

Carey's Gully Southern Landfill

Annual Resource Consents Report 2024/2025



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Control Sheet

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Executive Summary

This report has been prepared on behalf of the Wellington City Council (WCC) for compliance with the following resource consents:

WGN070230 [35862]

This discharge permit allows WCC to discharge dewatered human effluent ('sludge') contaminants to land at the Carey's Gully Southern Landfill. The landfill is located in Brooklyn, Wellington at map references NZTM 1746265.5423785.

WGN070230 [34284]

This discharge permit allows WCC to discharge contaminants to air, namely odour, from the biofilter, centrate treatment plant and other structures and operations at Carey's Gully Landfill Sludge Treatment Facility. The landfill is located in Brooklyn, Wellington at map references NZTM 1746265.5423785.

WGN070230 [26015]

This discharge permit allows WCC to discharge contaminants to air, namely odour, from the disposal of dewatered human effluent ('sludge') contaminants to land at the Southern Landfill. The landfill is located in Brooklyn, Wellington at map references NZTM 1746265.5423785.

The report will cover the period from 1 July 2024 to 30 June 2025.

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Resource Consent

WGN070230 [35862]

Dewatered human effluent ('sludge') discharge to land is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN070230 [26013]. In general, the consent allows the discharge of up to 200 wet tonnes per day of sludge to the Southern Landfill with a weekly average of 20% dry solids or greater.

The following outlines the conditions of this resource consent required for this report.

WGN070230 [34284]

In addition to the above resource consent, the discharge of contaminants to air, namely odour, from the biofilter, centrate treatment plant and other structures and operations at Carey's Gully Landfill Sludge Treatment Facility is governed by resource consent under the Greater Wellington Regional Council consent file number WGN070230 [34284]. This resource consent replaced WGN070230 [26014] on 29 September 2016.

The following will also outline the conditions of this resource consent required for this report.

WGN070230 [26015]

The discharge of contaminants to air, namely odour, from the disposal of dewatered human effluent ('sludge') contaminants to land at the Southern Landfill is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN070230 [26015].

The resource consent does not specify any annual reporting requirements.

WGN070230 [35862]

Condition (4)

The permit holder shall ensure that the sludge disposed to landfill is no less than 20% dry solids content by volume basis, based on a weekly average measurement of a minimum of 5 grab samples per week from different skip bins prior to their disposal at the landfill.

Note: It is therefore possible to dispose of sludge which is at times less than 20% dry solids (but no less than 15% dry solids) provided the overall weekly average is greater than 20%.

Figure 1 below is the graph of the weekly average % dry solids of dewatered sludge disposed to Southern Landfill. It accounts for the dewatered sludge produced in both Carey’s Gully Sludge Dewatering Plant (SDP) from Moa Point WWTP and Western WWTP.

