) index.

The New Zealand Acoustic Standards NZS 6801 and NZS 6802 have been periodically updated since 1977, with NZS 6801:2008 and NZS 6802:2008 representing the most recent version of each standard. The 2008 versions of these standards now recognise  $L_{Aeq}$  as the preferred noise index rather than the  $L_{A10}$  index used in earlier versions. The  $L_{Aeq}$  index is considered to be more appropriate in describing environmental noise effects. It takes into account all sound generation, including short duration sound occurring for less than 10% of the time, which the  $L_{A10}$  index does not. Also, it has been shown to better correlate to people's reaction to noise and is used by the World Health Organisation to describe effects on human health.

Based on MDA's experience of landfill equipment such as generators and heavy earthmoving machinery operating under near-constant load, the relationship between the  $L_{A10}$  and  $L_{Aeq}$  indices would generally be between 1-2 decibels, which is considered to be an imperceptible difference. On this basis, a 40 dB  $L_{A10}$  noise limit is essentially the same as a 40 dB  $L_{Aeq}$  noise limit with respect to effects.

This compliance report assesses compliance against the consent conditions containing the older  $L_{A10}$  noise index as well as conditions containing the newer  $L_{Aeq}$  index. It is envisaged that as consent conditions are accepted by Waste Management NZ Limited, future compliance assessments will solely use the  $L_{Aeq}$  noise index.

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## 1.0 INTRODUCTION

Marshall Day Acoustics (“MDA”) has carried out environmental monitoring of noise emissions from Redvale Landfill (“Redvale”), located north of Auckland in Dairy Flat.

The monitoring has been carried out as part of Waste Management New Zealand’s (“Waste Management”) environmental monitoring campaign and requirements as set out in Redvale’s Noise Management Plan. Waste Management has requested biannual compliance monitoring.

Redvale is comprised of two distinct operations – daytime landfilling i.e. receipt, placement and compaction of refuse; and 24/7 energy generation using landfill gas generators located in the energy park compound. These operations are distinct from each other in terms of noise emission characteristics. However, both operate concurrently during the daytime and only the energy park operates during the night-time. As such, to accurately capture the noise emission from Redvale over the course of a 24 hour period, two compliance surveys are necessary.

This compliance report details the results of MDA’s two compliance surveys carried out in September 2016.

A glossary of acoustic terminology used in this report is contained in Appendix A.

## 2.0 NOISE PERFORMANCE STANDARDS

Noise emissions from Redvale are subject to environmental noise performance standards contained in consent conditions. There are a number of consented activities on site that have noise conditions attached to them, some of which have been renewed recently although, may not as yet have been accepted by Waste Management. For the purposes of this report, Waste Management has instructed MDA to assess compliance using all relevant consent conditions either currently active or yet to be taken up.

The following sets out the relevant noise performance standards used as the basis to assess compliance.

### 2.1 Currently Active Consent Conditions

#### Landfill Operations

Planning Condition 14 (b) (i) requires that operational noise complies with the following noise criteria when measured at the notional boundary (20 metres) of a dwelling (or the legal boundary where this is closer to the dwelling):

**Table 1: Noise limits for landfill operations**

Monday to Saturday 0700-2000 hours	At all other times
50 dB L <sub>A10</sub>	45 dB L <sub>A10</sub>

The hours of operation of the landfill i.e. the physical receipt, placement and covering over of refuse are 0600-1800 hours Monday to Saturday therefore the period from 0600-0700 hours is required to comply with 45 dB L<sub>A10</sub>.

Noise levels shall be measured and assessed in accordance with New Zealand Standard NZS 6801: 1977 “*Methods of Measuring Noise*” and NZS 6801: 1977 “*Assessment of Noise in the Environment*”.

#### Landfill Gas Generators, Leachate Evaporators and Flare

Current active resource consent RDC.R55567.007 requires compliance with the following noise criteria when measured at the notional boundary (or the legal boundary where this is closer) of a dwelling:



**Table 2: Noise limits for landfill gas generators and flares**

Monday to Saturday 0600-1800 hrs	Sundays & Public Holidays 0600-1800 hrs	At all other times
50 dB $L_{Aeq}$	45 dB $L_{Aeq}$	40 dB $L_{Aeq}$ 70 dB $L_{Amax}$

Noise levels shall be measured and assessed in accordance with New Zealand Standard NZS 6801:2008 “Acoustics – Measurement of Environmental Sound” and NZS 6802:2008 “Acoustics - Environmental Noise”.

