

MEETING NOTES

TUESDAY

10 August 2021

6.30pm – 8.00pm Online

FACILITATOR: SUSAN McNair, CURRIE

NOTE TAKER: MIETTA ADAMS, CURRIE



MEETING PURPOSE

- i. Share and discuss the audit report
- ii. Confirm topics and community consultation in 2021-2022

ATTENDEES

Community

- Julie Law
- Graeme Hodgson
- Helen Patsikatheodrou

- Kim Westcombe
- Helen van den Berg
- Jos van den Berg

City Council

- Amanda Dodd, Hume City Council
- Julia Bennett, Environmental Planning Officer at Hume City Council

Environmental consultant

- Mark Walker (Resolve)
- Michael Stewart (Resolve)

EPA Victoria

- Jeremy Settle, Field Team Leader, Metropolitan Region
- Cleanaway
 - Srikar Rapole

- Sean Vintin Senior Environment Protection Officer
- Olga Ghiri, Stakeholder and Community Engagement Manager

Apologies

- Peter Barbetti
- Ovi Clements
- Prue Hicks
- Russell Nilsson

ABOUT THESE NOTES

Currie Communications has produced these notes, which aim to provide detailed minutes that cover the key information that was provided in the meeting. However, these notes are not intended to be a transcript of the meeting, and discussions, comments and questions have been summarised to reduce the overall length of this document.

Presenters were given the opportunity to review the notes relating to their item to ensure the discussion was accurately summarised, and that it details best available knowledge at the time of the meeting. Attending community members were also given the opportunity to provide feedback, which was addressed by Currie. Additional comments or relevant information received after the meeting have been highlighted in red, and useful hyperlinks have been added to text as additional references.



These notes will be posted on the Tullamarine Community Information page on the Cleanaway website www.cleanaway.com.au/community/major-project/tullamarine-closed-landfill-vic/ and will be available to the public. All meeting participants were asked if they wanted their names to be removed from public version of the document.

The intent of these meeting notes is to promote open communication between Cleanaway, local government, community and EPA Victoria. They are not to be used in a manner that compromises this objective.



AGENDA

- 1. Welcome, introductions (S. McNair)
- 2. Meeting principles and purpose (S. McNair)
- 3. Tullamarine Landfill PCPAN Annual Compliance Report 2020 (M. Walker & M. Stewart)
- 4. Additional discussion and questions
- 5. EPA update and community questions (J. Settle)
- 6. Recap on actions, confirm date for next meeting, meeting close (S. McNair)

Meeting opened at 6.40pm.

Item 1: Welcome, introductions

S.McNair (Facilitator) welcomed everyone and all attendees introduced themselves.

Item 2: Meeting principles and purpose

S.McNair noted the following principles for conduct of the meeting:

- Respect each other.
- Give everyone a fair go and a chance to speak.
- Openly share information and be transparent.
- No personal attacks.
- Be clear and concise.
- Be truthful and honest.

The purpose of the meeting as stated in the agenda was reviewed and no changes were requested.

TLCCG Cleanaway Rolling Action List

S. Rapole, Cleanaway, provided an overview of the Rolling Action List which can be found in Appendix 1.

Question: I am surprised to hear the kangaroos entered the site and was under the impression there were strong fences. Where are they getting in?

S. Rapole: They do damage and climb through fences at various perimeter locations around the site unfortunately.

Question: There was a different plan put forward for the stormwater. It did cost a bomb so Cleanaway stuck with the existing plan. We weren't very happy as a community. Now you're saying that you're doing something else with the stormwater?

- S. Rapole: We are looking at the catchment around the sites and are making sure all the stormwater runoff is being collected and managed. Mark and Michael may have more to say on that as they are helping us in running that design. It won't be covered in their presentation.
- M. Walker: Cleanaway and a recent audit recommendation asked us to update the stormwater management plan. The document captures how stormwater is generated at the site and how that water is to be managed



across the site. That involves things from making sure gutters on the buildings aren't blocked to the bigger stormwater controls like pond storage. As part of that, the outlet will be covered in that report as well and will talk to the purpose of that outlet and any management requirements around it to make sure it's working safely and as intended. We are aware there are question marks around exactly what that pipe is and what it is for so that will be documented in that report as well.

