

AUGUST 2024 MONITORING EVENT REPORT - DAYLESFORD LANDFILL

Hepburn Shire Council

02/09/2024

Author:
Lucy Edwards
Ping Yao

COMMERCIAL IN CONFIDENCE

Issue/Rev	Date	Revision Description	By	Checked	Approved
Report 1.0	30/08/2024	Draft	Lucy Edwards Ping Yao	Lucy Edwards Ping Yao	Bryan Woods
Report 1.1	2/09/2024	Final	Lucy Edwards Ping Yao	Lucy Edwards Ping Yao	Bryan Woods

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EXECUTIVE SUMMARY

Ventia Utility Services Pty Ltd has been engaged by the Hepburn Shire Council to undertake groundwater and leachate monitoring and reporting at the Daylesford landfill site. This report summarises the major findings of the August 2024 monitoring event and provides further interpretation of results.

The current monitoring program is required to satisfy specific environmental conditions as requested by the Hepburn Shire Council. The annual program is comprised of biannual groundwater and leachate bore monitoring. The monitoring network consists of four groundwater bore monitoring locations and one leachate bore monitoring location. All sites were located and were able to be sampled during the August 2024 event.

GROUNDWATER

All groundwater sites exceeded at least one of the adopted assessment criteria during the August 2024 monitoring event (ANZECC 2000 guidelines for Fresh Water 95%, Irrigation and Livestock). Results were in line with historic trends at the majority of monitoring bores.

ANZECC 2000 Fresh Water 95% guideline had manganese exceedances at BH1, BH3 and BH4, the ANZECC 2000 Irrigation guidelines had groundwater bore exceedances at all bores for sodium and chloride, and at BH2 for manganese. Lastly the ANZECC 2000 Livestock Guidelines had exceedances in BH4 for TDS.

All sites were able to be located, gauged and sampled via low flow equipment during the event. No issues were reported at any of the bore locations.

LEACHATE

LB1 was able to be located and sampled during the August 2024 Monitoring Event out at Daylesford Landfill. All water quality results fit in line with historic, however field pH was more acidic than it has been at 6.68 (comparison of historic records can be found in Appendix F). No exceedances against guidelines were noted at Leachate site LB1.

1. INTRODUCTION

Ventia Utility Services Pty Ltd (Ventia) was engaged by Hepburn Shire Council to undertake groundwater and leachate monitoring and event reporting at the former Daylesford Landfill and current Waste Transfer Station located at 16 Ajax Road, Daylesford, Victoria (the site). The site is approximately 5.6 hectares and is registered under A13c (waste and resource recovery – small).

2. MONITORING PROGRAM OVERVIEW

2.1. SITE CONTEXT

Daylesford Landfill and surrounding land to the west of the site is listed on the Victorian Landfill Register. There are several sensitive receptors located nearby; Boomerang Holiday Ranch is directly West, while Sailers Creek is located 100 m West, and an area of Aboriginal Cultural Heritage sensitivity is situated 180 m West. As well as these, residential properties are noted to be approximately 70 m to the East, while no domestic or stock watering bores are located within 250 m of the site. Daylesford Landfill operated until 2004 and when licensed the landfill could accept a range of wastes including municipal solid waste and was classed as a Type 2 landfill (putrescible waste). The site is now the location of a transfer station.

The current monitoring program is required to satisfy specific environmental conditions as requested by the Hepburn Shire Council. There is currently no aftercare management plan or third-party management plan (audit) available for Daylesford closed Landfill, Ventia provides biannual monitoring of the site, along with Event reports for Hepburn Shire Council.

2.2. SCOPE OF WORKS

Ventia was engaged to undertake groundwater and leachate monitoring at the Daylesford Landfill comprising:

- Biannual monitoring of the 4 groundwater bores;
- Biannual monitoring of 1 leachate pond;

This report includes information from the August 2024 monitoring event.

A map of the landfill site location, groundwater bores and leachate pond are provided in Figure 1 and Figure 2, below.

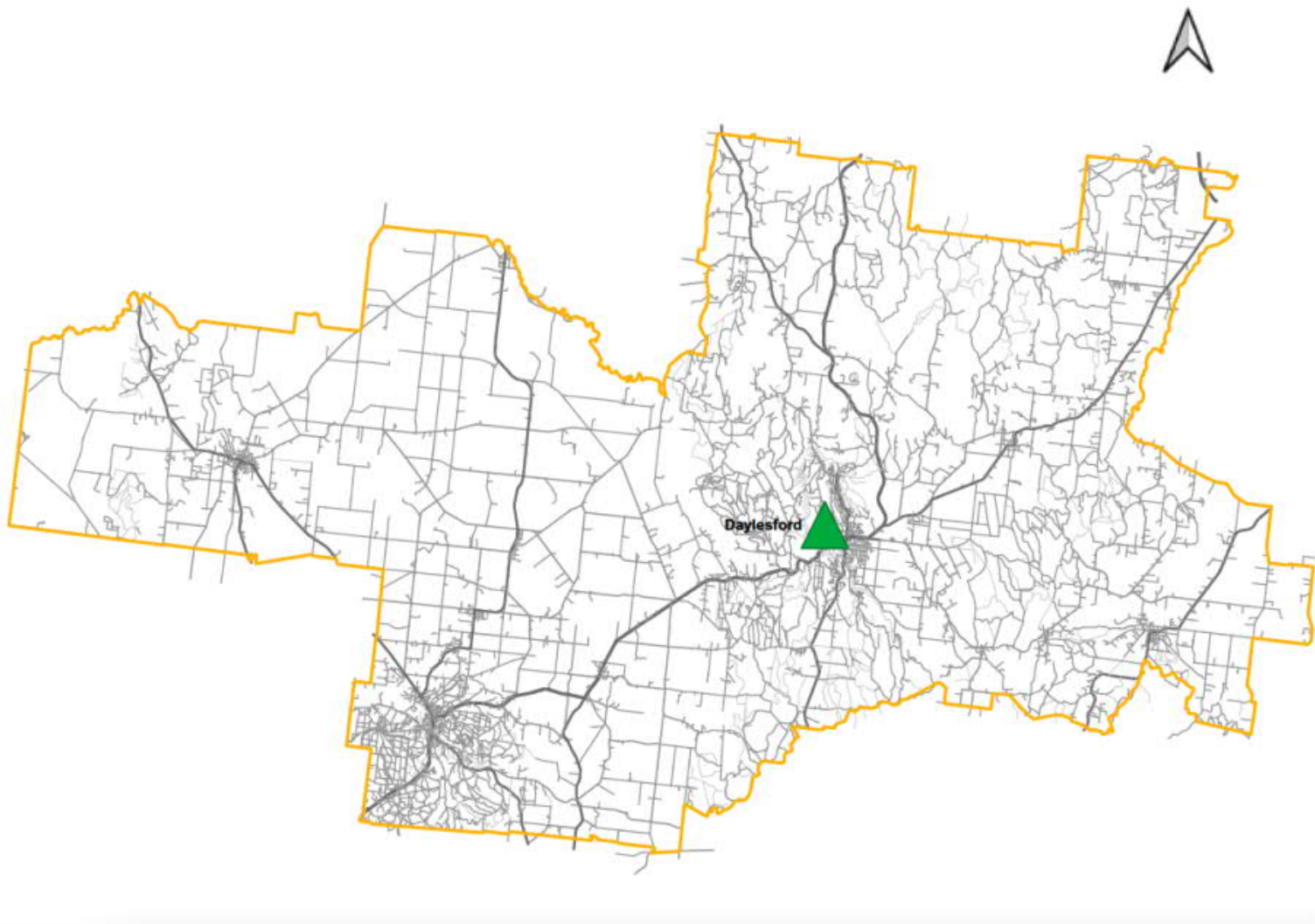


Figure 1 Site location of Daylesford Landfill



Figure 2 Groundwater Bores and Leachate Pond at Daylesford Landfill

3. SAMPLING AND ANALYSIS SCHEDULE

3.1. GROUNDWATER

Four groundwater bores were monitored in the August 2024 monitoring program (Table 1). All bores were sampled via low flow techniques.

Table 1 Groundwater Bore Sites

Bore	Installation Date	Northing (Zone 54)	Eastings (Zone 54)	Screen Depth (mBTOC)	Installation Depth (mBTOC)
BH1	Unknown	777271.622	5863383.638	Unknown	26.90
BH2	Unknown	777247.891	5863473.309	Unknown	20.75
BH3	Unknown	777216.441	5863576.347	Unknown	18.33
BH4	Unknown	777400.804	5863488.237	Unknown	39.14

Notes:

mBTOC – Metres Below Top of Casing
 mAHD – Metres Australian Height Datum

3.2. LEACHATE SITES

The leachate pond (LB1) was visited and sampled in the August 2024 monitoring program (Table 2).

Table 2 Leachate Bore Sites

Bore	Installation Date	Easting	Northing	Bore Elevation* (mAHD)	Maximum Leachate Levels (mAHD)
LB1	Unknown	777215.334	5863534.941	556.500	Unknown

Notes:

mBTOC – Metres Below Top of Casing
 mAHD – Metres Australian Height Datum

4. SAMPLING METHODOLOGY

4.1. FIELD MEASUREMENTS

Groundwater quality parameters were recorded using a calibrated multi-parameter water quality instrument.

Field record sheets are included as Appendix A.

Groundwater quality measurements recorded include:

- Electrical Conductivity;
- pH;
- Temperature;
- Oxidation Reduction Potential (ORP, or Redox); and
- Dissolved Oxygen.

4.2. LOW FLOW SAMPLING

All groundwater bores were sampled using low flow methods during the August 2024 monitoring event as per the Ventia low flow groundwater sampling procedures which are based on the EPA's Groundwater Sampling Guidelines (Publication 669, April 2000). Sample tubing is left in the bore and replaced every year.

A flow through cell was utilised for field stabilisation measurements during the purging cycle. Measurements were taken at approximate five-minute intervals depending on the flow rate during the purging cycle and recorded on the Ventia Groundwater Sampling Field Sheet provided within the individual monitoring event reports.

Samples were considered stable after three successive measurements were recorded within a defined range as per Table 3.

Table 3 Stabilisation Parameters

Parameter	Range
EC	+/- 3%
pH	+/- 0.05
Redox	+/-10mV
Temperature	+/-10%
Dissolved Oxygen	+/-10%

Signed chain of custodies and laboratory sample receipt records are included within Appendix E.

4.3. GRAB SAMPLING

If the low flow technique is unable to be used bores will be sampled via bailer. This can occur when there are access or bore issues which negates the use of low flow techniques.

All water quality measurements are still able to be collected, however, only one set of parameters per site is collected.

5. REPORTING

5.1. ASSESSMENT CRITERIA

5.1.1. Groundwater and Surface Water Quality Objectives

Beneficial uses for the site were assessed against the Environmental Reference Standard (ERS, DELWP 2021, previously SEPP, Waters). Protected beneficial uses applicable to the site along with the screening criteria that have been adopted in relation to each of the identified potential beneficial uses, is supplied in Table 4.

Table 4 Beneficial Uses and Adopted Assessment Criteria

Beneficial Use Classification	Adopted Assessment Criteria
Maintenance of ecosystems	ANZECC (2000) 95% protection for slightly to moderately modified freshwater aquatic ecosystems
Livestock	ANZECC (2000) Livestock
Irrigation	ANZECC (2000) Irrigation
Buildings and structures	Varied: No guideline applied
Primary contact recreation	Varied: No guideline applied

Requirements for site laboratory analysis, as requested by Hepburn Shire, are tabulated below (Table 5).

Table 5 Water Quality Objectives

Analytes	Detection Limit	Groundwater Quality Objectives
pH	0.01 pH units	6.5 to 8.0
Electrical conductivity (EC)	1 µS/cm	-
Total dissolved solids (TDS)	10 mg/L	2,000 mg/L
Calcium (CA)	1 mg/L	1,000 mg/L
Magnesium (Mg)	1 mg/L	2,000 mg/L
Sodium (Na)	1 mg/L	115 mg/L
Potassium (K)	1 mg/L	-
Chloride (Cl)	1 mg/L	25-700 mg/L
Sulphate (SO ₄)	1 mg/L	250 mg/L
Bicarbonate alkalinity (as CaCO ₃)	1 mg/L	-
Total organic carbon (TOC)	1 mg/L	-
Chemical oxygen demand (COD)	10 mg/L	-
Ammonia (NH ₃)	0.01 mg/L	0.9 mg/L (as NH ₃)
Nitrate (NO ₃)	0.01 mg/L	0.16 mg/L (as N)
Total Kjeldahl nitrogen (TKN)	0.1 mg/L	25 mg/L
Volatile fatty acids (VFA)	5 mg/L	-
Arsenic (As)	0.005 mg/L	0.01 mg/L
Cadmium (Cd)	0.005 mg/L	0.002 mg/L
Chromium (Cr)	0.001 mg/L	0.001 mg/L
Copper (Cu)	0.001 mg/L	0.0014 mg/L
Lead (Pb)	0.001 mg/L	0.0034 mg/L
Mercury (Hg)	0.0001 mg/L	0.001 mg/L
Nickel (Ni)	0.001 mg/L	0.011 mg/L
Zinc (Zn)	0.005 mg/L	0.008 mg/L

6. WEATHER CONDITIONS

Temperature and rainfall data was taken from the Bureau of Meteorology (BOM) Weather Station Castlemaine Prison (station 088110), located at Castlemaine (approximately 30 km north of the Site), while barometric pressure data was obtained from Bendigo Airport (station 081123) which is approximately 68 km north of the Site.

Figure 3 and Figure 4 depict weather and barometric pressure readings leading up to and during the monitoring event. No rainfall was recorded during the August 2024 groundwater monitoring event. The barometric pressure was falling during the August 2024 groundwater monitoring event.

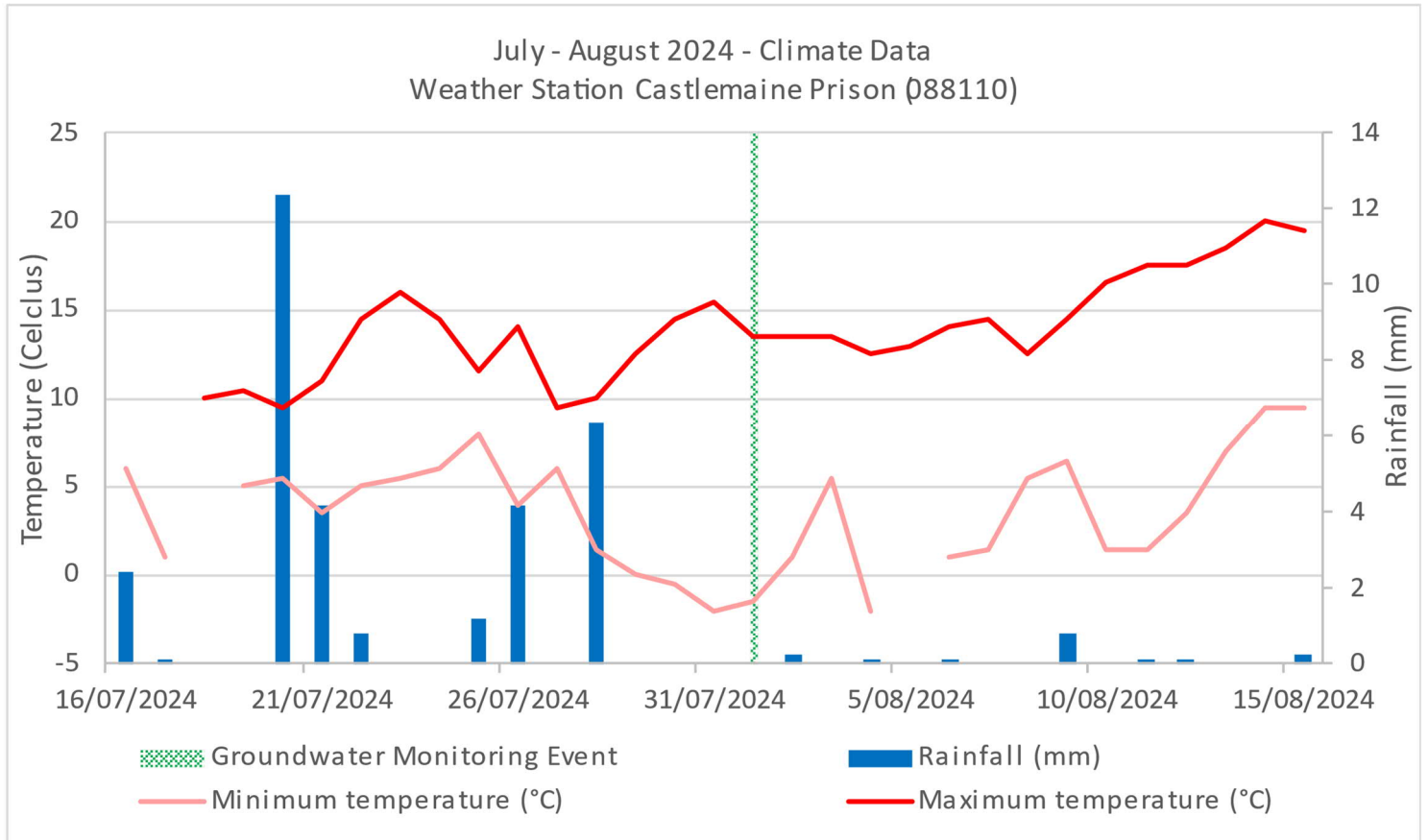


Figure 3 August 2024 temperature and rainfall readings from Castlemaine Prison and corresponding Ventia site visits