## 2.2 Consent Conditions Granted Although Not Yet Accepted

General Conditions for resource consents and permit numbers LAN61338 (NRSI 42575), REG61341 (NRSI 42369), REG61342 (NRSI 42570), REG61343 (NRSI 42572), REG61544 (NRSI 42574)

48. *“Any noise emitted from activities authorised by this consent shall comply with the following noise limits at the notional boundary of any dwelling existing as at the date of granting consent (excluding any houses on land owned by the consent holder):*

Time period	Time period Noise limit
0600 to 0700 hours Monday to Saturday	43 dB $L_{Aeq}$
0700 – 2000 hours Monday to Saturday	50 dB $L_{Aeq}$
At all other times	40 dB $L_{Aeq}$
At all other times	75 dB $L_{Amax}$

49. *Noise levels shall be measured and assessed in accordance with New Zealand Standards NZS 6801:2008 “Acoustics - Measurement of Environmental Sound” and NZS 6802:2008 “Acoustics - Environmental Noise”. Construction noise shall be measured and assessed in accordance with NZS 6803: 1999 “Acoustics - Construction Noise”.*

## 3.0 MEASUREMENTS

### 3.1 General

Measurements were completed at the measurement positions indicated in Appendix B on the 12 and 13 September 2016.

The sound level measurements were carried out using Brüel & Kjaer 2250 sound level meters, which satisfy the requirements for a Type 1 sound level meter according to IEC 651. Measurements were carried out and assessed in accordance with the relevant New Zealand Standards set out in the consent conditions.

The weather during the measurements was fine with a light breeze from the north-east and the conditions were within the allowable parameters for measuring outdoor noise.

### 3.2 Operations and Equipment

The following equipment was operating at Redvale during the surveys. These operations were confirmed with Operational and Technical Services after completion of the surveys.

#### Landfill Activity:

- 1 x Caterpillar D8 bulldozer (6:00am to 6:30am) a second D8 from 6:30am onwards
- 1 x Caterpillar compactor

- Refuse trucks (between 20 to 30 trucks through weighbridge during period of morning survey)

Energy Park Activity:

12/09/15 (10:00 – 11:30pm)

- Generators – 10 Generators running, G3 on standby, G10 shutdown for service, the wall panel (the 4.8m acoustic barrier) behind G10 had been removed
- Blowers – 2 x large blowers running and 3 x small blowers (operating under normal running conditions)
- Flares – 1x flare running
- Leachate Evaporation Unit (LEU) – Running under normal conditions

13/09/15 (5:30 – 7:30am)

- Generators – 10 Generators running, G3 on standby, G10 shutdown for service, the wall panel behind G10 had been removed
- Blowers – 2 x large blowers running and 3 x small blowers (operating under normal running conditions)
- Flares – 1x flare running
- LEU – Running under normal conditions

### 3.3 Results

The measured noise levels are presented in Table 3.

**Table 3: Measured Noise Levels**

Measurement Position <sup>(3)</sup>	Measurement		Measured Level (dB) <sup>(1)</sup>				Noise Source <sup>(2)</sup>
	Start Finish Times	Duration min:sec	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>	
43 Tender Rd	5:44am 7:23am	98:58	43	40	31	59	<u>Cars on Horseshoe Bush Road</u> , birds Note: Site was not audible. Ambient noise exceeded the 40dB L <sub>Aeq</sub> noise limit
73 Tender Rd	5:59am 7:16am	76:59	46	43	35	85	<u>Cars on Horseshoe Bush Road</u> , birds Note: Site was not audible. Ambient noise exceeded the 40dB L <sub>Aeq</sub> noise limit
87 Richards Rd	9:56pm 10:11pm	15:01	42	39	35	59	<u>Cars on Dairy Flat Highway</u> , landfill gas generators, birds, frogs, sheep
34 Richards Rd	10:42pm 10:57pm	15:08	42	40	37	58	<u>Landfill gas generators</u> , birds, cars on Dairy Flat Highway, clicking sound (frogs)

Notes to Table 1:

- (1) An explanation of technical terms is provided in Appendix A
- (2) Controlling noise source is underlined
- (3) Measurement position(s) shown in Appendix B

### 3.4 Assessment of Compliance

#### 3.4.1 Richards Road (Assessed against the 40 dB $L_{Aeq}$ night-time noise limit)

For the measurement at 87 Richards Road (taken 20m from the dwelling), the controlling noise source was observed to be traffic on Dairy Flat Highway. All other noise sources were considered to be secondary e.g. from Redvale, or intermittent e.g. birds and sheep. During periods of little traffic, sound from Redvale was audible and considered to be equivalent to the background noise level, resulting in an observed level of 35dB  $L_{Aeq}$  from the site.