Question: Have either of you been given the documents relating to the last plan on stormwater? It seems there is not much transition of knowledge to people and with change of staff occurring it doesn't seem there is proper documentation to assist the people new in the job to get a full background. In terms of wildlife entering the site, do you have sensors on the fences to find out what wildlife is entering and how? If not, I recommend you get them as they are not expensive. We first wrote a letter directly to Cleanaway about kangaroos at this site in 2006. We have also repeatedly expressed concern at the lack of air quality monitoring, and it is frustrating to come back to the same issues. That tells me there is no commitment at the management level. My question is, do you get those documents and have any of you ever agitated to your high up bosses that they should attend these meetings and find out what it is like?

While the stormwater plan referred to was not pursued by Cleanaway and has been covered at previous meetings, O. Ghiri will ensure S.Rapole has a copy of it and the minutes from the relevant community meeting.

S.Rapole confirmed Cleanaway has a process for handover, including documentation. O.Ghiri confirmed Cleanaway management has previously attended meetings. The community member requested the TLCCG meeting invites be issued to Cleanaway CEO, Chair and Board.

Action 0821_1 – O. Ghiri: Ensure S.Rapole is aware of the last plan and will follow up the minutes from previous years.

Action 0821 2 – S.McNair: Meeting invitation to be sent to Cleanaway CEO, Chair and Board.

Item 3: Tullamarine Landfill PCPAN Annual Compliance Report 2020

M. Stewart, environmental consultant, provided an overview of the post-closure report *The Tullamarine Closed Landfill Annual Compliance Report 2020*, summarised below. Slides can be found in Appendix 2.

M. Stewart explained the nature of the Annual Compliance Report (ACR)

- The ACR is a factual report that determines compliance with
 - The Environmental Monitoring Plan (EMP)
 - o Post-Closure Pollution Abatement Notice (PCPAN) conditions
 - Any other relevant government policies and regulations such as State Environmental Protection Policies (SEPPs)
- As part of the ACR, a groundwater, surface water, leachate and landfill gas were monitored

M. Stewart described issues faced during the reporting period:

- There were a number of locations that were unable to be sampled due to a variety of reasons including:
 - Vegetation overgrowth
 - LNAPL thickness and viscosity
 - Blockages



- Issues with sump infrastructure
- New best available sampling methods were undertaken to get around LNAPL obstacles, such as the 'Waterra' foot valve sampler
- Leachate levels were above target levels
- PFAS was detected in all surface monitoring locations along the creek, with indications that it is coming from up stream

Item 4: Additional discussion and questions

M. Stewart responded to questions provided by the community in advance. All of these provided questions can be found with answers in Appendix 3. M. Stewart also responded to additional questions during the session.

Question: Where is that new way of capturing leachate in the report? What does the impact of not being able to sample these locations have overall?

M. Stewart: You are right, it is not appropriately highlighted in the report and might be captured in the audit report for the year to say that monitoring technique has been adapted over the year and improved. We are confident in our understanding of the leachate chemistry and further leachate sampling doesn't provide us much else. An inability to sample doesn't present too much of an impact to the understanding of the site or risks. As for surface water monitoring locations, while we were missing the MPCL 12 and MPCL 13, and to a lesser extent the lower MPCL, we were able to make good estimations using information from nearby locations, such as MPCL15 and MPCL02. **Question:** Has there been any move to discuss the overgrown vegetation?

M. Stewart: Not that I am aware of, that is something to direct towards the Cleanaway team. That is a limitation for us.

Question: 'PFAS was detected in the surface water.' Is the surface water in the rock pond, settling ponds or Moonee Ponds creek?

Action 0821 3 – M. Stewart: To check and provide a response.

Question: Is there a question mark over the exceedance because the bores are in the wrong place?

M. Stewart: Correct

Question: Are the replacement bores installed yet?