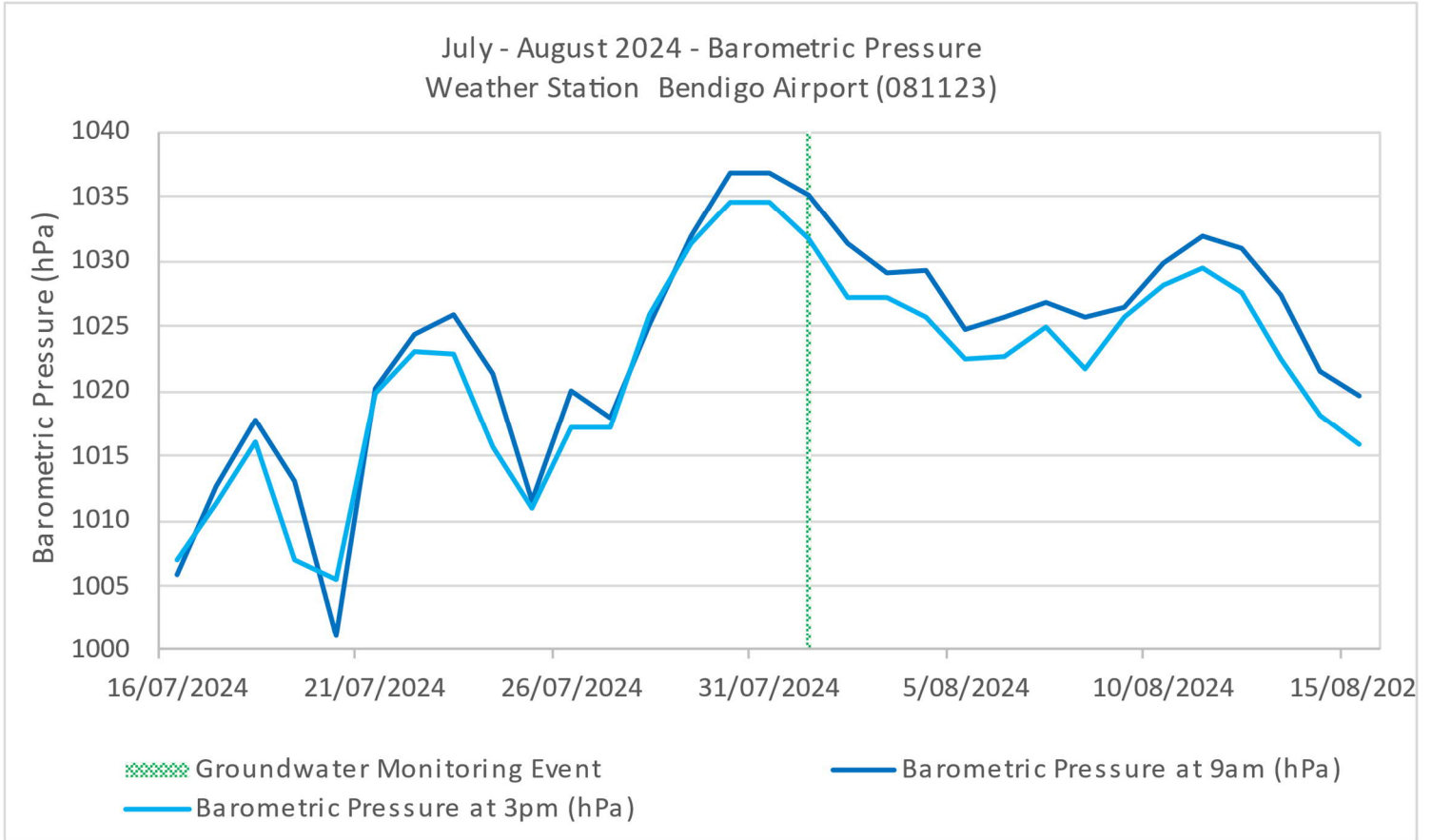


Figure 4 July/August 2024 twice daily barometric pressure readings from Bendigo Airport and corresponding Ventia site visits

7. WATER MONITORING RESULTS

7.1. GROUNDWATER MONITORING RESULTS

7.1.1 Groundwater Field Measurements

A summary of the groundwater field measurements at Daylesford Landfill during the August 2024 monitoring event is provided below (Table 6).

Table 6 Groundwater and Leachate Gauging Data and Field Measurements

ID	Date	WD (mBTOC)	SWL (mBTOC)	EC µS/cm	pH	Temp °C	ORP mV	DO mg/L
BH1	1/08/2024	27.92	17.43	2041	5.60	14.2	52.7	4.51
BH2	1/08/2024	20.10	7.72	2962	6.18	12.7	43.8	4.67
BH3	1/08/2024	18.30	3.83	3198	6.01	12.5	40.3	4.69
BH4	1/08/2024	37.00	25.87	4339	5.42	14.4	-5.5	0.43

Notes:

- WD -- Well Depth
- SWL -- Standing Water Level
- mBTOC -- Metres Below Top of Casing
- mAHD -- Metres Australian Height Datum

7.1.2 Groundwater Quality

Table 7 provides a summary of groundwater exceedances against the adopted ANZECC 2000 Freshwater 95% Species Protection, ANZECC 2000 Irrigation and ANZECC 2000 Livestock guidelines. A complete results table is provided in Appendix C, while copies of the laboratory analysis certificates are provided in Appendix E.

Table 7 Groundwater Exceedances

	Solids	Major Ions		Metals
	TDS	Chloride	Sodium	Manganese
	mg/L	mg/L	mg/L	mg/L
EQL	10	1	0.5	0.005
ANZECC 2000 FW 95%				1.9
ANZECC 2000 Irrigation		175	115	0.2
ANZECC 2000 Livestock	2,000			

Field ID	Date	Lab Report Number	TDS	Chloride	Sodium	Manganese
BH1	01 Aug 2024	1124550	1,200	490	150	6.2
BH2	01 Aug 2024	1124550	1,700	570	270	1.4
BH3	01 Aug 2024	1124550	1,900	630	290	2.0
BH4	01 Aug 2024	1124550	2,800	940	360	5.8

Environmental Standards

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 FW 95%

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Irrigation

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Livestock

All groundwater sites exceeded at least one of the adopted assessment criteria including ANZECC 2000 Fresh Water 95% guideline, ANZECC 2000 Irrigation, ANZECC 2000 Livestock and groundwater quality objectives during the August 2024 monitoring event.

Manganese exceeded the ANZECC 2000 Fresh Water 95% guideline at all groundwater bores except BH2, where it exceeded the Irrigation guideline instead. Chloride and sodium exceeded the ANZECC 2000 Irrigation guideline at all sites. The only TDS exceedance was detected at BH4 (2,800 mg/L), which breached the ANZECC 2000 Livestock guidelines. All primary laboratory results from this program are located in Appendix C.

A summary of guideline exceedances of groundwater samples collected from the August 2024 monitoring period are provided below. Table 8 indicates potential impacts against the adopted assessment criteria.

Table 8 Summary of Potential Groundwater Impacts against the Adopted Assessment Criteria

Monitoring Location	ANZECC 2000 FW 95% Species Protection	ANZECC 2000 Irrigation	ANZECC 2000 Livestock
BH1	✘ - Manganese	✘ - Chloride and sodium	✓
BH2	✓	✘ - Chloride, sodium and manganese	✓
BH3	✘ - Manganese	✘ - Chloride and sodium	✓
BH4	✘ - Manganese	✘ - Chloride and sodium	✘ - TDS

Notes: ✘ indicates potential impact to the protected Beneficial Use
 ✓ indicates no identified impact to protected Beneficial Use

7.2. LEACHATE MONITORING RESULTS

7.2.1 Leachate Field Measurements

The Leachate bore LB1 was visited and sampled during the August monitoring event. Leachate field monitoring results have been provided in Table 9.

Table 9 Leachate Field Measurements

ID	Date	SWL (mBTOC)	SWL (mAHD)	EC (µS/cm)	pH	Temperature (°C)	ORP (mV)	DO (mg/L)
LP1	1/08/2024	-	-	706	6.68	12.9	61.1	7.36

7.2.2 Leachate Quality

No exceedances against the adopted ANZECC 2000 Freshwater 95% Species Protection, ANZECC 2000 Irrigation and ANZECC 2000 Livestock guidelines were detected from the Leachate Pond sample. A complete results table is provided in Appendix B, while copies of the laboratory analysis certificates are provided in Appendix E.

8. QUALITY CONTROL / QUALITY ASSURANCE

8.1. PROGRAM

A summary of the QA/QC procedures adopted for the monitoring program are provided in Table 10.

Table 10 Quality Assurance and Quality Control program

Item	Description
Laboratory accreditation	Groundwater samples were submitted to laboratories that are accredited by NATA for the analytes tested. All primary samples were submitted to Eurofins and secondary samples to ALS.
Sample collection and transport	All samples were collected by suitably qualified Ventia personnel trained in the relevant procedures. Samples were sealed into laboratory prepared containers then transferred to the laboratory using the correct sample preservation and chain of custody protocols.
Field and inter-lab duplicates	Blind and split duplicate samples were collected at greater than the nominated rate of 1 in 20 primary samples. One duplicate set was taken for the August 2024 monitoring event.
Relative percentage difference (RPD)	<p>The relative percentage difference (RPD) is assessed to evaluate the sampling methodology and the analytical techniques used. The RPD is calculated using the following formula:</p> $RPD = \frac{(Result\ 1 - Result\ 2)}{(Result\ 1 + Result\ 2)/2} \times 100\%$ <p>RPD's have been assessed under the following criteria:</p> <ol style="list-style-type: none"> 1. RPDs have only been considered where a concentration is greater than 1 times the EQL 2. Acceptable RPDs for each EQL multiplier range are: 81 (1-10 x EQL); 50 (10-30 x EQL); 20 (> 30 x EQL) 3. The significance of RPD of results should be evaluated on the basis of sampling technique, sample variability, absolute concentration relative to criteria and laboratory performance 4. This variation can be expected to be higher for organic analysis than for inorganics, and for low concentration of analytes.
Sample blanks	<p>Sample blanks were submitted to verify that no cross contamination had occurred during sampling or in the transfer of samples to the laboratory (Table I2):</p> <ul style="list-style-type: none"> • Equipment rinsate samples were collected at the nominated rate of 1 in 20 primary samples or one per sample type, whichever was greater. <p>The frequency of sample blanks was considered suitable to satisfy the data quality objectives of the program. One rinsate was taken for the August 2024 monitoring event.</p>

Item	Description
Laboratory quality control procedures	<p>All analytical laboratories used by Ventia are required to adhere to NATA endorsed methodologies and conduct regular control checks on their analyses. Ventia requires these laboratories to regularly provide results of control method blanks, repeat blind replicates and recoveries. The following summarises pertinent acceptance limits for internal laboratory analysis:</p> <ul style="list-style-type: none"> • Surrogates: 75 - 125% recovery • Matrix spikes: 70% - 130% • Laboratory control samples: 75% - 125% • Laboratory Duplicate Samples: Acceptable RPDs for each EQL multiplier range are: Not Applicable (1-10 x EQL); 50 (10-30 x EQL)*; 20 (> 30 x EQL)*. • Method Blanks: 0 to <PQL <p>*Unless sample heterogeneity is established.</p>

8.2. RESULTS

The QA/QC program consisted of the collection of duplicate samples and rinsate samples. A summary of the QA/QC results is provided in Appendix D. All samples were collected by suitably qualified Ventia personnel and the sampling methods, including sample preservation, transport and decontamination, were consistent with Ventia procedures.

Across the sampling program, 5 primary samples were collected during the August 2024 monitoring program. One blind and one split duplicate sample was collected for comparison, in accordance with the data quality objective. This meets the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) recommended minimum rate of one per 20 samples.

A review of exceedances indicates that where RPDs were above the adopted criteria, differences can generally be attributed to two different categories. Table 12 (below) displays all high RPD's, results that are coloured yellow are those that are less than 10 times the Estimated Quantitation Limit (EQL). Results coloured green are where the primary samples were higher than the secondary value which provides a more conservative observation of the analyte. Results highlighted blue are discussed below.

Volatile fatty acids (as acetic acid) had a high RPD of 165% between the primary and the split sample taken at BH2. Volatile Fatty Acid analysis is carried out differently by the Primary and Secondary laboratories and a large difference in results between the primary and split sample is often seen. Total organic carbon was found to have a high RPD between the primary and the split sample (taken at BH2) and the primary and the blind sample (taken at BH1). It is possible this is due to heterogeneity of the samples as both sites were noted to be turbid. There are no nominated exceedance values for the ANZECC guidelines, but for a more conservative observation the secondary sample results should be used.

The Relative Percentage Difference (RPD) for field duplicates and inter-lab duplicates were calculated for all results and are summarised in Appendix D.

Table 11 RPD Exceedances

Site	Secondary Sample	Date	Primary Lab Report	Secondary Lab Report	Analyte	Units	EQL	Primary Result	Secondary Result	RPD
BH2	Split	1/08/2024	1124550	EM2413118	Volatile Fatty Acids (as Acetic Acid)	ug/L	5,000	<5000	52000	165
					Potassium	mg/L	0.5	1.4	2	35
					Kjeldahl Nitrogen Total	mg/L	0.1	0.5	<0.1	133
					TOC	mg/L	1	<5	38	153
					Iron	mg/L	0.05	8.8	2.88	101
BH1	Blind	1/08/2024	1124550	1124550	TOC	mg/L	1	<5	15	100

There were detects in the rinsate samples during the August 2024 monitoring round. The results are displayed in Appendix C. COD results were less than 10 times the Limit of reporting (LOR), while iron and manganese were marginally over 10 times the LOR. The results indicate care needs to be taken when cleaning the equipment used, however, rinsate results have been compared against primary samples and results are in line with historic, showing this has not adversely impacted results.

Based on the QA/QC program, the analytical data is sufficient for the purposes of this monitoring program.

9. CONCLUSIONS

9.1. GROUNDWATER

All groundwater sites exceeded at least one of the adopted assessment criteria during each monitoring event (ANZECC 2000 guidelines for Fresh Water 95%, Irrigation and Livestock) Results were in line with historic trends at the majority of monitoring bores.

BH1, BH3 and BH4 all had exceedances against ANZECC 2000 FW95% guidelines, BH4 also exceeded ANZECC 2000 Livestock guidelines. All sites (BH1, BH2, BH3 and BH4) were found to exceed against the ANZECC 2000 Irrigation guidelines.

All four of the groundwater locations were accessible and able to be sampled by low flow equipment. There were no issues noted for any of these sampling locations.

10.3. LEACHATE

Leachate bore LB1 was able to be accessed and sampled in August 2024. No issues were noted at the site and there were no exceedances against any of the adopted guidelines.

10.4. DATA UNCERTAINTY AND STATEMENT OF LIMITATIONS

Ventia has used a degree of skill and care ordinarily exercised by reputable members of our profession practising in the same or similar locality. The conclusions presented in this report are relevant to the condition of the site and the state of legislation currently enacted as at the date of this report. Ventia does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

11. DECLARATION

This declaration acknowledges that Ventia has been requested by Hepburn Shire Council to undertake an Environmental Monitoring Program in accordance with sampling and analysis as delegated by Hepburn Shire.