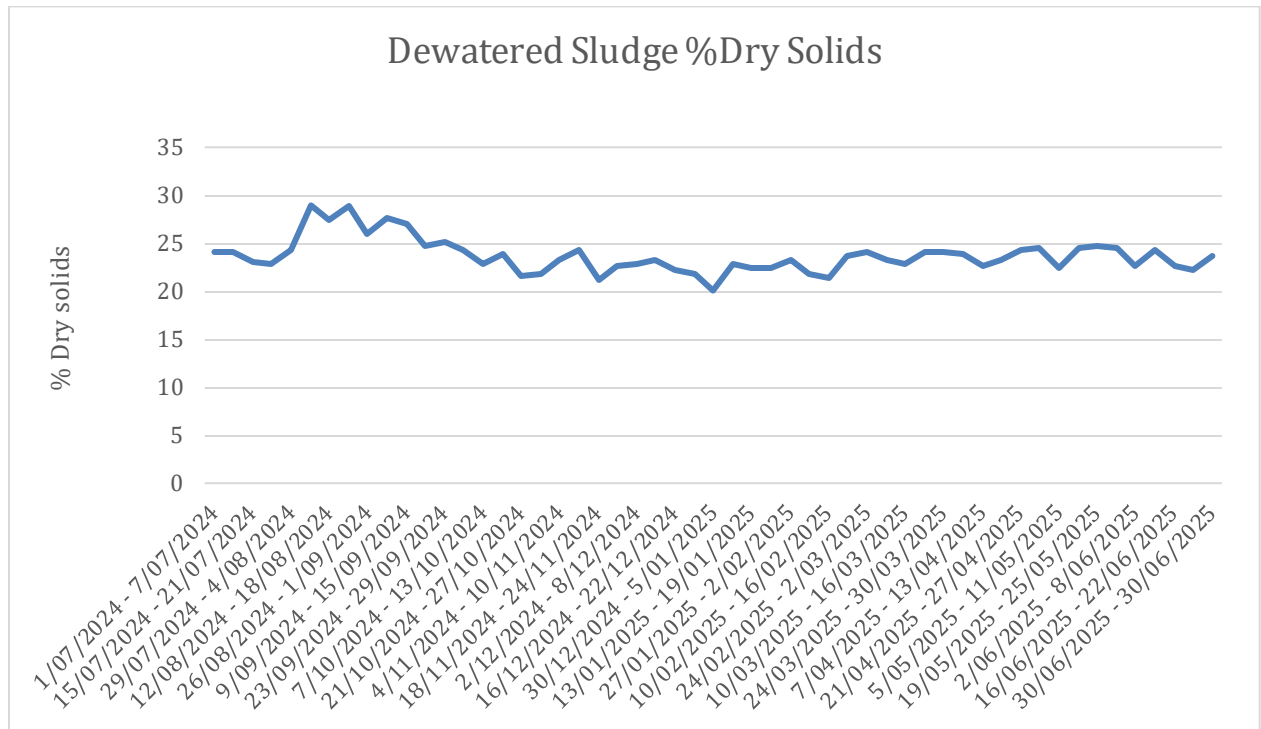


Figure 1: %Dry Solids of Dewatered Sludge (Weekly Average)

Condition (5)

No more than 200 wet tonnes per day (recorded at the weigh bridge) of sludge contaminants shall be discharged to the Southern Landfill.

The permit holder shall ensure that this information shall be recorded at the weigh bridge for each skip bin disposed of.

Figure 2 below shows the graph of the daily tonnage of dewatered sludge disposed to Southern Landfill. It includes dewatered sludge produced in both Careys Gully Sludge Dewatering Plant (SDP) and Western WWTP.