M. Stewart: Yes, they have.

Action 0821 4 – S. Rapole to check that new bores are available to the community.

Question: What causes the blockages? In the long term, could this become a more frequent problem and why isn't it replaced?

M. Stewart: It's caused by inactive equipment in the pump. Replacing the bores is a question for Cleanaway.

Action 0821 5 – S. Rapole: To check and provide a response.

Question: The temperature around the wells is about 40-42 degrees. Is it cooling down and blocking because it gets thicker? Could tests be done on the temperature of those wells to see why it is blocking?



- M. Stewart: We understand that cooler temperatures will cause LNAPL to become denser, which would present an issue for certain sampling techniques.
- J. Settle: The blocking/collapsing of leachate well is not uncommon for landfills and happens on every landfill. It is not about stopping it; it is about how you respond to it.

Question: How is it responded to and what percentage is it expected to fail during audit period?

S. Rapole: Will take this on notice.

Action 0821 6 – S. Rapole: To check and provide a response.

Comment (A. Dodd): Vegetation shouldn't be a constraint in future audits. I expect Melbourne Water would be happy to clear the vegetation. The best contact to arrange vegetation clearing on the site to facilitate the surveying is Ryan van den Hove | Waterway and Land Officer, Regional Services (Noth West), Waterways and Catchment Operations | Melbourne Water T: 03 9679 6985 | Ryan.VanDenHove@melbournewater.com.au

- J. Settle: Let Melbourne Water know if you have any vegetation issues. They should be quite responsive. Reach out to Hume City Council or Julia, Sean or myself as we can help provide assistance with that.
- S. Rapole: We are happy to be in touch and get out there and sample, it is part of our current scope of work.

Item 5: EPA update and community questions

J. Settle noted that questions had been answered thoroughly and put it to the community to direct any additional questions to the EPA.

Item 6: EPA response to audit and questions

Question: Are you happy with the current progression of the audit?

J. Settle: The EPA does not receive or require auditprogress updates unless timeframes are breeched. I will have a meeting in the coming weeks with the auditor and get a clearer timeframe then. It is the same auditor as last time.

Question: How does the new EPA Act impact this site?

J. Settle: The Act provides a transition period of two years. There is new legislation and new tools in there that we are looking to transition to – this would likely be a Site Management Order. It is a powerful document. GED is around the practical management of risks so given the heavy involvement of consultants and auditors and progressing along with those, they're the considerations we take into account. So is the legislation different? Yes, it is very different. Does it come to a hugely different outcome in this case? Most likely not.

Question: Unless you breach it and then the fine will be bigger?

J. Settle: Yes the penalties are larger though most need to sought through a court of law rather than infringement notices. The other aspect is the option to take the breaches to civil court which is a lower evidentiary threshold, you do get lower penalties associated with that but it is much quicker to move through.



Question: In the rolling action list, Peter was going to provide an update and a map listed as complete. Did we get electronic copies?

S. McNair: They are at the back of the meeting notes.

Question: The meeting notes from March 2021 are not on the Cleanaway website. Can this be rectified?

Action 0821_7 – O. Ghiri: To ensure the March 2021 meeting minutes are on the Cleanaway website.

Question: Is there still water monitoring going twice a year? Is that linked to that report?

J. Settle: Water monitoring takes place on a quarterly basis.

Item 7: Close of meeting

The group did not confirm the next meeting date.

Action 0821 8 – S. McNair: Confirm the next meeting date following confirmation of audit timeline.

Minutes will be shared as a draft, and if you have any questions or queries, please get in contact and we'll go through the transcripts to ensure that they're as accurate as they can be.

Meeting closed at 8.00pm.