For the measurement at 34 Richards Road (the measurement position was on the driveway of 44 Richards Road adjacent to the boundary of this property), the controlling noise source was observed to be the landfill gas generators at Redvale. Traffic on Dairy Flat Highway resulted in intermittent noise levels up to 10 decibels higher than Redvale's contribution, albeit only for the duration of each vehicle passing the measurement position. For the majority of the measurement interval, sound from Redvale was audible and varied between 38-40 decibels. As such, sound from Redvale was considered to be approximately equivalent to 39dB  $L_{Aeq}$  when averaged over the measurement interval.

Based on the above, sound from Redvale's energy park operation was generally equivalent to, or slightly above, the night-time background noise level. When assessed against the 40dB  $L_{Aeq}$  noise limit contained in RDC.R55567.007, the site was considered to be operating in compliance during the period of the compliance survey.

#### 3.4.2 Tender Road (Assessed against the 45 dB $L_{A10}$ and 43 dB $L_{Aeq}$ noise limits)

At both measurement locations on properties in Tender Road, sound from Redvale's early morning landfill activities i.e. warm up of earthmoving machinery, removal of overnight temporary earth cover and truck movements, was inaudible. In addition, sound from Redvale's energy park was also inaudible at both locations.

MDA has confirmed with Operational and Technical Services that the site was operating normally, in cell 20A (refer to Appendix B for approximate location of cell 20A). Because the site was inaudible, it is concluded that Redvale was operating compliantly with Condition 14 (b) (i) and RDC.R55567.007 during the period of the compliance survey.

## 4.0 SUMMARY

Marshall Day Acoustics has carried out a biannual noise compliance survey of Redvale's operational activities, including landfill and energy park operations.

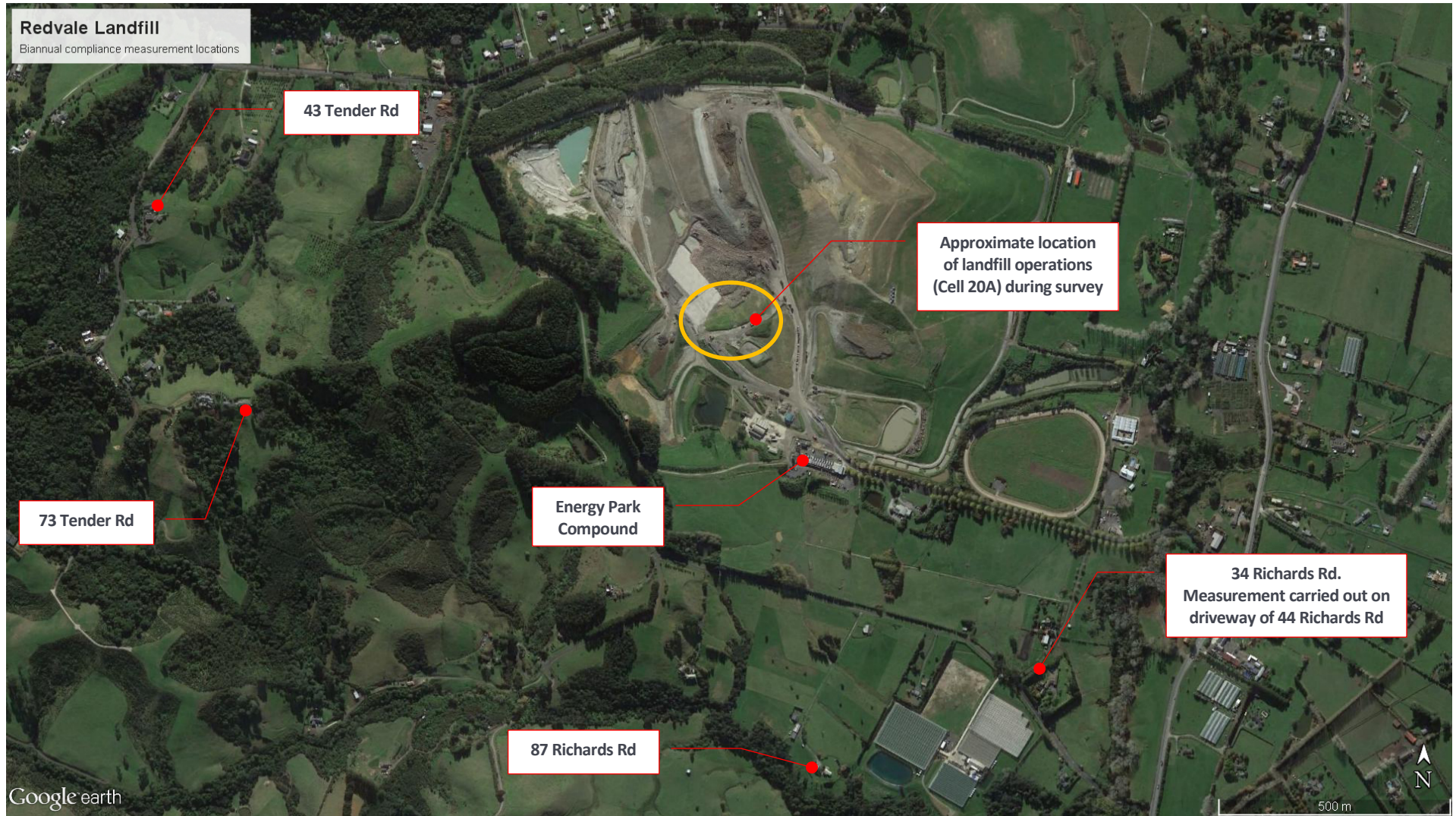
Compliance measurements were carried out in accordance with the relevant New Zealand Acoustic Standards stipulated in consent conditions.