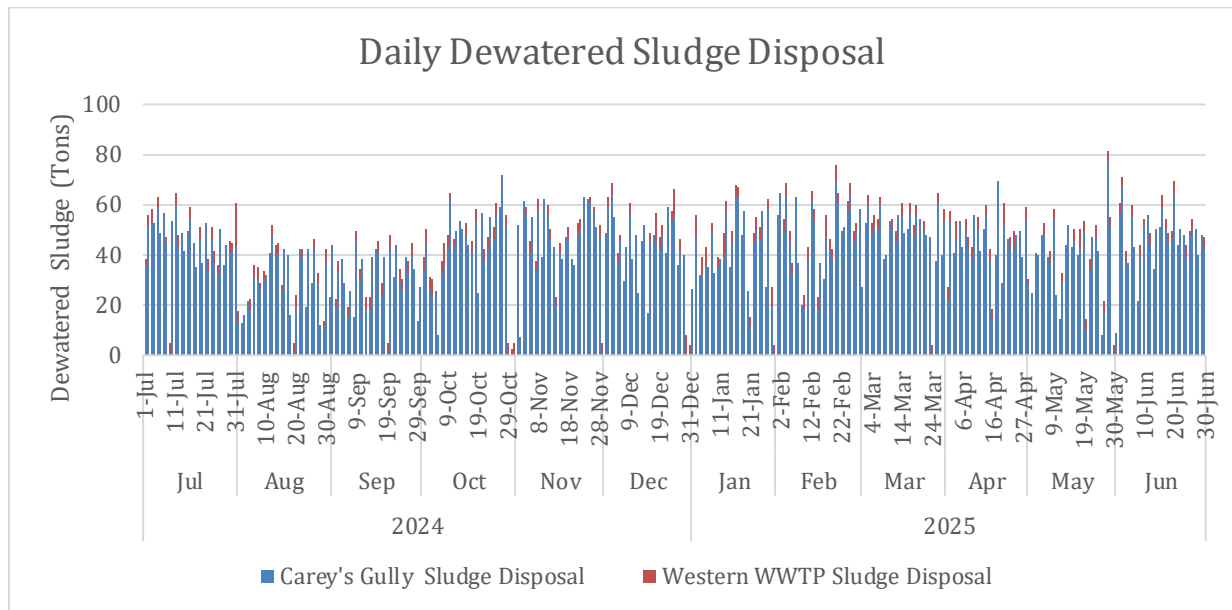


Figure 2: Daily Tonnage of Dewatered Sludge

The total dewatered sludge disposed to the Southern Landfill from 1 July 2024 to 30 June 2025 is 15,262 tonnes. Carey's Gully SDP produced 14,376 tonnes of dewatered sludge, while Western WWTP produced 886 tonnes of dewatered sludge.

Condition (11)

The consent holder will provide to the Manager, Environmental Regulation, Wellington Regional Council, the annual reports that are provided to the Strategy and Policy Committee, Wellington City Council, regarding any alternative options for the disposal of bio-solids in the Wellington District.

Wellington City Council is delivering a Sludge Minimisation Project to replace the Carey's Gully SDP facility. More information about the project can be found on their website: [Moa Point Sludge Minimisation Facility](#), including the expected commissioning date for this project.

Condition (12)

The permit holder shall ensure that sludge contaminants discharged to landfill be combined with municipal solid waste and/or bulking material at a ratio of at least four parts municipal solid waste/bulking material to one part sludge contaminants by mass on a daily basis. Should a four to one ratio not be possible due to limited municipal solid waste/bulking material, the highest ratio available shall be used.

Irrespective of this provision, the weekly mean ratio shall be at least four parts municipal solid waste/bulking material to 1 part sludge contaminants.

Alternative disposal methodologies as provided for in the SDLP do not need to meet this requirement. However, the prior approval of the Manager, Environmental Regulation, Wellington Regional Council is required before proceeding with alternative disposal methodologies detailed in the SDLP.

Figure 3 below shows the graphical representation of the weekly actual ratio of the general waste to dewatered sludge is compliant. The period covered was from 1 July 2024 to 29 June 2025.