Ventia sampling procedures were adopted for all environmental monitoring undertaken. All groundwater and surface water monitoring were conducted in accordance with EPA Victoria's Groundwater Sampling Guidelines (Publication 669; April 2000) and Sampling and Analysis of Waters, Wastewaters, Soils and Wastes (IWRG701; EPA, 2009).

This report provides a summary of the analysis conducted under the monitoring program, an assessment of the likely offsite water quality and air quality impacts associated with the landfill as well as recommendations for improvements to the monitoring program.

Ventia is of the opinion that this report prepared on behalf of Hepburn Shire Council and titled 'August 2024 Monitoring Event Report - Daylesford Landfill' contains adequate information of suitable quality to enable the Hepburn Shire Council to fulfill its monitoring requirements.

12. REFERENCES

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EPA 2000. A Guide to the Sampling and Analysis of Waters, Wastewaters, Soils and Wastes. Publication 441.7, Environmental Protection Authority, State Government of Victoria.

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APPENDICES

APPENDIX A – MAP



Daylesford



Hepburn Regional Park - Part

BH3

Leachate Pond


BH2


BH4


Daylesford Transfer Station And Landfill

BH1

Legend

 Daylesford Landfill Boundary

 Groundwater Bore

 Leachate Pond

Google Earth

Image © 2024 Airbus

100 m



APPENDIX B - FIELD RECORD SHEETS



Daylesford Landfill Sampling



SAMPLING RESULTS SUBMISSION SHEET (SAMPLING UNDERTAKEN BY VENTIA)



Client: Hepburn Shire Council
Site: Daylesford Landfill
Program: Groundwater/Surface Water Sampling

Sampling Period: AUG 2024
Sampler: PR, AM
Phone: 0408 405 305

Bore/Sample Point	Date	Time (EST)	Depth (mbmp)	SWL m (mbtoc)	Electrical Conductivity (us/cm @ 25°C)	pH	Temp. (°C)	Redox (mV)	DO (mg/L)	Comments
BH1	1/08/2024	14:05	27.92	17.43	2041	5.60	14.2	52.7	4.51	Clear, no odour. Blind and split samples taken.
BH2	1/08/2024	11:23	20.10	7.72	2962	6.18	12.7	43.8	4.67	Little bit turbid, no odour. Rinsate and Split taken/done here.
BH3	1/08/2024	12:51	18.30	3.83	3198	6.01	12.5	40.3	4.69	Little bit turbid, no odour.
BH4	1/08/2024	14:30	37.00	25.87	4339	5.42	14.4	-5.5	0.43	Cloudy no odour, light grey.
LP1	1/08/2024	15:03	-	-	706	6.68	12.9	61.1	7.36	

NOTES:

- 1 Groundwater samples taken using the low-flow method (as per EPA Publication 669) unless otherwise noted
- 2 All depths measured from the top of the PVC casing

Notes: All bore measurements are referenced to the marked measurement point. All Coordinates in GDA94.

TS Groundwater sampling field sheet - Env Monitoring



Bore ID No	BH1	Project Name	Hepburn Landfills	Sampling Staff	AM & PR
Project Area:		Client		WQ. Meter Model	Hanna
Date	1/08/2024	Project No		WQ. Meter Serial #	7490039101

Expected Bore Details

Internal Diameter (mm)		Easting		Total Depth (m)		Screen Depth From (m)	
Drop Tube already in bore? (Y/N)	N/A	Northing		Water Level (m)		Screen Depth To (m)	
Drop Tube Length (m)	N/A	Zone		Set Pump inlet at (m)		Set Pump at (m)	

Additional Information

Bore Field Measurements

Time of SWL	13:30	Total Depth (m)	27.92	Mid-screen accessible?	Clear	Depth pump set at (m)	25.00
Static Water Level (m)	17.34	Bore Diam (mm)	50	Open Screen Length(m)	0.00	Depth of pump inlet (m)	#VALUE!

Well Purging Details

Sampling Details

Sample Bottles Required

Purge Method	LF	Pump Type	MP	Sampling Method	LF	Bottle Type	Quantity	Bottle Type	Quantity
Time Pump in	13:40	Pump in' WL	17.19	Time Started	14:05	WL m (start)	17.43		
Time Started	13:42	WL m (start)	17.19	Time Stopped	14:08	WL m (end)	17.43		
Time Stopped	14:05	WL m (end)	17.43	Duplicate sample ID?					
Volume Removed (l)	2			Triplicate sample ID?					
Discharge Rate (l/m)	0.09			Rinsate sample ID?					

Pump Removal

Time of removal	14:15	WL m(post-removal)	17.45	Bore Depth at end (m)	27.92
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Pump Settings

Fill / Discharge used	9/11	CPM	3	Air/Gas Pressure (kPa)	50psi
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Comments

Sample taken

no odour, clear

Blind taken here.

Field Parameters are considered stable when within the EPA limits for 3 consecutive measurements

Time	62 = vol required for 3V method (L)			+/- 3%	+/- 0.05 pH	+/- 10%	+/- 10mV	+/- 10%	Comments (colour, turbidity, odours, other)
	Cumulative Volume Removed (l)	Water Level (m below MP)	Stability of Field Params	Specific Conductance EC (uS/cm) @25°C	pH	Temp. (°C)	Redox ORP (mV)	DO (mg/L)	
13:53	0.5	17.35	Keep purging	2045	5.74	13.00	61.6	5.17	Clear, no odour
13:56	0.9	17.39	Keep purging	2049	5.63	13.97	51.4	4.64	Clear, no odour
13:59	1.2	17.39	Keep purging	2048	5.59	14.17	50.1	4.52	Clear, no odour
14:02	1.5	17.42	Keep purging	2046	5.56	14.33	45.0	4.48	Clear, no odour
14:05	2	17.43	OK to sample	2041	5.60	14.21	52.7	4.51	Clear, no odour



TS Groundwater sampling field sheet - Env Monitoring

Bore ID No	BH2	Project Name	Hepburn land fills	Sampling Staff	PR & AM
Project Area:		Client		WQ. Meter Model	Hanna
Date	1/08/2024	Project No		WQ. Meter Serial #	7490039101

Expected Bore Details

Internal Diameter (mm)		Easting		Total Depth (m)		Screen Depth From (m)	
Drop Tube already in bore? (Y/N)	N	Northing		Water Level (m)		Screen Depth To (m)	
Drop Tube Length (m)	N/A	Zone		Set Pump inlet at (m)		Set Pump at (m)	
Additional Information							

Bore Field Measurements

Time of SWL	10:35	Total Depth (m)	20.10	Mid-screen accessible?	Clear	Depth pump set at (m)	18.00
Static Water Level (m)	7.54	Bore Diam (mm)	50	Open Screen Length(m)	0.00	Depth of pump inlet (m)	#VALUE!

Well Purging Details				Sampling Details				Sample Bottles Required			
Purge Method	LF	Pump Type	MP	Sampling Method	LF	Bottle Type	Quantity	Bottle Type	Quantity	Bottle Type	Quantity
Time Pump in	10:50	Pump in' WL	7.49	Time Started	11:23	WL m (start)	7.82				
Time Started	10:59	WL m (start)	7.49	Time Stopped	11:35	WL m (end)	7.82				
Time Stopped	11:23	WL m (end)	7.72	Duplicate sample ID?							
Volume Removed (l)	1.2			Triplicate sample ID?							
Discharge Rate (l/m)	#VALUE!			Rinsate sample ID?							

Pump Removal

Time of removal	11:47	WL m(post-removal)	7.89	Bore Depth at end (m)	20.10
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Pump Settings

Fill / Discharge used	9/11	CPM	3	Air/Gas Pressure (kPa)	35 Psi
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Comments

sample taken

Little bit turbid, no odour.

Rinsate and Split taken/done here.

Field Parameters are considered stable when within the EPA limits for 3 consecutive measurements

Time	Cumulative Volume Removed (l)	Water Level (m below MP)	Stability of Field Params	74	+/- 3%	+/- 0.05 pH	+/- 10%	+/- 10mV	+/- 10%	Comments (colour, turbidity, odours, other)
				= vol required for 3V method (L)	Specific Conductance EC (uS/cm) @25°C	pH	Temp. (°C)	Redox ORP (mV)	DO (mg/L)	
11:11	0.1	7.54	Keep purging	2793	6.16	12.50	40.0	4.98		Little bit turbid, no odour.
11:14	0.5	7.67	Keep purging	2962	6.15	13.09	39.2	4.66		Little bit turbid, no odour.
11:17	0.7	7.67	Keep purging	2972	6.15	13.22	39.5	4.62		Little bit turbid, no odour.
11:20	1	7.70	OK to sample	2963	6.17	13.04	42.2	4.65		Little bit turbid, no odour.
11:23	1.2	7.72	OK to sample	2962	6.18	12.72	43.8	4.67		Little bit turbid, no odour.

Notes: All bore measurements are referenced to the marked measurement point. All Coordinates in GDA94.



TS Groundwater sampling field sheet - Env Monitoring

Bore ID No	BH3	Project Name	Hepburn Landfills	Sampling Staff	PR & AM
Project Area:		Client		WQ. Meter Model	Hanna
Date	1/08/2024	Project No		WQ. Meter Serial #	7490039101

Expected Bore Details

Internal Diameter (mm)		Easting		Total Depth (m)		Screen Depth From (m)	
Drop Tube already in bore? (Y/N)	n/A	Northing		Water Level (m)		Screen Depth To (m)	
Drop Tube Length (m)	n/a	Zone		Set Pump inlet at (m)		Set Pump at (m)	
Additional Information							

Bore Field Measurements

Time of SWL	12:16	Total Depth (m)	18.30	Mid-screen accessible?	Clear	Depth pump set at (m)	15.00
Static Water Level (m)	3.81	Bore Diam (mm)	50	Open Screen Length(m)	0.00	Depth of pump inlet (m)	#VALUE!

Well Purging Details				Sampling Details				Sample Bottles Required			
Purge Method	LF	Pump Type	MP	Sampling Method	LF	Bottle Type	Quantity	Bottle Type	Quantity	Bottle Type	Quantity
Time Pump in	12:33	Pump in' WL	15.00	Time Started	12:51	WL m (start)	3.83				
Time Started	12:35	WL m (start)	3.80	Time Stopped	12:54	WL m (end)	3.83				
Time Stopped	12:51	WL m (end)	3.83	Duplicate sample ID?							
Volume Removed (l)	1.8			Triplicate sample ID?							
Discharge Rate (l/m)	0.11			Rinsate sample ID?							

Pump Removal

Time of removal	13:03	WL m(post-removal)	3.85	Bore Depth at end (m)	18.30
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Pump Settings

Fill / Discharge used	9/11	CPM	3	Air/Gas Pressure (kPa)	35 Psi
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Comments: Sample taken
little bit turbid, no odour.
parameters stable.

Field Parameters are considered stable when within the EPA limits for 3 consecutive measurements

Time	85 Cumulative Volume Removed (l)	= vol required for 3V method (L)	Water Level (m below MP)	Stability of Field Params	+/- 3% Specific Conductance EC (uS/cm) @25°C	+/- 0.05 pH pH	+/- 10% Temp. (°C)	+/- 10mV Redox ORP (mV)	+/- 10% DO (mg/L)	Comments (colour, turbidity, odours, other)
12:44	0.5	3.82	Keep purging	3193	6.03	12.32	42.3	4.83	little bit turbid, no odour.	
12:47	1	3.83	OK to sample	3198	6.02	12.35	40.8	4.76	little bit turbid, no odour.	
12:51	1.8	3.83	OK to sample	3198	6.01	12.46	40.3	4.69	little bit turbid, no odour.	

Notes: All bore measurements are referenced to the marked measurement point. All Coordinates in GDA94.



TS Groundwater sampling field sheet - Env Monitoring

Bore ID No <u>BH4</u>	Project Name <u>Hepburn Landfills</u>	Sampling Staff <u>PR</u>	
Project Area:	Client	WQ. Meter Model <u>YSI</u>	
Date <u>1/08/2024</u>	Project No	WQ. Meter Serial # <u>23G103456</u>	

Expected Bore Details

Internal Diameter (mm)	Easting	Total Depth (m)	Screen Depth From (m)
Drop Tube already in bore? (Y/N)	Northing	Water Level (m)	Screen Depth To (m)
Drop Tube Length (m)	Zone	Set Pump inlet at (m)	Set Pump at (m)

Additional Information _____

Bore Field Measurements

Time of SWL	13:20	Total Depth (m)	37.00	Mid-screen accessible?	Clear	Depth pump set at (m)	36.00
Static Water Level (m)	25.80	Bore Diam (mm)		Open Screen Length(m)	0.00	Depth of pump inlet (m)	36.00

Well Purging Details

Sampling Details

Sample Bottles Required

Purge Method	LF	Pump Type	MP	Sampling Method	LF	Bottle Type	Quantity	Bottle Type	Quantity
Time Pump in	13:30	Pump in' WL	25.75	Time Started	14:30	WL m (start)	25.83		
Time Started	13:36	WL m (start)	25.75	Time Stopped	14:40	WL m (end)	25.83		
Time Stopped	14:30	WL m (end)	25.87	Duplicate sample ID?					
Volume Removed (l)	2.5		TriPLICATE sample ID?						
Discharge Rate (l/m)	0.05		Rinsate sample ID?						

Pump Removal

Time of removal	WL m(post-removal)	Bore Depth at end (m)
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Pump Settings

Fill / Discharge used	10/5	CPM	Air/Gas Pressure (kPa)	65
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Comments All times EST

cloudy no odour, light grey

Field Parameters are considered stable when within the EPA limits for 3 consecutive measurements

Time	Cumulative Volume Removed (l)	Water Level (m below MP)	Stability of Field Params	0	+/- 3%	+/- 0.05 pH	+/- 10%	+/- 10mV	+/- 10%	Comments (colour, turbidity, odours, other)
				= vol required for 3V method (L)	Specific Conductance EC (uS/cm) @25°C	pH	Temp. (°C)	Redox ORP (mV)	DO (mg/L)	
13:36										start at 45 psi 10/5
13:39		25.78								
13:42		25.78								
13:45		25.80								
13:48		25.80								
13:51		25.80								
13:54		25.81								
13:57		25.79								increased psi to 65
14:00		25.79								
14:03		25.79								
14:06		25.79								water level stable
14:09		25.790								
14:12		25.790								
14:15	0.1	25.80	#DIV/0!	4011	5.46	13.70	25.6	4.40		cloudy, no odour
14:18	0.3	25.81	#DIV/0!	4276	5.40	14.50	11.9	2.04		
14:21	0.7	25.83	Keep purging	4278	5.40	15.00	2.0	0.54		
14:24	1.2	25.84	Keep purging	4330	5.42	14.60	-3.5	0.44		
14:27	1.8	25.84	Keep purging	4332	5.42	14.50	-4.2	0.45		
14:30	2.5	25.87	OK to sample	4339	5.42	14.40	-5.5	0.43		sample taken



**INSTRUMENTATION -
INTERMEDIATE VERIFICATION
AND CALIBRATION**

Serial no.: 236103456 Centre: Kellong
 Model no.: YSI PRO Quora
 Parameter: _____
 (EC, DO, TU, pH, Temperature, Redox)

Date of verification /calibration	Results						Comments	Staff initials
	Expected	Observed	Adjusted	Batch no.	Slope mV	Asy mV		
30/7/24	1413	1393	Yes	424461			EC	PR
30/7/24	4.01	3.97	Yes	013749			pH4	
30/7/24	7	7.01	Yes	013749			pH7	
30/7/24	10	9.99	Yes	420557			pH10	
30/7/24	228	252	Yes	420086 42087			Redox	
30/7/24	100	98.3	NO	06			DO	PR
31/7/24	1413	1421	Yes	424461			EC	PR
31/7/24	4.01	4.13	Yes	013749			pH4	
31/7/24	7	7.10	Yes	013749			pH7	
31/7/24	228	254	Yes	420087 42086			Redox	
31/7/24	100	99.8	NO	06			DO	PR
1/8/24	1413	1406	Yes	424461			EC	PR
1/8/24	4.01	4.02	Yes	013749			pH4	
1/8/24	7	7.10	Yes	013749			pH7	
1/8/24	228	250	Yes	42087/6			Redox	
1/8/24	100	98.9	NO				DO	PR
/ /								
/ /								
/ /								
/ /								
/ /								
/ /								
/ /								

*If standards are not used to calibrate instrument - explanation required under comments
 Water quality measurements where Q = 10 shall meet the following calibration limits

EC	pH	Turbidity	DO	Temperature
Standard +/- 5%	Standard +/- 0.1	Standard +/- 3%	< +/- 2% FS (0-20mg/l)	+/- 0.2°C (When a temperature stabilised environment can be created)
+/- 10 µS/cm < 1,000	4 3.9 - 4.1	0 - 10 = 0.10 NTU		
+/- 100 µS/cm > 1,000	7 6.9 - 7.1	0 - 100 = 1.00 NTU	< +/- 0.4 mg/l (0-20mg/l)	
	10 9.9 - 10.1	0 - 1000 = 10.00 NTU		

WQ Instruments that require continual calibration from initial values outside the above tolerance ranges using the specified solutions will need to be returned to the manufacturer for assessment or repair.