Appendix 1: Rolling action list

UPDATED 10 August 2021

Reference	Actions – 26 March 2021	Update – August 2021
0821_1	O. Ghiri to ensure S.Rapole is aware of the last plan and will follow up the minutes from previous years.	
0821_2	O. Ghiri to send invitation to CEO, chair and general manager of boards.	
0821_3	M. Stewart to provide information on what surface water PFAS was detected in (rock pond, settling ponds or Monee Ponds Creek)	Where this report refers to PFAS monitoring of surface water, this was limited to the Moonee Ponds Creek only.
0821_4	S. Rapole to check that new bores are available to the community.	
0821_5	S. Rapole to check on the status of replacing blocked bores and whether this is happening.	
0821_6	S. Rapole to check how Cleanaway is responding the falling temperatures of the wells and the expected blockage rate during the audit period.	
0821_7	O. Ghiri to follow up and ensure the meeting notes from March 2021 are up on the website.	
0821_8	S. McNair to confirm the next meeting date.	
ACTIONS CLOSED		
0321_1	P. Fennelly to inform the community on what records they received from the owner.	Cleanaway purchased the site in ~2007 from previous ownership and have various records of data & reports dating back to 2003/04*



		*All data & reports may not have been captured.
0321_2	P. Fennelly to update the community on rectifying the flare at the next meeting.	S: Rapole: Flare Control System is proposed to be updated to ensure remote purging during an unexpected outage or shutdown.
0321_3	P. Fennelly to talk to A. Dodd about potential collaboration to monitor growling grass frog populations.	No further discussions have been made.
0321_4	P. Fennelly to update the community on the kangaroo management plan at the next meeting.	S.Rapole: Currently Kangaroo's enter the site through various paths and utilise the resources available. No further immediate actions are proposed at the moment.
0321_5	P. Fennelly to update the community on the groundwater pipe design at the next meeting.	S.Rapole: We believe this refers to the stormwater pipe connection; we are currently in the process of updating the Site stormwater management plan. This will outline any requirements for a stormwater pipe and its design.



Appendix 2: Environmental auditor presentation

TULLAMARINE CLOSED LANDFILL ANNUAL COMPLIANCE REPORT 2020

Presentation to Tullamarine Landfill Community Consultation Group



Mark Walker, Michael Stewart 10/08/2021







PRESENTATION CONTENTS

- Monitoring and Purpose of Annual Compliance Report (ACR)
- Scope of Monitoring Undertaken
- Issues Faced in the Reporting Period
- Response to Submitted Questions

TULLAMARINE CLOSED LANDELL PCPAN ANNUAL COMPLIANCE REPORT 2020

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MONITORING AND PURPOSE OF ACR

- ACR is factual in nature.
- Purpose of ACR is to determine compliance with:
 - The Environmental Monitoring Plan (EMP) which has been verified by the site's Environmental Auditor
 - Relevant government policies and regulations, including State Environmental Protection Policies (SEPPs) for groundwater and surface water, and
 - Post-Closure Pollution Abatement Notice (PCPAN) conditions
- Interpretation of environmental monitoring data is undertaken in the Aftercare Management (Post Closure) Environmental Audit, and in reports such as a Hydrogeological Assessment or a Risk Assessment.

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SCOPE OF MONITORING

Groundwater (GW), Leachate and Surface Water (SW) Monitoring

Monitoring Round	Monitoring Undertaken
February 2020	Gauged 47 GW wells and 16 leachate sumps Sampled 10 GW wells and 10 leachate sumps Monitored 10 SW locations Collected 13 LNAPL samples
May 2020	Gauged 48 GW wells and 16 leachate sumps Sampled 4 GW wells and 16 leachate sumps Monitored 13 SW locations, sampled 5
August 2020	Gauged 86 GW wells and 16 leachate sumps Sampled 61 GW wells and 16 leachate sumps Monitored 13 SW locations, sampled 5
December 2020	Gauged 59 GW wells and 16 leachate sumps Sampled 4 GW wells and 16 leachate sumps Monitored 13 SW locations, sampled 5

Leachate Level Monitoring

Monitoring Type	Frequency
Leachate Sumps and Mound 3 GW wells	Undertaken monthly

Landfill Gas Monitoring

Monitoring Type	Frequency
Perimeter Gas Monitoring Bores	Undertaken monthly
Surface Emission Monitoring	Annually (undertaken in July 2020)

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Resolve

ISSUES FACED IN THE REPORTING PERIOD

February 2020:

- unable to sample LS06 (blockage),
- unable to sample WELL15, L01, L04, L05, L07, L08, L11, L12 (viscous LNAPL)
- unable to monitor 3 SW locations (overgrown vegetation)

May 2020:

• unable to sample L06 (blockage)

August 2020:

- unable to sample L01, L03, L05, L09, L12, L13 (LNAPL thickness and viscosity)
- unable to sample leachate from WELL15 (LNAPL to base of well)
- unable to sample MB36 (LNAPL present) (sampled MB37 instead)
- unable to sample MB85 (blockage)

December 2020 :

- unable to sample L01, L02, L03, L12 and L14 (sump infrastructure and damaged sample equipment)
- unable to sample L06 (blockage), unable to sample leachate from WELL15 (LNAPL to base of well)
- unable to monitor 4 SW locations (overgrown vegetation)

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Examples of overgrown vegetation at the Moonee Ponds Creek

ISSUES FACED IN THE REPORTING PERIOD

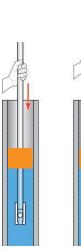


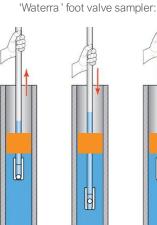
Discrete interval sampler.

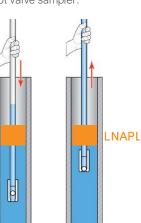


Sump well head:









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Appendix 3: Environmental auditor response to questions

RESPONSE TO SUBMITTED QUESTIONS



Q1) On the linked report 2.3 Topography & Hydrology refers to 'The collected storm water (from the mounds) is directed to the rock pond...'

At the last meeting I asked a question concerning the 4 settling ponds/dams on the Cleanaway site & was advised that runoff from the mounds was directed to these settling ponds and used to water the mounds.

What is correct?

With the settling ponds/dams and what they have been used for in the past & now what if any testing has been done under these dams to check if they are not leaking/cracked or what substances/gases etc are present under them and are they harmful now or in the future.

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Q1) STORMWATER FLOW



Both are correct. Stormwater at the site flows to the Rock Pond and the settling ponds, based on where the stormwater is collected on site.

This figure demonstrates that stormwater collected at the southern and western landfill perimeter (in blue) is directed to the Rock Pond, while stormwater collected at the northern landfill perimeter (in orange) is directed to the settling ponds.

As for harm, groundwater and landfill gas monitoring is undertaken at the site in the vicinity of the settling ponds.

Development on the buffer land would be subject to environmental assessment to determine risk and suitability.

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Q2) How many of the 29 bores installed in 2020 result from the 2018 Post Closure Audit Report?

Were the bores all perimeter bores? If not where else were the bores placed?

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Q2) LANDFILL GAS MONITORING NETWORK



These 29 landfill gas bores were installed as a result of the Landfill Gas Extraction Improvement Plan (Resolve, 2020) which noted that spacing of landfill gas bores and the proximity of these bores to the waste were inconsistent with the recommendations of appropriate EPA guidelines.

All bores installed are perimeter gas bores (>20 m from waste). The term 'perimeter bore' is used to describe a landfill gas bore that is used to assess landfill gas within 'subsurface geology at the landfill boundary' as per the EPA landfill guidelines.

The location of all landfill gas bores is provided on Figure 7 of the ACR and is repeated here.

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Q3) It is noted that the following locations were unable to be sampled:

- LS01, LS02, LS03, LS12 and LS14: unable to sample due to sump infrastructure and damaged sample equipment.
- LS06: unable to sample due to a blockage.
- WELL 15: unable to sample LNAPL to base of well.
- MPCL02, MPCL12, MPCL13 and Lower MPCL: unable to access due to overgrown vegetation.

What action was taken to enable access to the above listed locations in a timely manner? If no action taken, why not?

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Q3) DECEMBER 2020 MONITORING EVENT



What action was taken to enable access to the above listed locations in a timely manner? If no action taken, why not?