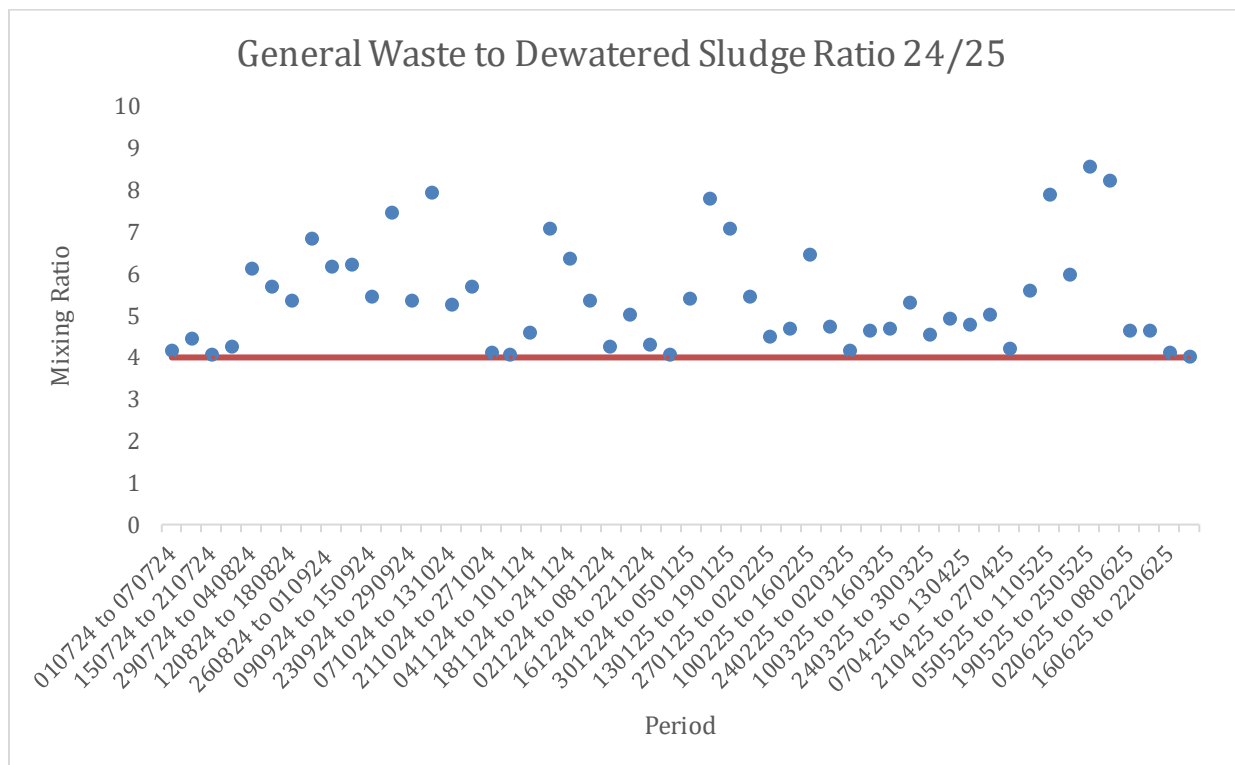


Figure 3: General Waste to Dewatered Sludge Ratio (Actual)

Table 1 below summarizes the volume of solid municipal waste deposited and mixed with the sludge at the landfill and an estimate of the volume of any additional bulking material used to achieve the required mixing ratio. The period covered was from 1 July 2024 to 29 June 2025.

Material Type	Weight (tonnes)
Domestic Clean fill	720
Mixed Domestic	10,647
Mixed Commercial	80,604
Contaminated Soil	3,021
Bulking Material	0
Total Solid Waste (tonnes)	94,992
Total Sludge & Screenings to Landfill (tonnes)	18,077
Ratio of Sludge to Waste (tonnes)	1 tonnes : 5.25 tonnes

Table 1: General Waste to Dewatered Sludge Ratio

Condition (15)

The permit holder shall keep daily records and weekly averages for:

- The total tons per day of sludge contaminated disposed of to landfill;
- The source of the dewatered sludge contaminants (e.g., the SDF or the Western Waste Water Treatment Plant);
- The dry solids content of the sludge in the skip bins determined by the grab samples. Presented as a weekly average;
- The volume of solid municipal waste deposited and mixed with the sludge at the landfill; and
- An estimate of the volume of any additional bulking material used to achieve the required mixing ratio.

The records shall meet the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council.

The records shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council. The records shall be submitted within three months of 30 June of each year and contain information for all reporting conditions from the previous year between 1 July and 30 June.

The required information has been summarized in the previous sections of this report.

WGN070230 [34284]

Condition (11)

Building tightness: The permit holder shall ensure that an independent, appropriately qualified person who meets the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council conducts a 'building tightness' audit a minimum of once every two years (the first being conducted within one year of the commencement of this permit). At a minimum, the audit shall take into account the:

- Design extraction rates of the ventilation system;
- Actual rate of extraction; and
- Negative pressure within the building.

A report shall be produced and submitted with the findings and any recommendations to ensure compliance with the conditions of this permit (with specific regard to condition 6) to the Manager, Environmental Regulation, Wellington Regional Council within one month of the completion of the audit.