APPENDIX C – LABORATORY RESULTS

August 2024 Monitoring Event - Daylesford Landfill - Primary Results

			Field ID	BH1	BH2	BH3	BH4	LP1		
			Location Code	BH1	BH2	BH3	BH4	LP1		
			Date	01 Aug 2024	01 Aug 2024	01 Aug 2024	01 Aug 2024	01 Aug 2024		
			Lab Report Number	1124550	1124550	1124550	1124550	1124550		
	Unit	EQL	ANZECC 2000 FW 95%	ANZECC 2000 Irrigation	ANZECC 2000 Livestock					
EC										
Electrical conductivity *(lab)	uS/cm	10				2,200	3,000	3,300	5,000	670
IVA										
Acetic Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Heptanoic Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Isobutyric Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Isocaproic Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Isovaleric Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Valeric Acid	µg/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Volatile Fatty Acids (as Acetic Acid)	ug/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
pH										
pH (Lab)	-	0.1				6.3	6.7	6.7	5.9	8.7
Solids										
TDS	mg/L	10			2,000	1,200	1,700	1,900	2,800	890
Alkalinity										
Alkalinity (Carbonate as CaCO3)	mg/L	10				<10	<10	<10	<10	23
Alkalinity (Bicarbonate as CaCO3)	mg/L	20				82	320	230	94	250
Alkalinity (Hydroxide) as CaCO3	mg/L	20				<20	<20	<20	<20	<20
Alkalinity (total) as CaCO3	mg/L	20				82	320	230	94	280
Major Ions										
Calcium	mg/L	0.5			1,000	25	83	130	28	33
Chloride	mg/L	1		175		490	570	630	940	46
Magnesium	mg/L	0.5				120	190	180	290	29
Potassium	mg/L	0.5				1.7	1.4	2.1	1.9	26
Sodium	mg/L	0.5		115		150	270	290	360	38
Nitrogen Forms										
Ammonia as N	mg/L	0.01				0.04	0.02	0.28	0.67	2.9
Nitrate (as N)	mg/L	0.02	7.2			<0.02	<0.02	0.03	<0.02	0.73
Kjeldahl Nitrogen Total	mg/L	0.2				<0.2	0.5	0.4	0.8	5.5
Nitrogen (Organic)	mg/L	0.2				<0.2	0.48	<0.2	<0.2	2.6
Inorganics										
COD	mg/L	25				<25	<25	28	52	71
Sulphate	mg/L	5				240	580	690	1,100	30
TOC	mg/L	5				<5	<5	<5	<5	27
Metals										
Chromium (III+VI)	mg/L	0.001		0.1	1	<0.001	<0.001	<0.001	0.002	<0.001
Iron	mg/L	0.05				68	8.8	37	220	0.37
Manganese	mg/L	0.005	1.9	0.2		6.2	1.4	2.0	5.8	0.053
Herbicides										
2,4,5-Trichlorophenoxy-propanoic acid	ug/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Other										
Butyric Acid	ug/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000
Hexanoic Acid	ug/L	5,000				<5,000	<5,000	<5,000	<5,000	<5,000

Environmental Standards

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 FW 95%

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Irrigation

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Livestock

August 2024 Monitoring Event - Daylesford Landfill - Primary Results

				Field ID	BH1	BH2
				Location Code	BH1	BH2
				Date	01 Aug 2024	01 Aug 2024
				Lab Report Number	1124550	1124550
	Unit	EQL	ANZECC 2000 FW 95%	ANZECC 2000 Irrigation	ANZECC 2000 Livestock	
EC						
Electrical conductivity *(lab)	uS/cm	10				2,200 3,000
NA						
Acetic Acid	µg/L	5,000				<5,000 <5,000
Heptanoic Acid	µg/L	5,000				<5,000 <5,000
Isobutyric Acid	µg/L	5,000				<5,000 <5,000
Isocaproic Acid	µg/L	5,000				<5,000 <5,000
Isovaleric Acid	µg/L	5,000				<5,000 <5,000
Valeric Acid	µg/L	5,000				<5,000 <5,000
Volatile Fatty Acids (as Acetic Acid)	ug/L	5,000				<5,000 <5,000
pH						
pH (Lab)	-	0.1				6.3 6.7
Solids						
TDS	mg/L	10			2,000	1,200 1,700
Alkalinity						
Alkalinity (Carbonate as CaCO3)	mg/L	10				<10 <10
Alkalinity (Bicarbonate as CaCO3)	mg/L	20				82 320
Alkalinity (Hydroxide) as CaCO3	mg/L	20				<20 <20
Alkalinity (total) as CaCO3	mg/L	20				82 320
Major Ions						
Calcium	mg/L	0.5			1,000	25 83
Chloride	mg/L	1		175		490 570
Magnesium	mg/L	0.5				120 190
Potassium	mg/L	0.5				1.7 1.4
Sodium	mg/L	0.5		115		150 270
Nitrogen Forms						
Ammonia as N	mg/L	0.01				0.04 0.02
Nitrate (as N)	mg/L	0.02	7.2			<0.02 <0.02
Kjeldahl Nitrogen Total	mg/L	0.2				<0.2 0.5
Nitrogen (Organic)	mg/L	0.2				<0.2 0.48
Inorganics						
COD	mg/L	25				<25 <25
Sulphate	mg/L	5				240 580
TOC	mg/L	5				<5 <5
Metals						
Chromium (III+VI)	mg/L	0.001		0.1	1	<0.001 <0.001
Iron	mg/L	0.05				68 8.8
Manganese	mg/L	0.005	1.9	0.2		6.2 1.4
Herbicides						
2,4,5-Trichlorophenoxy-propanoic acid	ug/L	5,000				<5,000 <5,000
Other						
Butyric Acid	ug/L	5,000				<5,000 <5,000
Hexanoic Acid	ug/L	5,000				<5,000 <5,000

Environmental Standards

Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 FW 95%
 Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Irrigation
 Australian and New Zealand Environment and Conservation Council, October 2000, ANZECC 2000 Livestock

APPENDIX D - QA QC RESULTS

	Unit	EQL	Field ID	BH2	DAYLESFORD SPLIT	RPD	BH1	BLIND	RPD
			Matrix Type	Water	Water		Water	Water	
			Date	01 Aug 2024	01 Aug 2024		01 Aug 2024	01 Aug 2024	
			Lab Report Number	1124550	EM2413118		1124550	1124550	
EC									
Electrical conductivity *(lab)	uS/cm	1	3,000	2,750	9	2,200	2,200	0	
NA									
Acetic Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Heptanoic Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Isobutyric Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Isocaproic Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Isovaleric Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Valeric Acid	µg/L	5,000	<5,000			<5,000	<5,000	0	
Volatile Fatty Acids (as Acetic Acid)	ug/L	5,000	<5,000	52,000	165	<5,000	<5,000	0	
pH									
pH (Lab)	-	0.01	6.7	6.59	2	6.3	6.1	3	
Solids									
TDS	mg/L	10	1,700	2,060	19	1,200	1,100	9	
Alkalinity									
Alkalinity (Carbonate as CaCO3)	mg/L	1	<10	<1	0	<10	<10	0	
Alkalinity (Bicarbonate as CaCO3)	mg/L	1	320	327	2	82	87	6	
Alkalinity (Hydroxide) as CaCO3	mg/L	1	<20	<1	0	<20	<20	0	
Alkalinity (total) as CaCO3	mg/L	1	320	327	2	82	87	6	
Major Ions									
Calcium	mg/L	0.5	83	87	5	25	25	0	
Chloride	mg/L	1	570	588	3	490	500	2	
Magnesium	mg/L	0.5	190	206	8	120	120	0	
Potassium	mg/L	0.5	1.4	2	35	1.7	1.7	0	
Sodium	mg/L	0.5	270	276	2	150	150	0	
Cations Total	meq/L	0.01		33.4					
Anions Total	meq/L	0.01		34.9					
Ionic Balance	%	0.01		2.21					
Nitrogen Forms									
Ammonia as N	mg/L	0.01	0.02	0.02	0	0.04	0.04	0	
Nitrate (as N)	mg/L	0.01	<0.02	0.01	0	<0.02	<0.02	0	
Nitrite (as N)	mg/L	0.01		<0.01					
Nitrite + Nitrate as N	mg/L	0.01		0.01					
Kjeldahl Nitrogen Total	mg/L	0.1	0.5	<0.1	133	<0.2	<0.2	0	
Nitrogen (Organic)	mg/L	0.2	0.48			<0.2	<0.2	0	
Inorganics									
COD	mg/L	10	<25	<10	0	<25	<25	0	
Sulphate	mg/L	5	580	564	3	240	250	4	
TOC	mg/L	1	<5	38	153	<5	15	100	
Metals									
Chromium (III+VI)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	
Iron	mg/L	0.05	8.8	2.88	101	68	70	3	
Manganese	mg/L	0.005	1.4			6.2	6.4	3	
Zinc (filtered)	mg/L	0.005		0.072					
Herbicides									
2,4,5-Trichlorophenoxy-propanoic acid	ug/L	5,000	<5,000			<5,000	<5,000	0	
Other									
Butyric Acid	ug/L	5,000	<5,000			<5,000	<5,000	0	
Hexanoic Acid	ug/L	5,000	<5,000			<5,000	<5,000	0	

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

AUGUST 2024 EVENT MONITORING REPORT – DAYLESFORD LANDFILL

			Matrix Type
			Date
			Lab Report Number
	Unit	EQL	Water
EC			
Electrical conductivity *(lab)	uS/cm	10	<10
NA			
Acetic Acid	µg/L	5,000	<5,000
Heptanoic Acid	µg/L	5,000	<5,000
Isobutyric Acid	µg/L	5,000	<5,000
Isocaproic Acid	µg/L	5,000	<5,000
Isovaleric Acid	µg/L	5,000	<5,000
Valeric Acid	µg/L	5,000	<5,000
Volatile Fatty Acids (as Acetic Acid)	ug/L	5,000	<5,000
pH			
pH (Lab)	-	0.1	5.3
Solids			
TDS	mg/L	10	<10
Alkalinity			
Alkalinity (Carbonate as CaCO ₃)	mg/L	10	<10
Alkalinity (Bicarbonate as CaCO ₃)	mg/L	20	<20
Alkalinity (Hydroxide) as CaCO ₃	mg/L	20	<20
Alkalinity (total) as CaCO ₃	mg/L	20	<20
Major Ions			
Calcium	mg/L	0.5	<0.5
Chloride	mg/L	1	<1
Magnesium	mg/L	0.5	<0.5
Potassium	mg/L	0.5	<0.5
Sodium	mg/L	0.5	<0.5
Nitrogen Forms			
Ammonia as N	mg/L	0.01	<0.01
Nitrate (as N)	mg/L	0.02	<0.02
Kjeldahl Nitrogen Total	mg/L	0.2	<0.2
Nitrogen (Organic)	mg/L	0.2	<0.2
Inorganics			
COD	mg/L	25	30
Sulphate	mg/L	5	<5
TOC	mg/L	5	<5
Metals			
Chromium (III+VI)	mg/L	0.001	<0.001
Iron	mg/L	0.05	0.58
Manganese	mg/L	0.005	0.053
Herbicides			
2,4,5-Trichlorophenoxy-propanoic acid	ug/L	5,000	<5,000
Other			
Butyric Acid	ug/L	5,000	<5,000
Hexanoic Acid	ug/L	5,000	<5,000

APPENDIX E - LABORATORY REPORTS



CHAIN OF CUSTODY

6 Monterey Road,
Dandenong South,
Vic 3175

Client: Ventia		Job Ref: Daylesford Landfill 1 of 1									
Contact Ventia: Tarin Cummings 0428091782		TESTS REQUIRED AS PER QUOTE # 230926VENVP									
Contact Eurofins: Savini Suduweli 03 385 645 051											
Email Results to: Tarin.cummings@ventia.com Ping.Yao@ventia.com Lucy.edwards@ventia.com Pandula.R@ventia.com Robert.callander@ventia.com											
Purchase Order Number: 4700979689											
Sample ID	Sample Description	No of Containers	Date Sampled	Time sampled	PH	EC	DO	TEMP	ORP	SWL	
BH1	Groundwater bore	4	1/8/24	1405	5.60	2041	4.51	14.21	52.7	17.43	
BH2	Groundwater bore	4	1/8/24	1123	6.18	2962	4.67	12.72	43.8	7.72	
BH3	Groundwater bore	4	1/8/24	1251	6.01	3198	4.69	12.46	40.3	3.83	
BH4	Groundwater bore	4	1/8/24	1430	5.42	4339	0.43	14.4	-5.5	25.87	
LP1	Leachate Pond	4	1/8/24	15:03	6.68	706	7.36	12.98	61.1	-	
RINSATE	Rinsate Blank	120 4	1/8/24	1200	_____						
Blind	Blind	4	1/8/24		_____						
Special Instructions:	Please email Invoices to Tania.Dahlin@ventia.com , Lucy.Edwards@ventia.com										
Relinquished By:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:				
	Ventia	1/8/24		Layla	Eurofins	2/8/24	11:00				

This form is for recording of sample data after prior consultation with an analyst regarding sampling procedures and does not over-ride pricing agreements, OHS requirements and our terms and conditions.

As an Occupational Health and Safety consideration, it is a requirement of Ecowise Environmental (Victoria), that all samples received be undamaged and prior advice given in writing of any potential health risks.

LAB USE ONLY

Sample conditions: Samples received undamaged [Yes/No]

Samples transported at appropriate temperatures [Yes/No]

Samples received within recommended holding times: [Yes/No]

1124550 .H.C 2/08/24.

ice 4.2°C



CHAIN OF CUSTODY



2-4 Westall Rd,
Springvale VIC 3171

COPY

Client:	Ventia					Job Ref:	Daylesford Landfill CoC 1 of 1							
Contact Ventia:	Tarin Cummings 0428091782					Please forward to ALS for analysis								
Contact ALS:	Graeme Jablonskas 03 8549 9609													
Email:	Tarin.cummings@ventia.com Ping.Yao@ventia.com Lucy.edwards@vventia.com Pandula.R@ventia.com Robert.callander@ventia.com													
Lab Quote #: EM23THISER0010														
Purchase Order Number: 4700979690														
Sample ID	Sample Description	No of Containers	Date Sampled	Time sampled	Matrix	PH	EC	DO	TEMP	ORP	SWL			
Daylesford SPLIT	Groundwater	4	1/8/24	1123		6.18	2962	4.67	12.72	43.8	7.72			
Special Instructions:	Please email Invoices to Tania.Dahlin@ventia.com , Lucy.Edwards@ventia.com													
Relinquished By:	Company:	Date:	Time:			Received By:	Company:			Date:	Time:			
	Ventia													
Relinquished By:	Company:	Date:	Time:			Received By:	Company:			Date:	Time:			
<small>This form is for recording of sample data after prior consultation with an analyst regarding sampling procedures and does not over-ride pricing agreements, OHS requirements and our terms and conditions.</small> <small>As an Occupational Health and Safety consideration, it is a requirement of Ecovise Environmental (Victoria), that all samples received be undamaged and prior advice given in writing of any potential health risks.</small>						LAB USE ONLY		<small>Sample conditions:</small> <small>Samples received undamaged [Yes/No]</small> <small>Samples adequately preserved [Yes/No]</small> <small>Samples within recommended holding times: [Yes/No]</small> <small>Samples transported at appropriate temperature [Yes/No]</small>		<small>Samples received undamaged [Yes/No]</small> <small>Samples adequately preserved [Yes/No]</small> <small>Samples within recommended holding times: [Yes/No]</small> <small>Samples transported at appropriate temperature [Yes/No]</small>				

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Ventia Utility Services P/L (Grovedale)
Contact name: Tarin Cummings
Project name: DAYLESFORD LANDFILL
Project ID: DAYLESFORD LANDFILL
Turnaround time: 5 Day
Date/Time received: Aug 2, 2024 11:00 AM
Eurofins reference: 1124550

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : +61 3 8564 5051 or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Tarin Cummings - Tarin.Cummings@ventia.com.au.

