

## **TULLAMARINE LANDFILL Community Consultation Group**

### **COMMUNITY MEETING NOTES**

**30th March, 2016**

**6:00pm for 6:30 – 9:15 pm**

**Hume Global Learning Centre - 1093 Pascoe Vale Road, Broadmeadows**

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#### **Meeting Purpose:**

***To provide an update on site rehabilitation.***

#### **Attendees**

**Community:** Sam Cetrola, Russell Nilsson, Lolita Gunning, Ovi Clements, Helen van den Berg, Jos van den Berg, Frank Rivoli, Graeme Hodgson, Peter Barbetti, Mick Colaci, Harry van Moorst, Kim Westcombe, Julie Law, Prue Hicks, Cr Helen Patsikatheodoru (Hume City Council)

**EPA Victoria (EPA):** Jeremy Settle (Senior Environment Protection Officer, EPA Victoria)

**Cleanaway:** Mark Globan (Regional Manager Post Collections VicTas), Kieren McDermott (Environment Specialist), Mick Beljac (National Landfill Gas & Environment Manager), Alan O'Brien (Environment and Technical Manager), Olga Ghiri (Stakeholder and Community Relations Manager)

**Guests:** David Corrigan, Kleinfelder

**Apologies:** Edward Hood (Head of Engineering & Compliance, Cleanaway), Bruno Pronesti (Finance Business Partner, Cleanaway), Alistair Nairn (Advisor - Community & Environmental Partners, EPA Victoria)

**Facilitator** - Jen Lilburn

**Note taker** – Andrea Mason

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#### ***About these notes***

*Notes were taken and produced by Andrea Mason. 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. Additional comments received after the meeting have been highlighted as such.*

*These notes will be posted on the Tullamarine Community Information page on the Cleanaway website <http://www.cleanaway.com.au/community/major-project/tullamarine-closed-landfill-vic/> and will be available to the general public. Meeting participants should advise Andrea Mason or Jen Lilburn if they would like their name removed from this public 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 Items and Actions from meeting

<b>Welcome, Jen Lilburn</b>
<b>Update on Cleanaway changes, Olga Ghiri</b> <i>Action 300316_1: Update TLCCG Statement of Purpose with new Cleanaway company name and review statements.</i>
<b>Community Consultant Assessment, Jeremy Settle</b> <i>Action 300316_2: EPA to provide updates on the Community Consultant Assessments at future TLCCG meetings.</i>
<b>Community Perspectives on Outstanding Issues, Harry van Moorst, Helen van den Berg</b> <i>Action 300316_3: EPA and Cleanaway to review the presentations and respond to questions raised in the community presentations at the Mar 30 TLCCG. Those questions that have been answered previously should be highlighted.</i> <i>Action 300316_4: Cr Helen to provide a response to the question: Who is responsible to pay for compensation to an affected industry in the buffer land in the future?</i> <i>Action 300316_5: EPA to provide a response regarding monitoring for any effects from the airport vibrations on the integrity of the landfill.</i> <i>Action 300316_6: EPA to send the Best Practice Environmental Management (BPEM) to the TLCCG members.</i>
<b>Flare Sampling Process Update, Alan O'Brien</b> <b>Well Testing Update</b> <b>Stormwater Connection and Wetlands Update</b> <i>Action 300316_7: Cleanaway to provide detail regarding the design of the stormwater treatment in a 1:100 year event.</i> <b>Groundwater Report Update</b> <b>Update on Rezoning of Buffer land</b> <b>General Business – Hot Loads in Trucks</b>
<b>Wrap Up, meeting dates &amp; close, Jen Lilburn</b> <i>Action 300316_8: Olga to arrange a meeting date that suits everyone at least one month after the Groundwater Review is tabled.</i>

### Item 1. Welcome, Jen Lilburn

Jen Lilburn (Convenor) welcomed everyone and general introductions were conducted. The meeting aimed to provide an opportunity for the community members to articulate their thoughts regarding outstanding issues related to the landfill operation and plans.

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### Item 2. Update on Cleanaway changes, Olga Ghiri

Olga provided an overview of recent structural changes to the company which means that it is now Cleanaway which is an Australian company. The change is reflected in a new website and branding <http://www.cleanaway.com.au/>. The new Chief Executive Officer, Vik Bansal was appointed mid 2015. Mark Globan was welcomed as the new Regional Manager Post Collections VicTas. The continuity of other staff members was appreciated by the community.

*Action 300316\_1: Update TLCCG Statement of Purpose with new Cleanaway company name and review statements.*

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### Item 3. Community Consultant Assessment, Jeremy Settle

Jeremy stated that EPA Victoria has committed funds to address community questions with the reports regarding the landfill.