Should the report and audit find that the 'building tightness' is lower than necessary to ensure compliance with the conditions of this permit, the permit holder shall undertake any maintenance and repair works that are to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council within two weeks of the submission of the report or other timeframe as agreed with the Manager, Environmental Regulation, Wellington Regional Council.

A building tightness audit was performed in October 2024. A copy of the report has been provided in Appendix I: SDP Building Tightness Assessment.

The assessment noted that, whilst the physical components of the system are generally still fit for purpose, it was having difficulty keeping the building environment under negative pressure due to several reasons including the reduced performance of the biofilter due to high Hydrogen Sulphide (H₂S) loading. The report detailed some recommendations to improve the building tightness, and these were actioned within the financial period.

Greater Wellington Regional Council issued a Please Explain letter on 12 July in relation to an increased number of odour complaints on 28 May 2024. A response was provided within the required timeframe.

Condition (12)

Annual biofilter monitoring: The permit holder shall undertake a comprehensive assessment of the quality of the biofilter media on an annual basis (or more frequently if deemed appropriate by the permit holder). The assessment shall involve an evaluation of the media size distribution and composition.

The results of this assessment, including a summary of the findings, details of any action(s) to be taken to improve the efficiency and function of the biofilter, and a timetable for those actions to be undertaken, shall be submitted to the Manager, Environmental Regulation, Wellington Regional Council within one month of the assessment being undertaken.

Actions to be undertaken may include, but are not limited to:

- Turning, restructuring, and dampening of bed material.
- The addition of supplementary bed material;
- Partial bed material replacement' or
- Total bed material replacement.

A biofilter assessment was performed in July 2024. A copy of the report has been provided in Appendix II: SDP Biofilter Media Assessment.

The biofilter media and granite plenum was replaced in July 2023 improving the performance considerably and reducing odour within the plant boundary.

The July 2024 assessment found decreased performance in some areas of the biofilter, with the report providing recommended actions, some of which subsequently carried out to help improve performance.

As previously mentioned, the Carey's Gully facility will be replaced by the new SMF facility in the near future.

Condition (13)

Scheduled biofilter monitoring: The permit holder shall measure and record the following parameters:

- Continuous online display of differential pressure in the final air duct ahead of the biofilter that is automatically logged,
- Weekly recording of pressure across the biofilter bed,
- Weekly general visual observations of the biofilter condition, including weed growth, compaction, and short circuiting,
- Monitoring of the media moisture content in the upper two thirds layer shall be undertaken once a month for the months of November to March, and once every 3 months during the months of April to October
- Monitoring of the pH of the bio-filter bed media in the upper two thirds layer shall be once a month for the months of November to March, and once every 3 months during the months of April to October.
- The permit holder shall submit to Greater Wellington Regional Council an annual report of the distribution of continuously measured inlet air temperature to the bio-filter system.

All monitoring results shall be recorded and compiled and be made available to an officer of Wellington Regional Council on request and as part of the overall reporting condition as required by Condition 15 of this permit.

Figure 4 shows a graphical representation of the continuous log of biofilter backpressure.