Note: A copy of these results will also be delivered to the general Ventia Utility Services P/L (Grovedale) email address.

Ventia Utility Services P/L (Grovedale)
 27 Essington St
 Grovedale
 VIC 3216



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: Tarin Cummings

Report 1124550-W
 Project name DAYLESFORD LANDFILL
 Project ID DAYLESFORD LANDFILL
 Received Date Aug 02, 2024

Client Sample ID			BH1	BH2	BH3	BH4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M24- Au0006634	M24- Au0006635	M24- Au0006636	M24- Au0006637
Date Sampled			Aug 01, 2024	Aug 01, 2024	Aug 01, 2024	Aug 01, 2024
Test/Reference	LOR	Unit				
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5
Ammonia (as N)						
Ammonia (as N)	0.01	mg/L	0.04	0.02	0.28	0.67
Chemical Oxygen Demand (COD)						
Chemical Oxygen Demand (COD)	25	mg/L	< 25	< 25	28	52
Chloride						
Chloride	1	mg/L	490	570	630	940
Conductivity (at 25 °C)						
Conductivity (at 25 °C)	10	uS/cm	2200	3000	3300	5000
Nitrate (as N)						
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	0.03	< 0.02
Organic Nitrogen (as N)*						
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	0.48	< 0.2	< 0.2
pH (at 25 °C)						
pH (at 25 °C)	0.1	pH Units	6.3	6.7	6.7	5.9
Sulphate (as SO4)						
Sulphate (as SO4)	5	mg/L	240	580	690	1100
Total Dissolved Solids Dried at 180 °C ± 2 °C						
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	1200	1700	1900	2800
Total Kjeldahl Nitrogen (as N)						
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	0.5	0.4	0.8
Total Organic Carbon						
Total Organic Carbon	5	mg/L	< 5	< 5	< 5	< 5
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	82	320	230	94
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	82	320	230	94
Heavy Metals						
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Iron	0.05	mg/L	68	8.8	37	220
Manganese	0.005	mg/L	6.2	1.4	2.0	5.8

Client Sample ID			BH1	BH2	BH3	BH4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M24- Au0006634	M24- Au0006635	M24- Au0006636	M24- Au0006637
Date Sampled			Aug 01, 2024	Aug 01, 2024	Aug 01, 2024	Aug 01, 2024
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	25	83	130	28
Magnesium	0.5	mg/L	120	190	180	290
Potassium	0.5	mg/L	1.7	1.4	2.1	1.9
Sodium	0.5	mg/L	150	270	290	360

Client Sample ID			LP1	RINSATE	BLIND
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M24- Au0006638	M24- Au0006639	M24- Au0006640
Date Sampled			Aug 01, 2024	Aug 01, 2024	Aug 01, 2024
Test/Reference	LOR	Unit			
Volatile Fatty Acids (VFA) by GC-MS					
Acetic Acid	5	mg/L	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5
Ammonia (as N)					
Ammonia (as N)	0.01	mg/L	2.9	< 0.01	0.04
Chemical Oxygen Demand (COD)					
Chemical Oxygen Demand (COD)	25	mg/L	71	30	< 25
Chloride					
Chloride	1	mg/L	46	< 1	500
Conductivity (at 25 °C)					
Conductivity (at 25 °C)	10	uS/cm	670	< 10	2200
Nitrate (as N)					
Nitrate (as N)	0.02	mg/L	0.73	< 0.02	< 0.02
Organic Nitrogen (as N)*					
Organic Nitrogen (as N)*	0.2	mg/L	2.6	< 0.2	< 0.2
pH (at 25 °C)					
pH (at 25 °C)	0.1	pH Units	8.7	5.3	6.1
Sulphate (as SO4)					
Sulphate (as SO4)	5	mg/L	30	< 5	250
Total Dissolved Solids Dried at 180 °C ± 2 °C					
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	890	< 10	1100
Total Kjeldahl Nitrogen (as N)					
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	5.5	< 0.2	< 0.2
Total Organic Carbon					
Total Organic Carbon	5	mg/L	27	< 5	15
Alkalinity (speciated)					
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	250	< 20	87
Carbonate Alkalinity (as CaCO3)	10	mg/L	23	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	280	< 20	87
Heavy Metals					
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Iron	0.05	mg/L	0.37	0.58	70
Manganese	0.005	mg/L	0.053	0.053	6.4
Alkali Metals					
Calcium	0.5	mg/L	33	< 0.5	25
Magnesium	0.5	mg/L	29	< 0.5	120
Potassium	0.5	mg/L	26	< 0.5	1.7
Sodium	0.5	mg/L	38	< 0.5	150

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Volatile Fatty Acids (VFA) by GC-MS - Method: LTM-ORG-2360 Determination of Volatile Fatty Acids in Water by GC-MS	Melbourne	Aug 05, 2024	28 Day
Chemical Oxygen Demand (COD) - Method: LTM-INO-4220 Determination of COD in Water	Melbourne	Aug 05, 2024	28 Days
Conductivity (at 25 °C) - Method: LTM-INO-4030 Conductivity	Melbourne	Aug 05, 2024	28 Days
Nitrate (as N) - Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser	Melbourne	Aug 05, 2024	28 Days
pH (at 25 °C) - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Aug 05, 2024	6 Hours
Total Organic Carbon - Method: LTM-INO-4060 Total Organic Carbon in water and soil	Melbourne	Aug 05, 2024	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 05, 2024	28 Days
Eurofins Suite B11C: Na/K/Ca/Mg - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 05, 2024	180 Days
Ammonia (as N) - Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser	Melbourne	Aug 05, 2024	28 Days
Organic Nitrogen (as N)* - Method: APHA 4500 Organic Nitrogen (N)	Melbourne	Aug 02, 2024	7 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Aug 05, 2024	28 Days
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Aug 05, 2024	28 Days
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Aug 05, 2024	28 Days
Alkalinity (speciated) - Method: LTM-INO-4250 Alkalinity by Electrometric Titration	Melbourne	Aug 05, 2024	14 Days
Total Dissolved Solids Dried at 180 °C ± 2 °C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	Aug 05, 2024	28 Days

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
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Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370

Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
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Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Ventia Utility Services P/L (Grovedale)
Address: 27 Essington St
Grovedale
VIC 3216

Project Name: DAYLESFORD LANDFILL
Project ID: DAYLESFORD LANDFILL

Order No.: 4700979689
Report #: 1124550
Phone: 03 5247 3710
Fax:

Received: Aug 2, 2024 11:00 AM
Due: Aug 9, 2024
Priority: 5 Day
Contact Name: Tarin Cummings

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chemical Oxygen Demand (COD)	Chromium	Conductivity (at 25 °C)	Iron	Manganese	Nitrate (as N)	pH (at 25 °C)	Total Organic Carbon	Organic Nitrogen Set (as N)	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
1	BH1	Aug 01, 2024	2:05PM	Water	M24-Au0006634	X	X	X	X	X	X	X	X	X	X	X	X	X
2	BH2	Aug 01, 2024	11:23AM	Water	M24-Au0006635	X	X	X	X	X	X	X	X	X	X	X	X	X
3	BH3	Aug 01, 2024	12:51PM	Water	M24-Au0006636	X	X	X	X	X	X	X	X	X	X	X	X	X
4	BH4	Aug 01, 2024	2:30PM	Water	M24-Au0006637	X	X	X	X	X	X	X	X	X	X	X	X	X
5	LP1	Aug 01, 2024	3:03PM	Water	M24-Au0006638	X	X	X	X	X	X	X	X	X	X	X	X	X
6	RINSATE	Aug 01, 2024	12:00PM	Water	M24-Au0006639	X	X	X	X	X	X	X	X	X	X	X	X	X
7	BLIND	Aug 01, 2024		Water	M24-Au0006640	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						7	7	7	7	7	7	7	7	7	7	7	7	7

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Chromium	mg/L	< 0.001			0.001	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Method Blank							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	mg/L	< 5			5	Pass	
Propionic acid	mg/L	< 5			5	Pass	
Isobutyric acid	mg/L	< 5			5	Pass	
Butyric acid	mg/L	< 5			5	Pass	
Isovaleric acid	mg/L	< 5			5	Pass	
Valeric acid	mg/L	< 5			5	Pass	
4-Methylvaleric acid	mg/L	< 5			5	Pass	
Hexanoic acid	mg/L	< 5			5	Pass	
Heptanoic acid	mg/L	< 5			5	Pass	
Total VFA as Acetic Acid Equivalents	mg/L	< 5			5	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO ₄)	mg/L	< 5			5	Pass	
Method Blank							
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Sulphate (as SO ₄)	mg/L	< 5			5	Pass	
Method Blank							
Heavy Metals							
Iron	mg/L	< 0.05			0.05	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Chloride	%	73			70-130	Pass	
Conductivity (at 25 °C)	%	107			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	98			70-130	Pass	
Total Organic Carbon	%	106			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
LCS - % Recovery								
Alkalinity (speciated)								
Carbonate Alkalinity (as CaCO ₃)	%	94			70-130	Pass		
Total Alkalinity (as CaCO ₃)	%	101			70-130	Pass		
LCS - % Recovery								
Heavy Metals								
Chromium	%	96			80-120	Pass		
Iron	%	100			80-120	Pass		
Manganese	%	97			80-120	Pass		
LCS - % Recovery								
Alkali Metals								
Calcium	%	94			80-120	Pass		
Magnesium	%	89			80-120	Pass		
Potassium	%	90			80-120	Pass		
Sodium	%	93			80-120	Pass		
LCS - % Recovery								
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	94			70-130	Pass		
LCS - % Recovery								
Volatile Fatty Acids (VFA) by GC-MS								
Acetic Acid	%	125			70-130	Pass		
Propionic acid	%	105			70-130	Pass		
Isobutyric acid	%	94			70-130	Pass		
Butyric acid	%	105			70-130	Pass		
Isovaleric acid	%	93			70-130	Pass		
Valeric acid	%	81			70-130	Pass		
4-Methylvaleric acid	%	100			70-130	Pass		
Hexanoic acid	%	99			70-130	Pass		
Heptanoic acid	%	113			70-130	Pass		
Total VFA as Acetic Acid Equivalents	%	100			70-130	Pass		
LCS - % Recovery								
Chemical Oxygen Demand (COD)	%	105			70-130	Pass		
Sulphate (as SO ₄)	%	101			70-130	Pass		
LCS - % Recovery								
Ammonia (as N)	%	92			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
				Result 1				
Chemical Oxygen Demand (COD)	M24-Au0005934	NCP	%	88		70-130	Pass	
Sulphate (as SO ₄)	M24-Au0006876	NCP	%	81		70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M24-Au0006699	NCP	%	89		70-130	Pass	
Total Organic Carbon	M24-Au0005934	NCP	%	111		70-130	Pass	
Spike - % Recovery								
Heavy Metals								
				Result 1				
Iron	M24-Au0011539	NCP	%	91		75-125	Pass	
Manganese	M24-Au0011539	NCP	%	91		75-125	Pass	
Spike - % Recovery								
Alkali Metals								
				Result 1				
Calcium	M24-Au0013667	NCP	%	91		75-125	Pass	
Magnesium	M24-Au0013667	NCP	%	92		75-125	Pass	
Potassium	M24-Au0013667	NCP	%	92		75-125	Pass	
Sodium	M24-Au0013667	NCP	%	92		75-125	Pass	
Spike - % Recovery								
				Result 1				
Nitrate (as N)	M24-Au0006637	CP	%	122		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	M24-Au0006638	CP	%	100			70-130	Pass	
Spike - % Recovery									
Volatile Fatty Acids (VFA) by GC-MS				Result 1					
Isobutyric acid	M24-Au0006640	CP	%	116			70-130	Pass	
Isovaleric acid	M24-Au0006640	CP	%	91			70-130	Pass	
Valeric acid	M24-Au0006640	CP	%	100			70-130	Pass	
4-Methylvaleric acid	M24-Au0006640	CP	%	115			70-130	Pass	
Hexanoic acid	M24-Au0006640	CP	%	101			70-130	Pass	
Heptanoic acid	M24-Au0006640	CP	%	117			70-130	Pass	
Total VFA as Acetic Acid Equivalents	M24-Au0006640	CP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Chromium	M24-Au0006640	CP	%	103			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chemical Oxygen Demand (COD)	M24-Au0005933	NCP	mg/L	< 250	< 250	<1	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	M24-Au0006634	CP	mg/L	1200	1000	18	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M24-Au0005941	NCP	mg/L	140	160	13	30%	Pass	
Total Organic Carbon	M24-Au0002043	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M24-Au0006875	NCP	mg/L	7.6	7.7	1.2	30%	Pass	
Magnesium	M24-Au0006875	NCP	mg/L	5.1	5.2	1.2	30%	Pass	
Potassium	M24-Au0006875	NCP	mg/L	1.0	1.1	2.2	30%	Pass	
Sodium	M24-Au0006875	NCP	mg/L	16	16	<1	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M24-Au0006637	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25 °C)	M24-Au0006638	CP	uS/cm	670	670	<1	30%	Pass	
pH (at 25 °C)	M24-Au0006638	CP	pH Units	8.7	8.7	pass	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M24-Au0006638	CP	mg/L	250	220	15	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M24-Au0006638	CP	mg/L	23	20	14	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M24-Au0006638	CP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M24-Au0006638	CP	mg/L	280	240	15	30%	Pass	

Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	M24-Au0006639	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Chloride	M24-Au0006639	CP	mg/L	< 1	< 1	<1	30%	Pass
Sulphate (as SO4)	M24-Au0006639	CP	mg/L	< 5	< 5	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Conductivity (at 25 °C)	M24-Au0006640	CP	uS/cm	2200	2200	1.6	30%	Pass
pH (at 25 °C)	M24-Au0006640	CP	pH Units	6.1	6.1	pass	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO3)	M24-Au0006640	CP	mg/L	87	84	3.5	30%	Pass
Carbonate Alkalinity (as CaCO3)	M24-Au0006640	CP	mg/L	< 10	< 10	<1	30%	Pass
Hydroxide Alkalinity (as CaCO3)	M24-Au0006640	CP	mg/L	< 20	< 20	<1	30%	Pass
Total Alkalinity (as CaCO3)	M24-Au0006640	CP	mg/L	87	84	3.5	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Heavy Metals				Result 1	Result 2	RPD		
Chromium	M24-Au0006640	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron	M24-Au0006640	CP	mg/L	70	69	2.0	30%	Pass
Manganese	M24-Au0006640	CP	mg/L	6.4	6.3	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Savini Suduweli	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Caitlin Breeze	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY

8

2-4 Westall Rd,
Springvale VIC 3171

Client: Ventia		Job Ref: Daylesford Landfill CoC 1 of 1									
Contact Ventia: Tarin Cummings 0428091782		Please forward to ALS for analysis									
Contact ALS: Graeme Jablonskas 03 8549 9609											
Email: Tarin.cummings@ventia.com Ping.Yao@ventia.com Lucy.edwards@ventia.com Pandula.R@ventia.com Robert.callander@ventia.com											
Lab Quote #: EM23THISER0010											
Purchase Order Number: 4700979690											
Sample ID	Sample Description	No of Containers	Date Sampled	Time sampled	Matrix	PH	EC	DO	TEMP	ORP	SWL
Daylesford SPLIT	Groundwater	4	1/8/24	1123		6.18	2962	4.67	12.72	43.8	7.72
Special Instructions: Please email Invoices to Tania.Dahlin@ventia.com , Lucy.Edwards@ventia.com											
Relinquished By:	Company:	Date:	Time:		Received By:	Company:		Date:	Time:		
	Ventia										
Relinquished By:	Company:	Date:	Time:		Received By:	Company:		Date:	Time:		
Ryan		31/08/24	3/08/24		RICHARD BAEZ	ALS		05/08/24	11:29		

Environmental Division
Melbourne
Work Order Reference
EM2413118

Telephone : - 61-3-8549 9600

This form is for recording of sample data after prior consultation with an analyst regarding sampling procedures and does not over-ride pricing agreements, OHS requirements and our terms and conditions.