The scope of the project is to use an external consultant, chosen by the community, to review the methodology used, assumptions made, assessments and conclusions in the documents including the EHA LNAPL Extraction Report, the community report and response, and Kleinfelder Hydrogeological Assessment. The 53X on the bufferland will NOT be reviewed as part of this project.

EPA has been working with Helen V, Graeme and Harry to develop this project and is in the process of engaging the preferred international consultant. No timeline can be given yet.

The funding was welcomed by the community. This is a first for the EPA and is in response to community concerns regarding the independence of reports tabled to date. The consultant has to meet EPA Victoria standards.

**Action 300316\_2:** EPA to provide updates on the Community Consultant Assessments at future TLCCG meetings.

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### Item 4. Community Perspectives on Outstanding Issues

#### Terminate Tullamarine Toxic Dump Action Group (TTTDAG)

**Helen van den Berg, Secretary**

*Helen read from the following text:*

I don't wish to go into chapter and verse on numerous closure commitments given and broken over the years. The records of Tullamarine and Community Links Environment group (TACLE) were given to TTTDAG in 2006. They describe the community campaign from 1977 to 1988 they reveal the community's persistent call for

- better management of the landfill,
- the regularity and unacceptability of obnoxious odours,
- concerns about pollution of the aquifers below the dump,
- the lack of enforcement by EPA,
- the communities and workers worries about exposure to airborne toxic chemicals from both the dump and its fires.

We have also interviewed some of those concerned workers and residents.

Included in the TACLE record is a media release (copies are available) from Cleanaway on 30 September 1982 which states:

A faded image of a newspaper clipping. The text is partially obscured but clearly shows the words 'AUCTION!' and 'LOTS 1 & 2 WRIGHT STREET, WESTMEADOWS.'

That is consistent with Cleanaway's policy statements. On 31 July 2015 at the Award of the Waste Management Association of Australia Mr. Jenner said,

*"enabling large buffer zones ensure minimal environmental nuisance. We have ensured that there are no residents within 500m of the landfill, and in most directions the distance is well over a kilometre. Our innovative design and adoption of technology are paramount to our success."*

We [TTTDAG] hope your [Cleanaway] policy that applies to active landfills can be fully extended to the closed leaking Tullamarine landfill because that would meet the community's expectation. And buffers, we know, are created for upset conditions and post closure scenarios have their own set of possible upset conditions. Given the dump is leaking and the extent of groundwater contamination is still unknown, even though we have often asked for its full delineation, we think the buffer's retention is absolutely essential to giving the local community some peace of mind about this hazardous facility. How do you think it feels to be left wondering if your family is getting any odourless carcinogenic gases in their homes?

We know Cleanaway is capable of meeting the community's expectation, because in 2008 you voluntarily withdrew your EPA endorsed proposal to expand the dump. We do feel that the evidence you gave at the panel hearing that you had accepted 325,000 m<sup>3</sup> of waste on a license for 177,000 m<sup>3</sup> of waste was significant in that decision. You simultaneously relinquished the EPA endorsed Tank Farm Proposal which would've allowed you to store 200,000 L of oils at Tullamarine. We then began to hope for a positive outcome in any further consultations.

From 2008 we urged the extraction of Light Non-Aqueous Phase Liquids (LNAPL) prior to capping, as we believed it would be easier to do it then. That's was ignored. We asked for a World's Best Practice Cap and got an adequate cap designed in 2001. The panel reports included the information that Cleanaway is not intending to develop the actual landfill site in the future Yet they made two approaches to council to rezone the dump and the buffer once it was capped.

We all know the frustrating process experiences that occurred between 2009 –2013. We achieved an independent facilitator and note taker in August 2013 - 4 years after our initial request.

In 2009 the very first time we were due to discuss LNAPL the agenda was unilaterally changed for the company to announce that the buffer land would be sold! Uproar ensued. And here we are in 2016 still trying to resolve the same issues of LNAPL and the buffer land.

In 2013 we were willing to start yet again and focus on the future. We have repeatedly stated we appreciate the new format. Though tonight we will yet again get reports, which we haven't received prior to the meeting, so we have no time to study them. Once again we state it would be fairer to the community if we were given a month to read and consider reports so that meetings could then address points of clarification and that discussion be captured in the notes that are recorded.

We also acknowledge that the north wall has been completed and landscaped to the community's satisfaction.

We contested Cleanaway's assertion that the flare couldn't be enclosed and gases monitored. Thankfully it is now enclosed but not yet performing to specifications. So toxic chemicals have been, and perhaps still are being released, into the local air. Dioxin we know can carry for kms! Who wants a share of that when it is toxic at one part per trillion!