Based on the measurement results, Redvale was considered to be operating within the noise limits set out in consent conditions during the period of the compliance survey.

## APPENDIX A GLOSSARY OF TERMINOLOGY

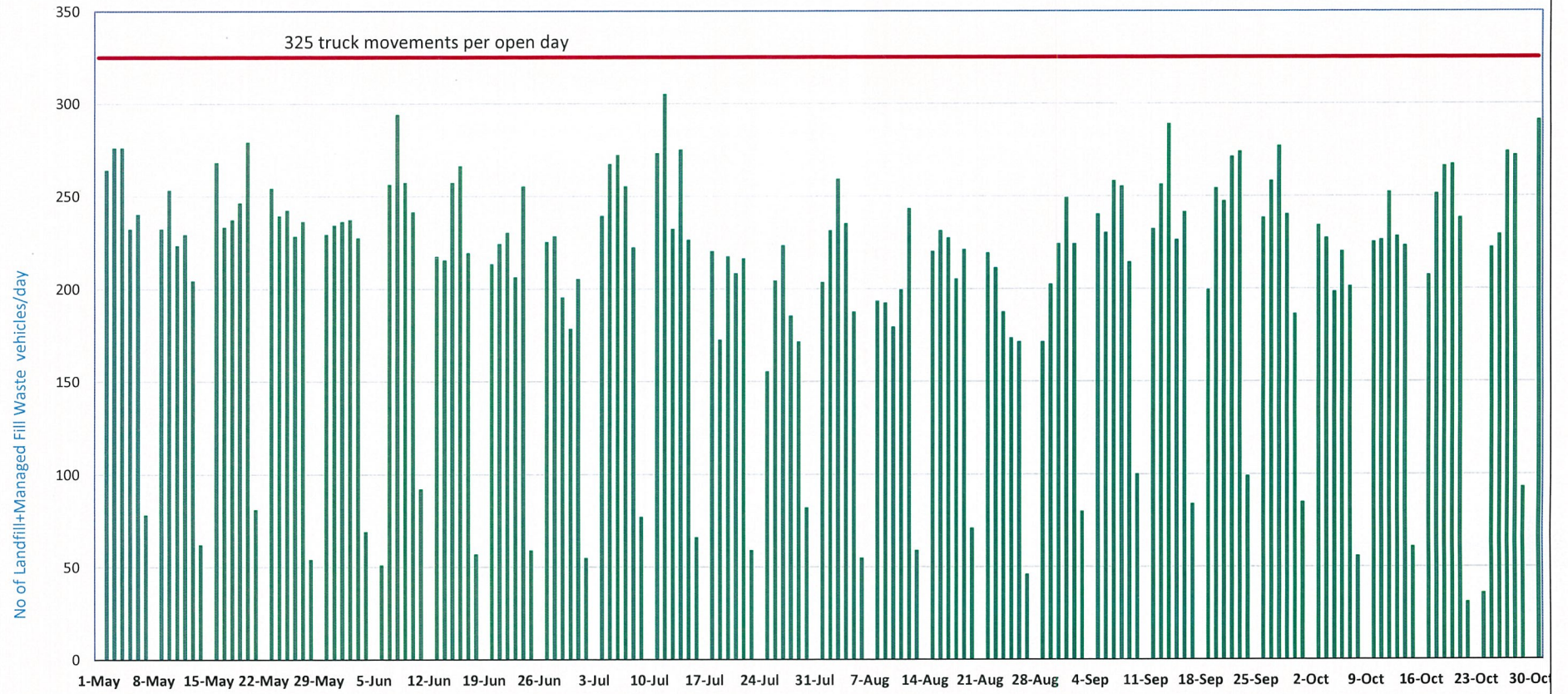
<b>Ambient</b>	The ambient sound level is the sound level measured in the absence of the intrusive sound or the sound requiring control. Ambient sound levels are frequently measured to determine the situation prior to the addition of a new sound source.
<b>dB</b>	Decibel. The unit of sound level.  Expressed as a logarithmic ratio of sound pressure P relative to a reference pressure of $P_r=20 \mu\text{Pa}$ i.e. $\text{dB} = 20 \times \log(P/P_r)$
<b>dBA</b>	The unit of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
<b><math>L_{\text{Aeq}}(t)</math></b>	The equivalent continuous (time-averaged) A-weighted sound level. This is commonly referred to as the average sound level.  The suffix "t" represents the time period to which the sound level relates, e.g. (8 h) would represent a period of 8 hours, (15 min) would represent a period of 15 minutes and (2200-0700) would represent a measurement time between 10 pm and 7 am.
<b><math>L_{\text{A10}}(t)</math></b>	The A-weighted sound level equalled or exceeded for 10% of the measurement period. This is commonly referred to as the average maximum sound level.
<b><math>L_{\text{A90}}(t)</math></b>	The A-weighted sound level equalled or exceeded for 90% of the measurement period. This is commonly referred to as the background sound level.
<b><math>L_{\text{Amax}}</math></b>	The A-weighted maximum sound level. The highest sound level which occurs during the measurement period.
<b>NZS6801:1977</b>	New Zealand Standard NZS 6801:1977 <i>"Methods of Measuring Noise"</i>
<b>NZS 6802:1977</b>	New Zealand Standard NZS 6802:1977 <i>"Assessment of Noise in the Environment"</i>