As an Occupational Health and Safety consideration, it is a requirement of Ecovise Environmental (Victoria), that all samples received be undamaged and prior advice given in writing of any potential health risks.

LAB USE ONLY Sample conditions: Samples received undamaged [Yes/No]
 Samples adequately preserved [Yes/No]
 Samples within recommended holding times: [Yes/No]
 Samples transported at appropriate temperature [Yes/No]



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2413118**

Client	: VENTIA UTILITY SERVICES PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR TARIN CUMMINGS	Contact	: Graeme Jablonskas
Address	: 27 ESSINGTON STREET GROVEDALE VICTORIA, AUSTRALIA 3216	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tarin.cummings@ventia.com.au	E-mail	: graeme.jablonskas@alsglobal.com
Telephone	: +61 03 5249 3610	Telephone	: +6138549 9609
Facsimile	: +61 03 5221 9711	Facsimile	: +61-3-8549 9626
Project	: Daylesford Landfill COC 1 of 1	Page	: 1 of 3
Order number	: 4700979690	Quote number	: EM2023THISER0010 (EM23THISER0010 - SECONDARY SAMPLES ONLY)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: LANDFILL		
Sampler	: PR + AM		

Dates

Date Samples Received	: 05-Aug-2024 11:29	Issue Date	: 05-Aug-2024
Client Requested Due Date	: 12-Aug-2024	Scheduled Reporting Date	: 12-Aug-2024

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 7.0°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Melbourne, NATA accreditation no. 825, site no. 13778.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Dissolved Metals by ICP-MS - Suite A : EG020A-F		
DAYLESFORD SPLIT	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA005P pH (Auto Titrator)	WATER - EA010P Electrical Conductivity (Auto Titrator)	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EK058G Nitrate as N by Discrete Analyser	WATER - EK061G Total Kjeldahl Nitrogen as N (TKN) By Discrete	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP045 Volatile Acids as CH3COOH
EM2413118-001	01-Aug-2024 11:25	DAYLESFORD SPLIT	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EG020F Dissolved Metals by ICP/MS	WATER - EP026SP Chemical Oxygen Demand (COD)	WATER - NT-01 & 02 Ca, Mg, Na, K, Cl, SO4, Alkalinity	WATER - SAMP-02 Field Observations
EM2413118-001	01-Aug-2024 11:25	DAYLESFORD SPLIT	✓	✓	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✓ = Within holding time.

Method Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by Auto Titrator							
DAYLESFORD SPLIT	Clear Plastic Bottle - Natural	----	01-Aug-2024	05-Aug-2024	✖	----	----
EK057G: Nitrite as N by Discrete Analyser							
DAYLESFORD SPLIT	Clear Plastic Bottle - Natural	----	03-Aug-2024	05-Aug-2024	✖	----	----



Requested Deliverables

LUCY EDWARDS

- *AU Certificate of Analysis - NATA (COA)	Email	Lucy.Edwards@ventia.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Lucy.Edwards@ventia.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Lucy.Edwards@ventia.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Lucy.Edwards@ventia.com
- Chain of Custody (CoC) (COC)	Email	Lucy.Edwards@ventia.com
- EDI Format - ESDAT (ESDAT)	Email	Lucy.Edwards@ventia.com

Pandula R

- *AU Certificate of Analysis - NATA (COA)	Email	pandula.r@ventia.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pandula.r@ventia.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pandula.r@ventia.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pandula.r@ventia.com
- Chain of Custody (CoC) (COC)	Email	pandula.r@ventia.com
- EDI Format - ESDAT (ESDAT)	Email	pandula.r@ventia.com

Ping Yao

- *AU Certificate of Analysis - NATA (COA)	Email	ping.yao@ventia.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ping.yao@ventia.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ping.yao@ventia.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ping.yao@ventia.com
- Chain of Custody (CoC) (COC)	Email	ping.yao@ventia.com
- EDI Format - ESDAT (ESDAT)	Email	ping.yao@ventia.com

ROBERT CALLANDER

- *AU Certificate of Analysis - NATA (COA)	Email	robert.callander@ventia.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	robert.callander@ventia.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	robert.callander@ventia.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	robert.callander@ventia.com
- Chain of Custody (CoC) (COC)	Email	robert.callander@ventia.com
- EDI Format - ESDAT (ESDAT)	Email	robert.callander@ventia.com

TARIN CUMMINGS

- *AU Certificate of Analysis - NATA (COA)	Email	tarin.cummings@ventia.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	tarin.cummings@ventia.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tarin.cummings@ventia.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	tarin.cummings@ventia.com.au
- A4 - AU Tax Invoice (INV)	Email	tarin.cummings@ventia.com.au
- Chain of Custody (CoC) (COC)	Email	tarin.cummings@ventia.com.au
- EDI Format - ESDAT (ESDAT)	Email	tarin.cummings@ventia.com.au



CERTIFICATE OF ANALYSIS

Work Order : EM2413118
Client : VENTIA UTILITY SERVICES PTY LTD
Contact : MR TARIN CUMMINGS
Address : 27 ESSINGTON STREET
GROVEDALE VICTORIA, AUSTRALIA 3216
Telephone : +61 03 5249 3610
Project : Daylesford Landfill COC 1 of 1
Order number : 4700979690
C-O-C number : ----
Sampler : PR + AM
Site : LANDFILL
Quote number : EM23THISER0010 - SECONDARY SAMPLES ONLY
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 4
Laboratory : Environmental Division Melbourne
Contact : Graeme Jablonskas
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +6138549 9609
Date Samples Received : 05-Aug-2024 11:29
Date Analysis Commenced : 06-Aug-2024
Issue Date : 09-Aug-2024 17:11



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Dilani Fernando	Laboratory Coordinator	Melbourne External Subcontracting, Springvale, VIC
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO₂ and Fluoride to the Anions.
- Sampling conducted by Samplescience. Samplescience are not NATA accredited for conducting sampling and field tests.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Melbourne, NATA accreditation no. 825, site no. 13778.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		DAYLESFORD SPLIT	----	----	----	----
Sampling date / time		01-Aug-2024 11:25		----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2413118-001	-----	-----	-----	-----
				Result	---	---	---	---
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.59	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2750	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	2060	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	327	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	327	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	564	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	588	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	87	----	----	----	----
Magnesium	7439-95-4	1	mg/L	206	----	----	----	----
Sodium	7440-23-5	1	mg/L	276	----	----	----	----
Potassium	7440-09-7	1	mg/L	2	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.072	----	----	----	----
Iron	7439-89-6	0.05	mg/L	2.88	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.02	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	DAYLESFORD SPLIT	----	----	----	----
Sampling date / time			01-Aug-2024 11:25	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2413118-001	-----	-----	-----	-----
				Result	---	---	---	---
EK058G: Nitrate as N by Discrete Analyser - Continued								
Nitrate as N	14797-55-8	0.01	mg/L	0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	----	----	----	----
EN055: Ionic Balance								
∅ Total Anions	----	0.01	meq/L	34.9	----	----	----	----
∅ Total Cations	----	0.01	meq/L	33.4	----	----	----	----
∅ Ionic Balance	----	0.01	%	2.21	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	38	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)								
Chemical Oxygen Demand	----	10	mg/L	<10	----	----	----	----
EP045: Volatile Acids as CH3COOH								
Volatile Acids as Acetic Acid	----	5	mg/L	52	----	----	----	----
SAMP02: Observations (performed by external sampler)								
Electrical Conductivity (Non Compensated)	----	-	µS/cm	2962	----	----	----	----
Field pH	----	-	pH Unit	6.18	----	----	----	----
Dissolved Oxygen	----	-	% saturation	4.67	----	----	----	----
Redox Potential	----	-	mV	43.08	----	----	----	----
Temperature	----	-	°C	12.72	----	----	----	----
SAMP02: Observations (performed by external sampler)								
Standing Water Level	----	0.01	m	7.72	----	----	----	----

APPENDIX F - ALL HISTORICAL RECORDS



Daylesford Landfill Sampling



Project	Daylesford Landfill	Client	Hepburn Shire
Site	BH1	Description	FIELD READINGS
Bore Depth to TOC (m)	26.90		
AHD of top of Casing	NA		



Date	Time (est)	Pre-Purged WL (m from TOC)	Post-Purged WL (m from TOC)	Pump Method	Volume Pumped (litres)	pH	Electrical Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Temp (C)	Redox (mV)	Sample Taken (Y/N)	comments	Meter Serial No
29/10/2003	12:45	18.70		3 VOL	53	NA	NA	NA	NA	NA	Y		
25/02/2004	10:52	18.95		Low Flow		NA	NA	NA	NA	NA	Y		
23/06/2004	13:12	18.90		Low Flow		5.61	2650	NA	13.1	14	Y		
25/10/2004	12:54	18.61		Low Flow		5.79	1960		19.2		Y		
24/01/2005	14:00	18.56		BAILED		5.90	2220		19.6		Y		
15/04/2005	8:35	18.90		3 VOL	52	5.49	2230	3.90	15.1	18	Y		
1/08/2005	14:00	19.35		Low Flow		5.48	2280	4.50	15.1	-77	Y		
26/10/2005	12:10	19.99		3 VOL	44	5.60	2180	4.40	15.1	-180	Y		
30/01/2006	14:45	18.93		Low Flow		5.88	2190				Y		
27/04/2006	11:23	20.69		3 VOL	42	5.82	2280	0.19	15.4	-33	Y		
27/07/2006	12:25	20.02		3 VOL	44	5.80	2230	0.00	15.4	-28	Y	Ran dry/Recharged throughout pumping	
24/09/2006	11:01	20.61		3 VOL	43	5.72	2140	3.06	15.6	-50	Y		
23/01/2007	13:19	20.23		3 VOL	44	5.50	2430	0.00	15.8	-57	Y		
18/04/2007	13:17	20.80		3 VOL	39	6.10	2095	0.00	15.9	-339	Y		
23/07/2007	15:10	21.89		3 VOL	33	5.68	1821	0.00	10.5	-396	Y		
23/10/2007	12:50	21.65		3 VOL	33	5.71	1890	0.00	15.5	-60	Y		W101047
23/01/2008	13:23	21.95		3 VOL	34	5.80	1880	0.00	17.9	-83	Y		W1674089
21/04/2008	13:38	22.38		3 VOL	32	5.90	1815	0.00	18.0	-348	Y		W101047
21/07/2008	12:40	22.79		BAILED		6.02	1710	2.93	13.0	-37	Y		W101047
20/10/2008	14:00	22.59		BAILED		5.53	2050	0.55	17.4	-107	Y		W101047
29/01/2009	8:30	22.79		BAILED		6.30	1728	0.05	17.9	-177	Y		W1674089
21/04/2009	12:50	22.98		BAILED		5.60	2005	2.30	15.6	-146	Y		W1674089
27/07/2009	14:20	23.48		BAILED		5.60	2033	1.10	10.2	-359	Y		W1674089
28/10/2009	12:00	22.94		BAILED		5.60	1614	2.90	16.7	-381	Y		W1674089
25/01/2010											NOT SAMPLED	Tubing stuck down bore could not retrieve	
1/04/2010											NOT SAMPLED		
22/07/2010	14:00	23.73		BAILED		6.10	1940	0.90	11.4	-416	Y	Tubing retrieved	W1674089
3/11/2010	11:15	20.21		BAILED		6.10	1960	2.20	15.1	NA	Y		W1674089
19/01/2011	10:30	18.59		BAILED		6.70	1560	1.90	16.2	-216	Y		W492
18/04/2011	12:15	18.55		BAILED		6.70	1650	1.80	16.5	-153	Y		W492
28/07/2011	14:00	18.44		BAILED		5.90	2542	3.90	14.2	114	Y		W492
17/10/2011	8:40	17.98		BAILED		6.10	2555	3.80	14.8	198	Y		W492
18/01/2012	10:15	18.10		BAILED		5.80	1870	3.10	15.9	197	Y		W492
23/04/2012	11:45	18.54		BAILED		6.00	1773	2.40	14.3	197	Y		W492
9/08/2012	10:50	18.14		BAILED		5.90	2130	1.00	13.4	146	Y		W492
29/11/2012	9:50	17.35		BAILED		6.00	2145	1.60	16.4	-20	Y		W492
26/02/2013	11:05	18.10		BAILED		5.70	1943	1.50	15.9	-65	Y		W492
15/05/2013	11:35	18.72		BAILED		5.80	1839	2.20	14.1	173	Y		W492
27/08/2013	11:30	18.20		BAILED		5.60	2055	2.60	15.0	55	Y		W492
25/11/2013	11:10	17.47		BAILED		5.80	1840	1.20	15.5	-295	Y	Sulphur smell	W492
26/02/2014	10:40	18.04		3 VOL	45	5.80	2001	0.10	16.1	19	Y		W492
27/05/2014	10:40	18.54		BAILED		5.80	1872	1.40	14.7	56	Y		W492
25/08/2014	12:25	17.91	17.68	Low Flow	10.4	6.03	1991	0.30	14.2	26	Y		W492
25/11/2014	11:05	17.89	17.91	Low Flow	5.7	6.10	1995	2.35	15.1	174	Y	Grey, moderate turbidity, no odour.	W492
24/02/2015	11:20	18.51	18.57	Low Flow	5.7	5.80	1829	1.40	15.6	189	Y	Started grey and ran clear at 3rd measurement	W492
25/08/2015	10:51	19.72	19.99	Low Flow	5.3	5.80	2261	0.26	13.9	220	Y	Clear, no odour.	W395398
22/02/2016	10:40	20.37	20.51	Low Flow	4.5	5.50	2270	0.48	16.4	178	Y	Clear, no odour.	W492
17/01/2017	7:20	16.87	16.98	Low Flow	5.0	5.60	1828	1.20	16.3	223	Y	Clear, no odour.	06G1861
22/03/2017	8:40	17.43	18.24	Low Flow	10.0	5.70	1851	1.60	16.5	198	Y	Clear, no odour.	W10110383
30/08/2017	9:35	17.97	18.45	Low Flow	8.2	5.90	2000	0.60	13.6	246	Y	Clear, no odour.	06G1861 AM
22/02/2018	9:10	18.17	18.42	Low Flow	5.2	5.60	1772	0.30	16.6	77	Y	Clear, no odour.	06G1861 AM
31/07/2018	9:00	19.26	19.66	Low Flow	8.0	7.10	1979	0.70	11.3	-121	Y	Clear, no odour.	06G1861 AM
27/02/2019	14:00	19.43	19.98	Low Flow	5.6	5.48	1991	0.30	20.1	28	Y	Slight grey turbidity nil odour	09L100298
21/08/2019	13:32	18.98	19.01	Low Flow	4.3	5.62	2159	0.30	14.0	70	Y	Turbid cloudy white grey	09L100298
13/02/2020	15:00	18.91	19.3	Low Flow	6.9	5.52	2026	0.44	16.6	62	Y	Slight grey turbidity slight odour	09L100298
21/08/2020	10:30	19.42	19.48	Low Flow	5.3	5.62	2077	0.50	12.8	28	Y	Slight grey turbid slight odour	09L100298
25/02/2021	11:35	18.38	18.57	Low Flow	8.6	5.48	1954	0.51	16.2	73	Y	Clear, no odour.	09L100298
16/09/2021	14:08	17.20	17.46	Low Flow	3.3	5.68	2127	0.21	15.1	64	Y	Clear, nil odour.	09L100298
4/03/2022	8:25	17.20	17.53	Low Flow	3.6	5.50	2061	0.21	16.6	43	Y	Clear, nil odour.	09L100298
30/08/2022	13:11	16.64	16.86	Low Flow	3.7	5.69	2016	0.31	12.4	49	Y	Slight light grey turbidity nil odour	09L100298
16/02/2023	9:02	14.15	14.34	Low Flow	3.3	5.72	2189	0.34	15.2	77	Y	Slight light grey turbidity nil odour	050710
1/08/2024	14:05	17.19	17.43	Low Flow	2.0	5.60	2041	4.51	14.2	53	Y	Clear, no odour	7490039101

Project	Daylesford Landfill	Client	Hepburn Shire
Site	BH2	Description	FIELD READINGS
Bore Depth to TOC (m)	20.75		
AHD of top of Casing	NA		