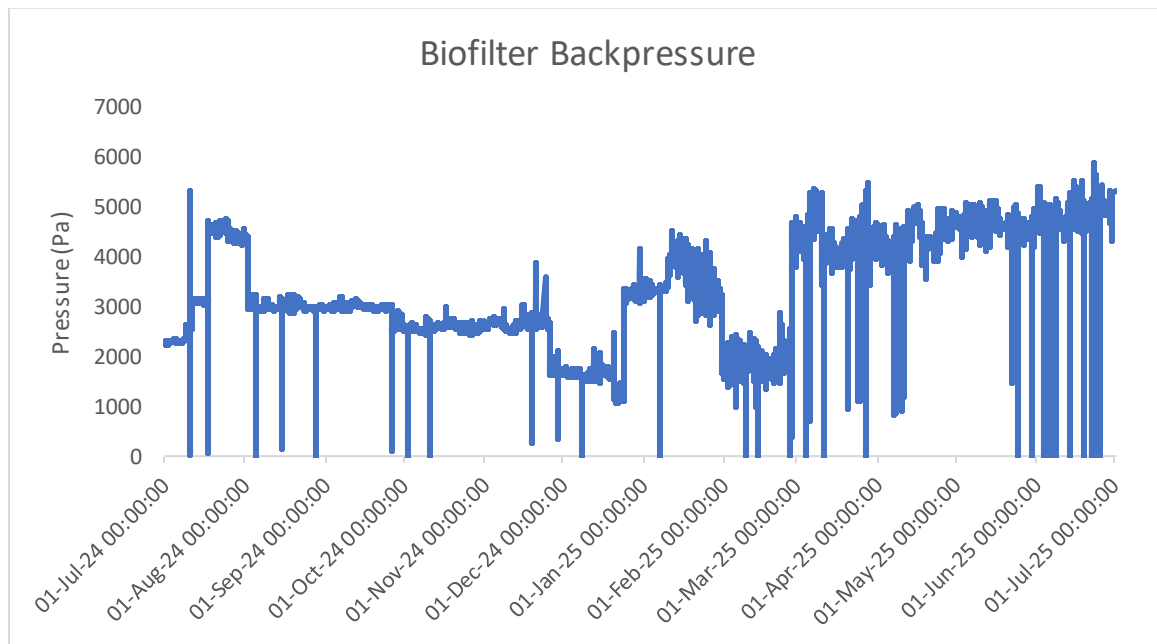


Figure 4: Biofilter Backpressure

Figure 5 shows a graphical representation of the continuous log of inlet air temperature.

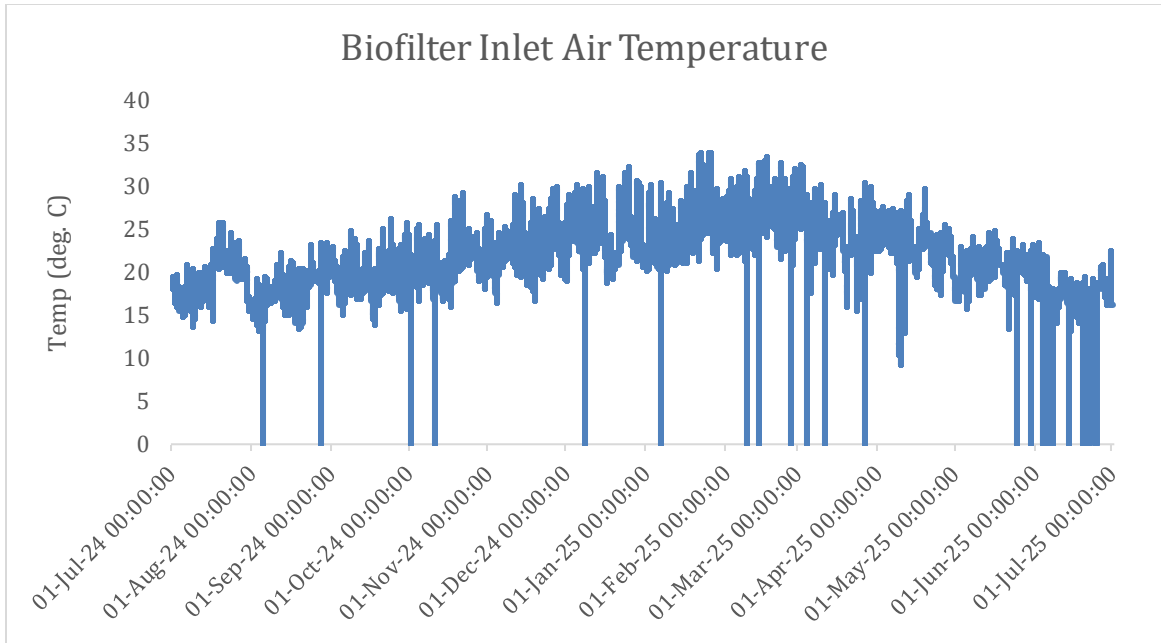


Figure 5: Biofilter Inlet Air Temperature

Figure 6 shows the average biofilter moisture content monitoring. The average moisture content readings are within the consent requirement of 40 – 65%.