<b>NZS 6801:2008</b>	New Zealand Standard NZS 6801:2008 <i>"Acoustics – Measurement of Environmental Sound"</i>
<b>NZS 6802:2008</b>	New Zealand Standard NZS 6802:2008 <i>"Acoustics - Environmental Noise"</i>
<b>NZS 6803:1999</b>	New Zealand Standard NZS 6803: 1999 <i>"Acoustics - Construction Noise"</i>

APPENDIX B COMPLIANCE MEASUREMENT LOCATIONS



Source: Google Earth Pro

### Redvale Landfill and Managed Fill inbound waste vehicle movement -2016



## WM Response

WMNZ continues to be concerned regarding reverse sensitivity.

Redvale Landfill is recognised under the Unitary Plan as a significant infrastructure. This is supported by high level objectives and policies of the Unitary Plan which set out to protect the region's infrastructure from reverse sensitivity.

As we are part of the regions significant infrastructure we would expect to be consulted before an application is lodged, and notified by council of every application and we would make a submission.

Subdivisions to the western side of Dairy Flat Highway around the landfill are likely to be non-complying subdivisions as the area is covered as Mixed Rural with minimum lot sizes of 50ha minimum average size and 40ha minimum.

East of Dairy Flat Highway is zoned Future Urban and the make-up of the area and rules related to it have yet to be formulated. WMNZ would seek involvement in the development of the Structure Plan for the area to ensure our presence is taken into account.

Our submissions would oppose the subdivision, unless we can reach an agreement on conditions that will protect our asset from reverse sensitivity effects. e.g. easements and covenants. We would consider supporting subdivision application if the necessary easements and covenants are entered into.

If council decision approved a subdivision that we have opposed, it is likely that we would appeal.