Date	Time (est)	Pre-Purged WL (m from TOC)	Post-Purged WL (m from TOC)	Pump Method	Volume Pumped (litres)	pH	Electrical Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Temp (C)	Redox (mV)	Sample Taken (Y/N)	comments	Meter Serial No
29/10/2003	11:10	8.83		3 VOL	72	NA	NA	NA	NA	NA	Y		
25/02/2004	12:40	9.45		Low Flow		NA	NA	NA	NA	NA	Y		
23/06/2004	15:00	10.00		3 VOL	68	6.12	3730	0.22	13.7	-20	Y		
25/10/2004	13:26	8.66		Low Flow		6.03	2940	0.39	14.6	6	Y		
24/01/2005	12:45	9.04		BAILED		6.00	3110		15.1		Y		
15/04/2005	10:22	9.27		3 VOL	71	6.03	3210	3.82	14.4	-217	Y		
1/08/2005	14:25	9.95		Low Flow		6.07	3300	4.00	14.5	-163	Y		
26/10/2005	13:30	8.67		3 VOL	79	6.00	3310	5.20	14.6	-254	Y		
30/01/2006	12:15	9.53		Low Flow		6.25	3480		15.0		Y	Grey and cloudy water	
27/04/2006	12:07	10.14		3 VOL	70	6.17	3410	0.00	14.5	-188	Y	Grey and cloudy water	
27/07/2006	10:10	10.82		3 VOL	65	6.15	3110	0.00	14.5	-68	Y	Grey and cloudy water	
25/10/2006	9:35	11.22		3 VOL	57	6.15	3080	0.00	14.7	-101	Y	Grey and cloudy water	
23/01/2007	11:52	11.51		3 VOL	57	6.17	3590	0.00	14.9	-111	Y	Grey and cloudy water	
18/04/2007	11:37	12.12		3 VOL	54	6.55	2932	0.00	15.3	-98	Y	Grey and cloudy water	
23/07/2007	14:00	12.43		3 VOL	54	6.04	2631	0.00	14.3	-392	Y	Grey and cloudy water	
22/10/2007	11:45	11.97		3 VOL	55	6.12	3350	0.00	14.7	-76	Y	Grey and cloudy water	W101047
23/01/2008	13:55	12.40		3 VOL	51	6.19	4360	0.00	14.8	-84	Y	Grey and cloudy water	W1674089
21/04/2008	12:21	12.89		3 VOL	50	6.15	2451	0.00	15.3	-440	Y	Grey and cloudy water	W101047
21/07/2008	11:58	13.29		3 VOL	51	6.19	3200	1.45	14.6	-26	Y	Grey and cloudy water	W101047
20/10/2008	12:20	12.56		3 VOL	55	6.13	3790	0.00	14.8	-94	Y	Grey and cloudy water	W101047
29/01/2009	7:45	13.14		3 VOL	51	6.30	2999	0.00	14.9	-234	Y	Grey and cloudy water	W1674089
21/04/2009	12:27	13.55		3 VOL	50	5.90	3254	0.50	15.2	-205	Y	Grey and cloudy water	W1674089
27/07/2009	13:25	13.95		3 VOL	48	5.80	2957	0.57	14.6	-421	Y	Sulphur smell, cloudy water	W1674089
28/10/2009	11:30	13.81		3 VOL	60	5.90	2495	0.15	14.9	-487	Y	Ants nest in bore, Large amount of ants, living and dead in water, very putrid smell coming from bore and water.	W1674089
25/01/2010	10:45	12.88		3 VOL	62	6.40	3353	0.20	15.7	1	Y	Putrid smell	W492
1/04/2010											NOT SAMPLED		
20/07/2010	13:15	13.18		3 VOL	59	6.50	3300	0.10	15.0	-401	Y		W1674089
3/11/2010	10:30	9.98		3 VOL	75	6.40	3213	1.50	14.8	350	Y		W1674089
19/01/2011	11:15	8.62		3 VOL	88	7.30	2536	2.20	15.6	-240	Y		W492
18/04/2011	13:25	8.65		3 VOL	92	6.80	2740	0.00	14.7	-156	Y		W492
28/07/2011	13:00	8.39		3 VOL	78	6.10	3052	0.40	14.5	118	Y	Grey and cloudy water	W492
17/10/2011	9:10	7.79		3 VOL	82	6.20	3140	0.50	14.6	201	Y		W492
18/01/2012	10:35	8.21		3 VOL	87	6.20	3120	0.20	15.0	180	Y		W492
23/04/2012	12:15	8.58		3 VOL	83	6.30	2655	0.20	14.5	183	Y		W492
9/08/2012	11:15	7.80		3 VOL	88	6.00	3110	0.30	13.1	189	Y		W492
29/11/2012	11:15	7.25		3 VOL	91	6.30	3210	0.90	14.7	-47	Y		W492
26/02/2013	9:40	8.44		3 VOL	88	6.20	3327	0.40	14.8	-189	Y		W492
15/05/2013	10:15	9.15		3 VOL	79	6.80	3149	4.30	13.4	157	Y		W492
27/08/2013	10:20	8.33		BAILED		6.60	3118	3.10	14.5	-45	Y	Pump failed while sampling.	W492
25/11/2013	12:24	7.47		3 VOL	86	6.70	2812	0.82	14.8	-125	Y	Sulphur smell, cloudy water	W492
26/02/2014	9:25	9.28		3 VOL	77	6.20	3154	0.60	14.6	53	Y	Sulphur smell, clear water	W492
27/05/2014	12:05	9.37		3 VOL	80	6.30	3085	1.60	14.4	35	Y		W492
25/08/2014	15:05	7.13	7.24	Low Flow	4.0	6.64	2199	0.60	14.0	-15	Y		W492
25/11/2014	9:50	7.96	7.97	Low Flow	5.8	6.45	3020	1.04	13.9	125	Y	Grey, moderate turbidity, no odour	W492
24/02/2015	9:50	8.65	8.69	Low Flow	5.8	7.10	2450	1.30	14.0	169	Y	Brown. Mod turb, no odour. Lab results of pH 7.4 show rise in ph seen in field, lab results of EC also justify field readings.	
25/08/2015	12:40	9.79	9.93	Low Flow	5.0	6.30	3288	0.20	13.5	159	Y	Clear, no odour	W395398
22/02/2016	12:40	10.60	10.65	Low Flow	5.0	6.80	2700	0.44	15.1	112	Y	Clear, no odour	W492
17/01/2017	8:05	7.23	8.05	Low Flow	8.0	6.40	3010	0.40	17.0	59	Y	Milky colour, very rancid odour due to ants nest/dead ants in bore	W10110383
22/03/2017	7:25	8.11	8.45	Low Flow	5.6	6.40	3010	1.00	14.7	95	Y	Grey, low turbidity. Dead ants in bore. Split dup taken	06G1861 AM
30/08/2017	10:40	7.82	7.99	Low Flow	3.5	6.70	2910	0.80	13.3	-19	Y	Grey, low turbidity, no odour.	06G1861 AM
22/02/2018	10:30	8.40	8.61	Low Flow	4.2	6.70	1981	1.10	15.4	-299	Y	Black, low turbidity, sulphur smell.	06G1861 AM
31/07/2018	10:30	9.15	9.35	Low Flow	6.0	6.40	2980	0.50	13.2	-238	Y	Black, low turbidity, sulphur smell.	06G1861 AM
27/02/2019	10:47	9.49	9.85	Low Flow	4.1	6.22	2997	0.25	16.3	-85	Y	Black colour reductive smell	09L100298
22/08/2019	13:40	8.95	9	Low Flow	9.0	6.13	2184	0.18	13.1	7	Y	Slight dark colour, no odour	09L100298
12/02/2020	11:05	8.93	9.39	Low Flow	7.4	6.12	2830	0.46	15.6	45	Y	Grey colour very slight reductive smell	09L100298
20/08/2020	13:18	9.31	9.39	Low Flow	5.8	6.13	2883	0.33	12.9	24	Y	Grey colour very slight reductive smell	09L100298
24/02/2021	13:50	8.35	8.75	Low Flow	7.8	5.90	2856	0.33	15.3	39	Y	Dark grey turbidity	09L100298
16/09/2021	11:46	6.88	7.01	Low Flow	1.6	6.20	2898	0.37	14.9	37	Y	Grey slight odour	09L100298
2/03/2022	9:10	7.57	7.94	Low Flow	2.9	6.23	3072	0.19	15.5	-12	Y	Slight grey colour nil odour	09L100298
30/08/2022	10:51	6.37	6.79	Low Flow	2.4	6.30	2079	0.22	12.2	4	Y	Slight grey colour nil odour	09L100298
15/02/2023	10:46	4.89	5.21	Low Flow	7.8	6.30	3245	0.24	14.3	58	Y	Slight grey colour nil odour	050710
1/08/2024	11:23	7.49	7.72	Low Flow	7.7	6.18	2962	4.67	12.7	44	Y	Little bit turbid, no odour.	7490039101

Project	Daylesford Landfill	Client	Hepburn Shire
Site	BH3	Description	FIELD READINGS
Bore Depth to TOC (m)	18.33		
AHD of top of Casing	NA		



Date	Time (est)	Pre-Purged WL (m from TOC)	Post-Purged WL (m from TOC)	Pump Method	Volume Pumped (litres)	pH	Electrical Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Temp (C)	Redox (mV)	Sample Taken (Y/N)	comments	Meter Serial No
29/10/2003	11:30	4.53		3 VOL	88	NA	NA	NA	NA	NA	Y		
25/02/2004	11:54	4.92		Low Flow		NA	NA	NA	NA	NA	Y		
23/06/2004	13:47	5.77		3 VOL	80	6.04	3900	0.00	13.4	-31	Y		
25/10/2004	13:50	4.14		Low Flow		5.94	3220	0.45	13.6	-11	Y		
24/01/2005	11:50	4.63		BAILED		6.30	3550		12.6		Y		
15/04/2005	10:00	4.49		3 VOL	100	5.92	3710	3.99	13.4	-58	Y		
1/08/2005	15:10	4.86		Low Flow		5.84	3980		13.6	-57	Y		
26/10/2005	12:42	4.25		3 VOL	100	5.90	3740	4.40	13.7	-199	Y		
30/01/2006	13:40	4.38		Low Flow		6.23	3690		14.5		Y	Black and oily looking	
27/04/2006	12:57	5.15		3 VOL	90	6.01	3970	0.00	13.6	-145	Y	sulphur smell with oily appearance, described as white creamy lines	
27/07/2006	10:42	5.42		3 VOL	85	6.05	3670	0.00	13.7	-77	Y	Creamy appearance	
25/10/2006	10:10	5.62		3 VOL	87	6.04	3550	0.00	13.7	-90	Y	Grey colour sulphur smell	
23/01/2007	12:36	6.27		3 VOL	80	5.92	4140	0.00	13.8	-134	Y		
18/04/2007	12:17			3 VOL	70	6.52	3141	0.00	14.2	-457	Y	Time value written in instead of water level. Water has sulphur smell, green/grey in colour and oily.	
23/07/2007	14:40	7.39		3 VOL	75	5.89	2778	0.00	13.0	-441	Y	Water has sulphur smell, green/grey in colour and oily appearance.	
23/10/2007	12:11	7.01		3 VOL	82	6.09	3460	0.00	13.8	-109	Y	Water has sulphur smell, green/grey in colour and oily appearance.	W101047
23/01/2008	12:24	7.40		3 VOL	70	6.15	3480	0.00	14.0	-164	Y	Water has sulphur smell, green/grey in colour and oily appearance.	W1674089
21/04/2008	11:22	7.96		3 VOL	70	5.84	2450	0.00	14.1	-451	Y	sulphur smell	W101047
21/07/2008	11:08	8.40		3 VOL	75	6.14	3480	1.16	13.7	-127	Y	sulphur smell	W101047
20/10/2008	11:31	8.10		3 VOL	75	5.76	3820	0.00	14.0	-127	Y	sulphur smell	W101047
29/01/2009	7:10	8.30		3 VOL	68	6.30	3033	0.00	13.8	-357	Y	sulphur smell	W1674089
21/04/2009	11:50	8.79		3 VOL	70	5.80	3430	2.00	13.7	-222	Y	sulphur smell	W1674089
28/07/2009	12:50	9.10		3 VOL	60	5.90	3307	0.00	13.7	-437	Y	very strong sulphur smell	W1674089
28/10/2009	12:50	8.51		3 VOL	70	5.80	2755	0.10	13.9	-440	Y	Cloudy, slight sulphur smell	W1674089
25/01/2010	11:15	8.26		3 VOL	75	6.30	3071	0.10	14.1	110	Y		W492
1/04/2010											NOT SAMPLED		
21/07/2010	12:15	8.41		3 VOL	65	6.30	3470	0.10	13.8	-359	Y		W1674089
3/11/2010	9:35	5.85		3 VOL	85	6.00	3471	2.60	13.9	275	Y		W1674089
19/01/2011	11:45	4.55		BAILED		7.80	2760	2.20	14.3	-267	Y	pH not following trend, possibly due to being bailed, lab results of 6.7 follow this trend better.	W492
18/04/2011	14:24	4.16		3 VOL	95	6.50	3015	0.0	13.8	-164	Y		W492
28/07/2011	11:45	3.93		3 VOL	100	5.90	3340	0.2	13.5	158	Y		W492
17/10/2011	9:35	3.66		3 VOL	105	6.10	3480	0.7	13.5	203	Y		W492
18/01/2012	10:55	3.93		3 VOL	105	6.20	3480	0.4	13.9	181	Y		W492
23/04/2012	12:45	4.31		3 VOL	105	6.20	2945	0.4	13.7	167	Y		W492
9/08/2012	12:10	3.85		3 VOL	105	6.40	3510	0.6	12.7	177	Y		W492
29/11/2012	11:35	3.11		3 VOL	102	6.10	3380	0.7	13.9	-54	Y		W492
26/02/2013	10:34	4.22		3 VOL	102	6.20	3416	0.4	13.9	-223	Y		W492
15/05/2013	10:41	4.93		3 VOL	105	6.80	3459	2.4	12.8	104	Y		W492
27/08/2013	10:45	4.41		3 VOL	110	6.50	3409	0.4	13.6	-33	Y	sulphur smell	W492
25/11/2013	13:04	3.32		3 VOL	110	6.50	3041	1.9	15.5	-86	Y	sulphur smell	W492
26/02/2014	9:55	3.62		3 VOL	112	6.10	3481	0.0	13.8	37	Y	sulphur smell	W492
27/05/2014	11:00	4.57		3 VOL	115	6.10	3366	0.0	13.7	1	Y	sulphur smell	W492
25/08/2014	13:50	3.73	2.89	Low Flow	7.7	6.63	3113	0.1	13.3	-95	Y		W492
25/11/2014	9:00	3.66	3.67	Low Flow	6.3	6.30	3390	0.10	12.5	127	Y	Clear, no odour.	W492
24/02/2015	9:00	4.56	4.67	Low Flow	6.3	6.20	3480	0.30	14.3	138	Y	Clear, no odour.	W492
25/08/2015	14:30	5.48	5.52	Low Flow	4.0	6.00	3654	0.20	12.3	165	Y	Clear, no odour.	W395398
22/02/2016	14:15	6.49	6.59	Low Flow	4.5	6.20	3420	0.64	14.4	152	Y	Light brown colour, low turb, no odour	W492
17/01/2017	9:30	3.12	3.12	Low Flow	4.8	6.70	2851	0.70	16.7	247	Y	Light brown colour, low turb, no odour. SPLIT DUPLICATE TAKEN	06G1861
22/03/2017	8:50	4.11	4.26	Low Flow	5.3	6.00	3140	0.90	14.7	184	Y	Clear	06G1861
30/08/2017	12:05	3.93	3.94	Low Flow	4.0	6.90	2870	1.10	11.3	155	Y	Clear, no odour.	06G1861 AM
22/02/2018	11:35	4.59	4.66	Low Flow	3.3	6.00	3370	0.90	15.2	-43	Y	Light brown, mod turb, no odour.	06G1861 AM
31/07/2018	11:40	5.26	5.3	Low Flow	7.0	7.00	3340	0.65	12.0	-121	Y	Light brown, mod turb, no odour.	06G1861 AM
27/02/2019	12:05	5.60	5.67	Low Flow	4.7	5.97	3325	0.28	16.1	-25	Y	Slight grey turbidity slight septic odour	09L100298
22/08/2019	13:30	4.99	5.01	Low Flow	4.2	6.00	3333	0.21	11.3	7	Y	Moderate turbidity, light gray, no odour	09L100298
12/02/2020	12:12	5.16	5.25	Low Flow	5.2	5.95	3342	0.35	15.1	44	Y	Slight grey turbidity nil odour	09L100298
20/08/2020	14:35	5.08	5.09	Low Flow	3.9	6.06	3339	0.35	12.1	-13	Y	grey turbidity nil odour	09L100298
25/02/2021	9:30	4.60	4.66	Low Flow	7.8	5.85	3335	0.30	13.2	48	Y	Slight grey turbidity nil odour	09L100298
16/09/2021	12:30	3.33	3.39	Low Flow	3.1	6.04	3498	0.26	12.1	47	Y	Slight grey turbidity nil odour	09L100298
2/03/2022	9:55	3.78	3.83	Low Flow	2.6	6.09	3535	0.17	15.1	-19	Y	Clear, nil odour.	09L100298
30/08/2022	11:55	3.10	3.12	Low Flow	3.3	6.16	3350	0.38	11.1	0	Y	Slight grey turbidity nil odour	09L100298
15/02/2023	11:55	1.41	3.12	Low Flow	3.3	6.16	3069	0.34	14.0	95	Y	Slight grey turbidity nil odour	050710
1/08/2024	12:51	3.80	3.83	Low Flow	1.8	6.01	3198	4.69	12.5	40	Y	Little bit turbid, no odour	7490039101