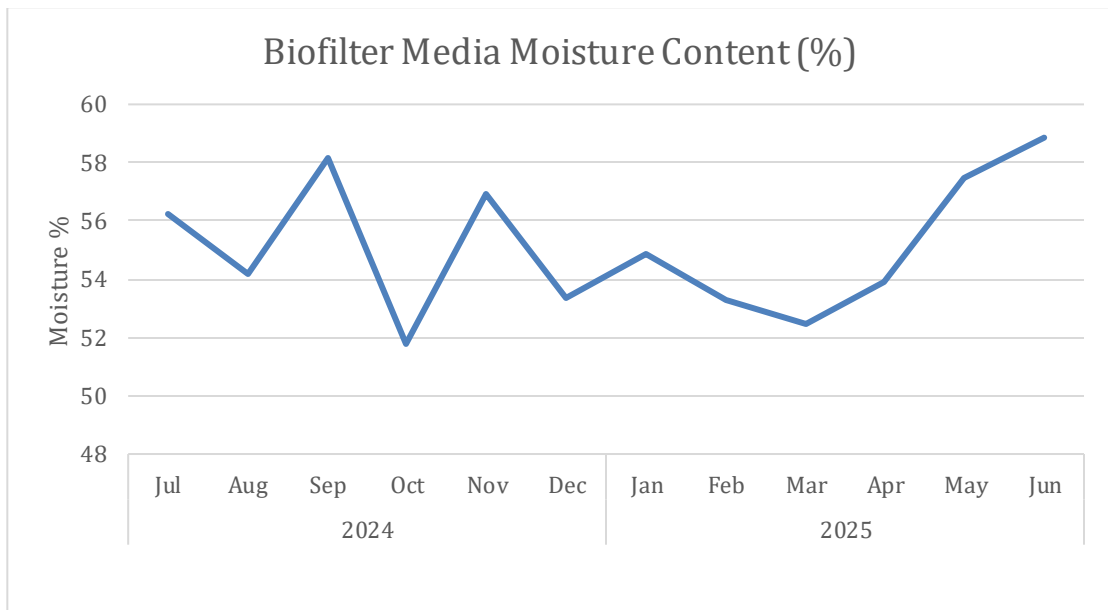


Figure 6: Biofilter Media Moisture Content (Monthly Average)

Figure 7 shows the average monthly biofilter pH monitoring. The average pH content readings are within the consent requirement of 5 – 8.