- L01, L02, L03, L12 and L14: unable to sample due to sump infrastructure and damaged sample equipment
 - We changed sample methods and devices between the Dec 2020 monitoring event and the first monitoring event in 2021.
 - With the new method, leachate sumps L01, L03, L14 were able to be sampled.
 - L02 and L12 remain unable to be sampled due to viscosity of LNAPI
- L06: unable to sample due to a blockage
 - This leachate sump has historically been blocked.
 Leachate level was still able to be gauged. Sampling methodology was changed for the following monitoring event (Q1 2021) and sample was successfully collected.

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What action was taken to enable access to the above listed locations in a timely manner? If no action taken, why not?

- WELL 15: unable to sample LNAPL to base of well
 - This well has historically presented with LNAPL to the base of the well, and has not been sampled(no Leachate to sample). LNAPL however was collected from this well in the February 2020 event.
 - WELL15 has been removed from the leachate and LNAPL monitoring program as per the latest Auditor verified EMP (Resolve, 2021), however remains as a contingency well in the event that LNAPL can not be sampled from a well in the same area.
- MPCL02, MPCL12, MPCL13 and Lower MPCL: unable to access due to overgrown vegetation
 - Neither Resolve nor Cleanaway have permission to remove vegetation from the Moonee Ponds Creek.
 - Locations in the Moonee Ponds Creek further upgradient and downgradient are still monitored





Q4) It is noted that the following locations were unable to be sampled:

- LS01, LS02, LS03, LS12 and LS14: unable to sample due to sump infrastructure and damaged sample equipment.
- LS06: unable to sample due to a blockage.
- WELL 15: unable to sample LNAPL to base of well.
- MPCL02, MPCL12, MPCL13 and Lower MPCL: unable to access due to overgrown vegetation.

What impact upon the water quality assessment does the inability to sample the above locations have overall?

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Q4) DECEMBER 2020 MONITORING EVENT



What impact upon the water quality assessment does the inability to sample the above locations have overall?

- L01, L02, L03, L12 and L14: unable to sample due to sump infrastructure and damaged sample equipment, LS06: unable to sample due to a blockage and WELL 15: unable to sample – LNAPL to base of well
 - One of the main reasons for sampling leachate and LNAPL within the sumps is to ensure that the correct set of analytes are included in groundwater and surface water monitoring.
 - This was a key component of the recent EMP update and was able to be completed with the dataset available.
 - There are further works being completed over the remainder of 2021 monitoring events as we increase the Leachate and LNAPL data base with new data.
 - The leachate chemistry is well known at this point and leachate samples provide limited additional information for water quality assessment.

What impact upon the water quality assessment does the inability to sample the above locations have overall?

- MPCL02, MPCL12, MPCL13 and Lower MPCL: unable to access due to overgrown vegetation
 - Limited impact to water quality assessment nearby locations further upgradient and downgradient from these were able to be sampled.

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Q5) The table accompanying para 6 refers to Well ID L1 to L14. The same Well ID occurs elsewhere. Is there a table or something which links this nomenclature to one of the figures? It appears from Figure 3 that L1 to L14 may be TUL-LS01 to TUL-LS14; is this assumption correct?

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Q5) LEACHATE SUMP ID

Correct, L01 to L14 was used interchangeably with LS01 to LS14 and TUL -LS01 to TUL -LS14. Consistent nomenclature is intended to be used going forward, in accordance with the EMP (which is L01 to L14.

EMP (Resolve 2021) Sump ID	Corresponding Sump ID	Corresponding Sump ID
L01	LS01	TUL-LS01
L02	LS02	TUL-LS02
L03	LS03	TUL-LS03
L04	LS04	TUL-LS04
L05	LS05	TUL-LS05
L06	LS06	TUL-LS06
L07	LS07	TUL-LS07

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Q6) How serious is the breaching of the Target Leachate Levels? Does this mean a pumping program to reduce levels and if so what happens to the leachate? Given the landfill is below the water table is this not a result of fluctuations in the water table or is it that the cap is allowing a greater ingress of rain water than it should?