Project	Daylesford Landfill	Client	Hepburn Shire
Site	BH4	Description	FIELD READINGS
Bore Depth to TOC (m)	39.10		
AHD of top of Casing	NA		



Date	Time (est)	Pre-Purged WL (m from TOC)	Post-Purged WL (m from TOC)	Pump Method	Volume Pumped (litres)	pH	Electrical Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Temp (C)	Redox (mv)	Sample Taken (Y/N)	comments	Meter Serial No
29/10/2003	12:10	27.30		Low Flow		NA	NA	NA	NA	NA	Y		
25/02/2004	9:50	27.70		Low Flow		NA	NA	NA	NA	NA	Y		
23/06/2004	12:20	28.65		Low Flow		5.46	3250	1.26	13.6	16	Y		
25/10/2004	11:15	27.68		Low Flow		6.36	2320	9.84	15.3	-46	Y		
24/01/2005	9:30	27.24		BAILED		5.55	2750		13.3		Y		
15/04/2005	12:10	27.45		Low Flow		5.51	2690	7.40	17.7	-14	Y		
1/08/2005	13:05	28.10		Low Flow		5.36	2970	9.24	14.2	9	Y		
26/10/2005	11:27	27.55		Low Flow		5.50	2810	6.80	12.7	6	Y		
30/01/2006	10:50	27.53		Low Flow		5.56	2000		25.3		Y	cloudy appearance	
27/04/2006	10:00	28.28		Low Flow		5.62	3080	0.23	13.2	44	Y	grey cloudy appearance	
27/07/2006	8:55	28.98		Low Flow		5.53	3080	0.00	12.4	30	Y	grey cloudy appearance	
25/10/2006	8:50	29.25		Low Flow		5.50	2910	2.10	14.0	28	Y		
23/01/2007	10:30	29.63		Low Flow		5.30	3340	3.01	22.2	23	Y	cloudy appearance	
18/04/2007	10:50	30.19		Low Flow		5.80	2470	0.20	17.8	84	Y		
23/07/2007	12:15	30.53		Low Flow		6.77	2343	0.00	12.6	165	Y		
23/10/2007	10:50	30.31		Low Flow		5.48	2690	1.39	14.8	6	Y		W101047
23/01/2008	11:27	30.61		Low Flow		5.58	3240	7.52	15.8	-21	Y	grey cloudy appearance	W1674089
21/04/2008	10:32	30.61		Low Flow		5.50	2702	0.00	14.6	-377	Y	grey cloudy appearance	W101047
21/07/2008	10:28	31.53		Low Flow		6.60	2900	0.72	11.7	-90	Y		W101047
20/10/2008	11:45	31.16		Low Flow		5.20	3190	0.00	14.6	-5	Y		W101047
29/01/2009	8:45	31.55		Low Flow		5.60	2615	0.69	19.1	-12	Y		W1674089
21/04/2009	11:08	31.79		Low Flow		5.40	2968	0.95	16.4	-121	Y		W1674089
28/07/2009	11:50	32.22		Low Flow		5.30	2980	3.60	12.0	-66	Y		W1674089
28/10/2009	9:00	31.66		BAILED		5.50	2515	1.50	16.1	-64	Y		W1674089
25/01/2010	10:00	31.41		BAILED		5.60	2840	1.20	16.7	174	Y		W492
1/04/2010											NOT SAMPLED		
21/07/2010	11:00	31.54		Low Flow		6.50	1200	0.10	11.7	-90	Y	Unsure why EC so low, field results of 1000 and lab results show Ec of 1200. Approx 120mm rain fell in preceding month. Both low readings confirm a drop in EC for this sample round compared to the usual 2000-3500 range	W1674089
3/11/2010	9:00	28.86		BAILED		5.60	3007	2.60	13.2	681	Y		W1674089
19/01/2011	9:30	27.15		Low Flow		6.50	2550	1.10	15.4	-180	Y		W492
18/04/2011	11:48	26.97		Low Flow		6.60	2990	0.4	15.4	-144	Y		W492
28/07/2011	11:00	26.83		BAILED		5.70	3261	1.2	14.1	139	Y		W492
17/10/2011	8:15	26.31		BAILED		5.70	3780	2.3	14.5	275	Y		W492
18/01/2012	9:45	26.46		BAILED		5.70	3330	2.3	16.1	276	Y		W492
23/04/2012	11:15	27.03		BAILED		5.90	3106	2.1	14.1	295	Y		W492
9/08/2012	10:30	26.48		BAILED		5.40	3680	1.2	13.5	271	Y		W492
29/11/2012	9:30	25.60		BAILED		5.50	3560	1.7	16.6	42	Y		W492
26/02/2013	9:00	26.45		BAILED		5.60	3716	2.2	16.0	-49	Y		W492
15/05/2013	9:45	27.23		BAILED		5.70	3744	2.5	13.9	245	Y		W492
27/08/2013	9:45	26.86		BAILED		5.50	3737	3.0	14.7	115	Y	Sulpher Smell	W492
25/11/2013	10:00	25.76		BAILED		5.40	3374	1.4	15.5	50	Y	Sulpher Smell	W492
26/02/2014	8:50	26.59		BAILED		5.70	3836	2.1	15.0	163	Y	Sulpher Smell	W492
27/05/2014	10:10	27.02		BAILED		5.70	3828	1.1	14.6	37	Y	Sulpher Smell	W492
25/08/2014	10:15	26.70	25.90	Low Flow	7	6.60	4033	0.2	14.4	3	Y		W492
25/11/2014	13:15	26.21	26.27	Low Flow	8.2	5.75	4380	0.61	15.2	192	Y	Clear, no odour.	W492
24/02/2015	12:25	26.92	26.96	Low Flow	6.7	6.10	4090	1.10	15.3	174	Y	Clear, no odour.	W492
25/08/2015	8:10	28.23	28.42	Low Flow	7.3	5.50	4322	0.38	13.6	130	Y	Clear, no odour.	W395398
22/02/2016	8:40	29.01	29.15	Low Flow	5.5	5.50	4210	0.50	13.6	117	Y	Grey colour, low turbidity, no odour.	W492
17/01/2017	7:00	25.14	25.38	Low Flow	9.0	5.70	4060	0.70	17.3	139	Y	Grey milky colour, odourless.	W10110383
22/03/2017	7:30	25.93	26.22	Low Flow	13.0	5.60	4180	2.00	15.2	178	Y	Grey milky to clear by time sampled	W10110383
30/08/2017	8:10	26.45	26.74	Low Flow	8.3	5.80	3380	1.00	12.2	214	Y	Grey colour, low turbidity, no odour. SPLIT DUP TAKEN	06G1861 AM
22/2/218	7:45	26.56	26.81	Low Flow	7.3	6.60	4770	0.10	15.7	-121	Y	Grey colour, low turbidity, no odour. SPLIT DUP TAKEN	06G1861 AM
31/07/2018	7:55	27.76	28.1	Low Flow	8.0	6.80	4120	0.80	12.5	-125	Y	Grey, low turb, no odour. Split dup taken	06G1861 AM
27/02/2019	9:06	27.93	28.39	Low Flow	9.1	5.55	4033	0.33	15.3	15	Y	Grey, low turb, no odour. Split dup taken	09L100298
21/09/2019	11:52	27.51	27.54	Low Flow	9.6	5.62	3793	0.17	14.7	34	Y	Slightly cloudy, no odour	09L100298
12/02/2020	9:30	27.42	27.67	Low Flow	7.8	5.44	4017	0.48	16.3	62	Y	Slight grey turbidity	09L100298
20/08/2020	11:07	27.87	27.67	Low Flow	5.2	5.50	3889	0.43	12.0	44	Y	slight grey turbidity	09L100298
24/02/2021	12:05	26.86	27.06	Low Flow	8.4	5.34	4202	0.41	15.6	65	Y	Grey, low turb, no odour.	09L100298
16/09/2021	9:16	25.69	25.87	Low Flow	5.5	5.66	4161	0.19	13.9	23	Y	Grey turbidity, no odour	09L100298
2/03/2022	7:45	25.69	25.91	Low Flow	4.6	5.62	4857	0.44	17.7	-9	Y	Clear, no odour.	09L100298
30/08/2022	8:40	25.28	25.39	Low Flow	5.1	5.61	4017	0.49	11.1	7	Y	Silver turbidity nil odour	09L100298
15/02/2023	8:55	22.37	22.43	Low Flow	5.1	5.59	4221	0.35	15.3	80	Y	Silver turbidity nil odour	050710
1/08/2024	14:30	25.75	25.87	Low Flow	2.5	5.42	4339	0.43	14.4	-6	Y	Cloudy no odour, light grey.	23G103456

Project		Daylesford Landfill		Client		Hepburn Shire						
Site		LEACHATE		Description		FIELD READINGS						
*Note AHD level of bore casing =556.500												
Date	Time (est)	Survey reading on bore casing	Survey Water level reading	Difference	Pool level M AHD (Casing AHD - Difference)	pH	EC	Do	Temp	Orp	Comments	Probe
29/10/2003	12:45				554.573						See lab results	
25/02/2004	12:20			2.350	554.150						See lab results	
22/06/2004	14:00			2.038	554.462						See lab results	
25/10/2004	14:00			1.465	555.035						See lab results	
24/01/2005	10:20			1.575	554.925						See lab results	
15/04/2005	9:10	0.795	2.369	1.574	554.926	8.82		10.50	15.5			
1/08/2005	15:30	0.075	1.840	1.765	554.735	8.33	783	11.33	10.1			
26/10/2005	13:00	0.84	1.856	1.116	555.384	8.70	664	5.90	17.3			
30/01/2006	13:15	0.28	1.410	1.130	555.370	8.95	599	6.70	26.1		Greenish tinge.	
27/04/2006	13:15	0.904	2.203	1.299	555.201	8.99	552	9.40	13.8		Greenish tinge.	
27/07/2006	12:00	0.54	1.535	0.995	555.505	8.28	451	8.25	8.6			
25/10/2006	10:30	0.896	1.940	1.044	555.456	8.94	438	6.10	17.8			
23/01/2007	9:00	0.674	3.271	2.597	553.903	9.51	481	4.58	25.8			
18/04/2007	12:00	0.536	3.918	3.384	553.116	9.95	541	6.31	17.7			
23/07/2007	14:30					8.14	331	9.48	10.0			
23/10/2007	12:30	0.712	3.075	2.363	554.137	7.93	397	1.83	19.3			W101047
23/01/2008	12:45					8.45	530	13.47	22.2			W1674089
21/04/2008	12:50	0.228	3.818	3.590	552.910	8.63	558	9.04	15.3			W101047
21/07/2008	11:20	0.364	2.748	2.384	554.116	7.62	438	9.76	7.2			W101047
20/10/2008	11:40	0.367	3.289	2.922	553.578	7.33	388	10.60	19.0			W101047
29/01/2009	7:20				553.473	9.37	504	9.42	24.7			W1674089
21/04/2009	12:00	0.675	3.943	3.268	553.232	8.88	747	4.00	16.2			W1674089
28/07/2009	13:00	0.764	3.036	2.272	554.228	8.30	443	10.70	7.5			W1674089
28/10/2009	11:00	0.591	3.091	2.500	554.000	7.80	497	10.20	18.1			W1674089
25/01/2010	11:20					8.10	740	7.60	25.1			W492
1/04/2010											NOT SAMPLED	
21/07/2010	11:30	0.697	2.443	1.746	554.754	7.90	440	11.40	8.9			W1674089
3/11/2010	9:50	0.758	1.618	0.860	555.640	8.50	662	7.80	15.4			W1674089
19/01/2011	11:20	1.013	1.884	0.871	555.629	8.40	690	8.10	19.8			W492
18/04/2011	14:40	1.010	1.880	0.870	555.630	7.90	990	6.00	17.9			W492
28/07/2011	12:15	0.287	1.277	0.990	555.510	7.60	940	7.20	7.3			W492
17/10/2011	9:50	0.909	2.722	1.813	554.687	8.70	850	12.90	16.0			W492
18/01/2012	11:30	0.869	2.668	1.799	554.701	8.10	911	12.00	26.7			W492
23/04/2012	13:00	0.964	2.652	1.688	554.812	8.70	705	10.10	15.3			W492
9/08/2012	11:40	0.927	2.576	1.649	554.851	8.00	664	9.30	8.2			W492
29/11/2012	11:55	0.929	2.155	1.226	555.274	9.20	747	11.20	28.1			W492
26/02/2013	10:00	0.552	2.680	2.128	554.372	8.80	942	7.90	23.4			W492
15/05/2013	11:10	0.570	3.283	2.713	553.787	8.50	1092	9.30	10.5			W492
27/08/2013	11:00	0.676	2.741	2.065	554.435	8.50	536	13.10	10.8			W492
25/11/2013	13:40	0.641	1.363	0.722	555.778	8.60	755	9.60	26.3			W492
26/02/2014	10:05	0.782	3.253	2.471	554.029	8.60	1025	8.70	21.3			W492
27/05/2014	11:10	0.736	3.075	2.339	554.161	8.70	864	8.50	12.8			W492
25/08/2014	14:15	0.911	2.059	1.148	555.352	11.00	590	12.90	13.3			W492
25/11/2014	8:30	0.877	2.145	1.268	555.232	9.00	695	10.10	18.0			W492
24/02/2015	8:30	0.711	4.124	3.413	553.087	8.40	1086	8.10	18.3		Dam observed to be very low.	W492
25/08/2015	14:00					8.50	770	13.40	11.9		Level not observed due to laser level used to obtain height not working	W395398
22/02/2016	12:35				550.007	8.70	1470	8.90	21.9		Dam very low.	W492
17/01/2017	10:40					8.10	1259	8.60	22.0	188.0		06G1861
22/03/2017	10:00					8.30	1790	5.60	20.4	184.0		06G1861
30/08/2017	13:15					7.80	860	9.30	9.4	24.0		06G1861 AM
22/02/2018	12:00					8.10	1132	5.50	21.1	-68.0	Water level very low	06G1861 AM
31/07/2018	8:10					7.90	757	11.50	7.9	36.0		06G1861 AM
27/02/2019	13:20					8.87	887	2.78	21.1	-35.1		09L100298
12/02/2020	13:02					7.68	816	17.56	28.0	37.7	Water level very low High oxygen levels	09L100298
20/08/2020	15:09					7.75	497	10.43	10.8	-8.5	High oxygen conditions	09L100298
25/02/2021	11:05					7.86	538	9.26	19.8	9.9	High oxygen conditions	09L100298
16/09/2021	13:10					8.82	429	14.70	11.4	39.6	High oxygen conditions	09L100298
2/03/2022	10:45					7.39	765	0.03	20.5	-172.3	Low oxygen conditions	09L100298
30/08/2022	12:55					7.78	407.00	-	-	-	Low oxygen conditions	09L100298
15/02/2023	13:10					8.40	903	7.18	24.0	29.4	Low oxygen conditions	050710
1/08/2024	15:03					6.68	706	7.36	12.9	61.1		23G103456