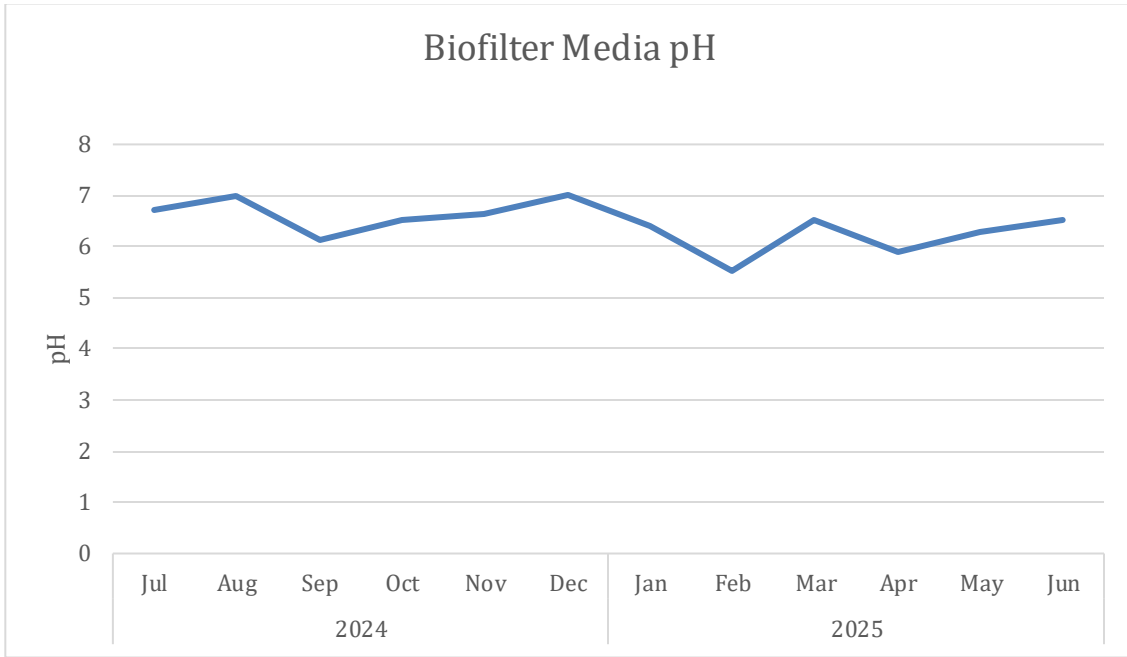


Figure 7: Biofilter Media pH (Monthly Average)

Condition (14)

Biofilter requirements: The permit holder shall ensure that the biofilter and bed complies with the following limits at all times:

- A minimum bed depth of filter media of 1.0 metres,
- A minimum gas retention time based on an empty bed volume of 90 seconds, except during planned maintenance works that have been notified to the Wellington Regional Council under Condition 7 of this permit.
- A bed moisture content of between 40 - 65% by weight,
- A pH of filter media between 5 and 8,
- An even distribution of gas flow through the filter bed, and
- That there are no short circuits of untreated air through the filter bed.

The monitoring requirements have been displayed in WGN070230 [34284], Condition (13).

A biofilter assessment was performed in July 2024. A copy of the report has been provided in Appendix II: SDP Biofilter Media Assessment.

The biofilter media and granite plenum was replaced in July 2023 improving the performance considerably, however the July 2024 assessment found decreased performance in some areas with the report providing recommended actions some of which subsequently carried out to help improve performance.

Condition (15)

The permit holder shall prepare and submit the relevant monitoring results, data and other information as required by conditions 11 - 14 of this permit in the form of a report to the Manager, Environmental Regulation, Wellington Regional Council.

The report shall meet the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council and be submitted within three months of 30 June of each year and contain information from all monitoring condition for the previous year between 1 July and 30 June.

The information required by this condition has been summarised in the previous conditions outlined in the section of resource consent WGN070230 [34284] in this report.

Condition (17)

The permit holder shall continue to engage with the Community Liaison Group (CLG) established and maintained under Consent WGN940045 [20316] and [20346] (general Southern Landfill consents).

The role of the CLG will be to liaise with the community about activities relating to the Carey's Gully Sludge Dewatering Plant and associated disposal to the Landfill and provide information to the community. Meetings of the CLG will be held on a quarterly basis (i.e., every three months). However, the frequency of the meetings can be reduced by agreement at the CLG.

A term of reference, setting out the rights and responsibilities of the CLG and its relationship to the Council and its officers, will be drawn up by the permit holder in consultation with the CLG within four months of the commencement of this permit.

A summary of each meeting that includes, but is not limited to, issues discussed, actions agreed upon and any follow-up on agreed actions from previous meetings, shall be forwarded to the Manager, Environmental Regulation, Wellington Regional Council within 10 working days of each CLG meeting.

It will be the responsibility of the members of the community who wish to be a member of the CLG to contact the permit holder to register expressions of interest. The permit holder will contact all persons who had registered interest to inform them of upcoming meetings.

The CLG meetings are organized and facilitated by the operators of the landfill. The last meeting held in the reporting period was on 15th May 2025. The minutes from the four meetings held in the reporting period can be provided on request.

Appendix I:

Sludge Dewatering Plant Building Tightness Assessment

Appendix II:
Sludge Dewatering Plant Biofilter Assessment