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Resolve

Q6) LEACHATE LEVELS

Leachate target levels were set for the site based on assumption: around how water levels would change over time.

What we are now seeing is that conditions within the landfill are changing at a slower rate than first thought. This has resulted in target levels continuing to be breached.

These charts (taken from the 2019 Audit report) show the liquid levels in two of the sumps (L01 and L14). The data gap between mid 2014 and early 2019 is due to an issue with the survey elevation for the sumps.

The data demonstrate a slowly decreasing trend. The breaching of target levels is not suggesting that leachate levels have increased. Leachate levels have always been above the target levels

However, there are current investigations underway (Trend Assessment and a Hydrogeological Assessment) to investigate any implications of the slower than expected level decrease.



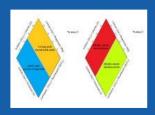
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Q7) Would it possible to get a simple plain language explanation or presentation of how Piper Diagrams work and how an expert would interpret such diagrams referring to the importance or otherwise of the coloured areas as per the diagrams below.





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Resolve

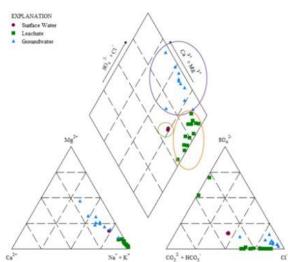
Environmental CTC

Q7) PIPER PLOTS

Piper diagrams can be used to plot the hydrogeochemical signature of water samples (groundwater, leachate, surface water) by analysis of major ions.

By plotting leachate and groundwater, distinct differences can be shown between the chemical signatures for leachate compared to groundwater and where mixing may be occurring.

In the piper plot for Tullamarine, leachate samples (orange circle) are characterised by sodium, potassium and chloride. Whereas groundwater samples (purple circle) are characterised by higher proportions of magnesium and chloride. Where surface water samples (green circle) are still characterised by sodium and potassium, they do not have a dominant anion which leads to samples being more of a mixed type than the groundwater or leachate samples.



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Q8) PFAS was detected in surface water. Prima facie the source of the PFAS would be the soil used to cap the mounds but there may be other sources. Is there an explanation for the presence of PFAS in surface water? If the top soil is contaminated what action is being taken to rectify the situation?

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Q8) PFAS IN SURFACE WATER

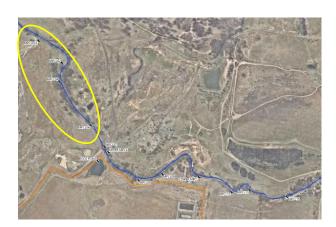


PFAS was detected in all surface water monitoring locations (which are along the Moonee Ponds Creek) over the reporting period. As previously presented, stormwater from the cap is captured in the Rock Pond and the settling ponds.

A number of these locations (circled in yellow) are upgradient from the site, indicating that the source of PFAS is likely to be upgradient from the site.

Assessing the source of a particular contaminant (especially one as widely used as PFAS, e.g. aviation, fire fighting) can be difficult for surface water as the contaminant can enter the creek via many different pathways (for example):

- Stormwater outlet drain from the airport.
- Overland flow from surrounding land (including the landfill).
- Groundwater emanating from below the airport, landfill and other land uses.



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Q9) The 2019 Post Closure Audit Report identified a number of perimeter bores that were too close to the Landfill mass for which it was recommend they be correctly located. Are the above bores from which methane exceedances were recorded those impacted by the 2019 report, ie are the bores listed above too close to the landfill mass or are the results from relocated bores?

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Q9) METHANE IN PERIMETER GAS BORES

"TUSG08C/D, TUSG18A/B, TUSG20B/C/D, TUSG21C/D, TUSG22C, TUSG29B/C, TUSG30B, TUSG31B) exceeded the action level of 1% v/v on one or more occasions. These boundary bores with exceedances are located on the eastern, southern and western boundaries."

Of these bores, TUSG08C/D, TUSG18A/B, TUSG20B/C/D, TUSG22C were too close to the landfill mass.

The remainder (bores TUSG21C/D, TUSG29B/C, TUSG30B, TUSG31B) are on the southern boundary of the site (circled in yellow).



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Q10) "As such, sampling was conducted at all leachate sumps/wells at the site where possible. It is noted, LNAPL was very thick at several leachate monitoring locations in terms of both depth of layers and consistency, and samples of the underlying leachate were unable to be retrieved as it was difficult to penetrate the LNAPL layer via bailer sampling technique."

The letter refers only to bailer sampling. Are there not other methods by which suitable leachate samples could be obtained? Pumping comes to mind Were other sampling techniques tried and if not, why not?

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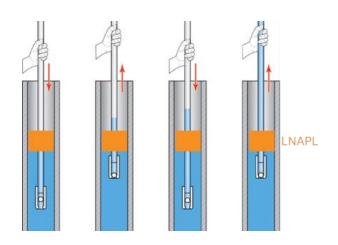
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Q10) COLLECTION OF LEACHATE SAMPLES

As previously presented, leachate sampling presented with a number of issues over the reporting period as the LNAPL is very viscous and it is difficult to break through to reach the underlying leachate. Equipment needs to be 'pushed through' the LNAPL, and at a depth of 20 -30 m this becomes ineffective with certain types of equipment.

Leachate sampling techniques were developed over the year, culminating in the successful collection of samples in the monitoring round in Q1 2021 using the 'Waterra' foot valve.



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Q11) "Leachate was only able to be sampled at monitoring location TUL-WELL13" If other sampling techniques had been used to extract leachate how many other wells or bores could have been sampled?

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Q11) COLLECTION OF LEACHATE SAMPLES

Leachate was only able to be sampled at monitoring location TUL -WELL13 in the Q1 2020 GME.

The lack of success of sampling leachate in this round (using the bailer technique) prompted a thorough review of available monitoring techniques and equipment throughout the year. Interval sampler method was used in Q2 2020, 'Waterra' foot valve method in Q3 2020, and then interval sampler method in Q4 2020.

Using the sampling technique developed over the reporting period, 12 leachate sumps were able to be sampled in the Q1 2021 GME using the 'Waterra' foot valve method.

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Q12) What action has been taken by Cleanaway to clear the bores so that the leachate sample can be retrieved? If no action why not?

There appears to be quite a number of blocked bores and I am wondering what impact these blockages may have on the overall picture of groundwater quality / contamination.

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Q12) LEACHATE SUMP BLOCKAGES

Leachate sump L06 has a blockage at approximately 18 m below surface.

Inability to sample this leachate sump (L06) does not limit the understanding of groundwater quality as

- 12 other leachate samples were able to be collected in the Q1 2021 GME
- The leachate chemistry is well known at this point and leachate samples provide limited additional information for water quality assessment, and
- · Leachate elevations are still able to be recorded within this sump.

Difficulties in sampling leachate beneath viscous LNAPL appear to have been largely overcome by the adoption of the 'Waterra' foot valve sampling technique.

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Resolve Environmental 239G Bay Street Brighton VIC 3189 (03) 9591 0173 info@resolveenvironmental.com.au





Reference	Actions – 26 March 2021	Update – August 2021
0321_1	P. Fennelly to inform the community on what records they received from the owner.	Cleanaway purchased the site in ~2007 from previous ownership and have various records of data & reports dating back to 2003/04* *All data & reports may not have been captured.
0321_2	P. Fennelly to update the community on rectifying the flare at the next meeting.	Flare Control System is proposed to be updated to ensure remote purging during an unexpected outage or shutdown.
0321_3	P. Fennelly to talk to A. Dodd about potential collaboration to monitor growling grass frog populations.	No further discussions have been made.
0321_4	P. Fennelly to update the community on the kangaroo management plan at the next meeting.	Currently Kangaroo's enter the site through various paths and utilise the resources available. No further immediate actions are proposed at the moment.
0321_5	P. Fennelly to update the community on the groundwater pipe design at the next meeting.	We believe this refers to the stormwater pipe connection; we are currently in the process of updating the Site stormwater management plan. This will outline any requirements for a stormwater pipe and its design.