Time lines continue to fail and we are still talking about LNAPL and wondering about Dense Non-Aqueous Phase Liquids (DNAPL). We don't think three bores not showing DNAPL means there is no DNAPL in the dump, especially when you only went to 70 m twice. Three out of 125 bores is hardly representative. Another question we have not had adequately answered is, how was the change in volumes of LNAPL derived? No evidence was ever given to us as to how that estimation was derived at, so we won't just accept an assertion.

In 2014 LNAPL trails were deferred whilst we dealt with a rezoning issues. We asked for three methods of LNAPL extraction to run simultaneously, that was altered to just the one method, endorsed by a panel that had no community representative on it.

We look forward to the report EPA has commissioned to review the LNAPL solutions.

Our request for a health study on the people exposed to gases from the dump has never been met. Instead EPA commissioned the Cancer Council to do a cancer study They could only use the existing register which records the patient's address at the time of diagnoses. Given that includes unexposed people it is not a reflection of the exposed group. Because of the prevalence of hormone-disrupting chemicals a cancer study of the general population does not address all our health concerns. Our anecdotal evidence now includes 216 cancers among people exposed to fumes within 1.5 km of the dump and other health concerns.

The recently published book, *Poison Spring*, by US EPA officer V. Valiantos with McKay Jenkins, details how the US EPA was captured by the chemical industry. It reveals how EPA's own rigorous testing showed that company's "safe exposure levels" were absolutely wrong. The EPA was prevented from introducing their standards because the chemical companies supported enough politicians' re-election costs, to gain the number of votes required to defeat the EPA's proposed legislation. Thus the company's standards prevailed. So standards may well change in the future. Given the default position here is to use US EPA standards when Australia hasn't set any – the ramifications of these revelations may affect us too.

I almost forgot - where are the long awaited contingency plans?

Today we are still hoping that the current leadership of Cleanaway can be progressive and acknowledge the need for their company to voluntarily make an act of restorative justice and maintain their buffer. You could also initiate testing of groundwater in the residential area.

The LNAPL issue rests with EPA. We greatly appreciate the review of the proposed "solution" for we most certainly need convincing that leaving LNAPL to dissolve and volatilize is the safest way forward for us and the aquifers - the waters of future generations.

Thank you

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### **Community concerns about the safety of the Tullamarine Landfill**

**Western Region Environment Centre, Harry van Moorst**

*Harry's spoke to the following presentation.*

#### **Overview**

Background:

- Huge amounts of highly toxic liquid chemicals until 1988 – unlined cells/mounds
  - **A legacy of millions of litres of LNAPL, PCBs & Dioxins**
- 2005-6 Cleanaway applied to expand with piggyback cells and a large LNAPL "Tanks Farm" on site
- 2006 it was revealed that Cleanaway had dumped **more than DOUBLE the licenced amount** of waste in the landfill!!

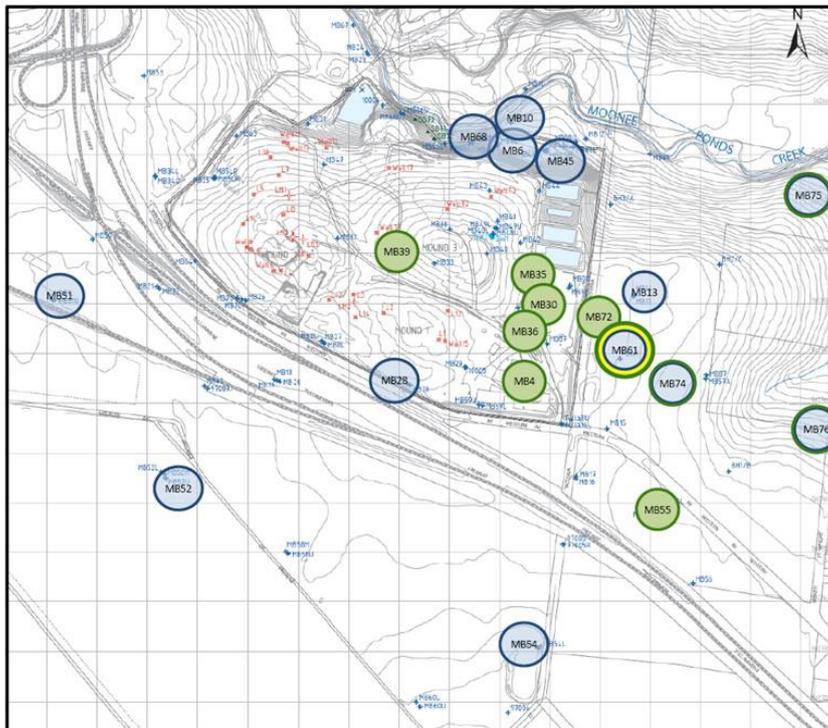
Post-Closure:

- Third-rate cap – 'adequate' but not Best Practice:
  - It does not have a 'biotic barrier' (900mm) which is a US cap standard
  - A sufficiently transmissive drainage layer
  - A 30cm 'loamy topsoil' layer which would reduce the leakage rate by 40%
  - **Consequently the Tulla cap will leak "3 to 6 times" more than the US standard cap!**

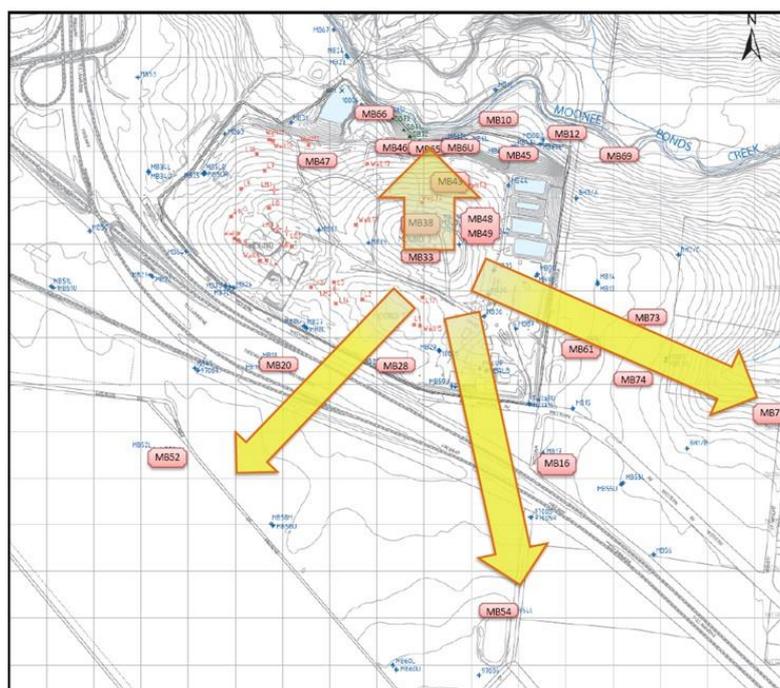
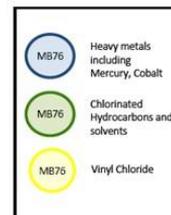
#### **Things We know:**

Groundwater and LNAPL - 2012

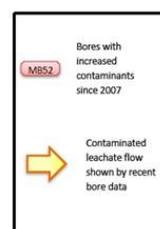
- *"concentrations of most chlorinated hydrocarbon compounds in newly installed wells MB61L, MB72 and MB74 seem to be increasing"* (Audit 2012, p. 43)
- *"concentrations were exceeded (for chlorinated solvents) in a number of off-site locations on **Transpacific buffer land** (Audit 2012, p. 14)"*
- *Therefore we are suspicious of the Kleinfelder claims that there is now a sudden trend towards decreasing concentrations in the still spreading groundwater plume;*
- *Kleinfelder's claim that there was a clear trend was refuted by their own acknowledgement (in the appendix) that the results of their tests **were not supported statistically.***



**MAP 2**  
**Increased  
contaminant  
concentrations**



**MAP 1**  
**Evidence of  
Expanding  
Contaminated  
Groundwater  
Plume**



**Groundwater and LNAPL – 2014 Audit**

- Vinyl Chloride was found at **up to 300 times the accepted level for surface water** in bore MB61 and 47 times the level in MB85;
- *“chlorinated solvents, including Vinyl Chloride, trichloroethylene and dichloroethane compounds exceed adopted drinking water criteria”* (Audit 2014, p.71);
- *“A plume containing chlorinated solvents above adopted assessment criteria can be traced from the central site boundary to the south-eastern corner of the audit site”.* (p. 74);

How far under the houses has the plume moved?

- Estimates by auditors indicate that it has “possibly” moved below the houses opposite the site.
- **Despite numerous requests by residents over many years the extent of the plume has still not been established!**

Health Risks from LNAPL

- Health risks include carcinogenic chemicals, many volatile: e.g. Vinyl Chloride, Trichloroethene (TCE), and many others such as dioxins;
- LNAPL containing such contaminants is now proposed to be left in the ground but:
- **“The large volume of LNAPL in-side and out-side the landfill cells remains an ongoing source of contamination of groundwater”** (Audit 2012, p. 48) Vinyl chloride is “a Group A, human carcinogen” and a mutagen amongst other toxic impacts.
- Hydrocarbon Ethene is classified as **highly flammable, a Class 3 carcinogen, very odorous and readily able to become ‘re-chlorinated’** to produce polyethylene (TCE), and Vinyl Chloride again.
- Hydrocarbon Ethene was defined as **“innocuous”** by TPI US Expert Henry Kerfoot in response to Helen's question about vinyl chloride chemistry.

Dioxin

- “There truly are no safe doses for these hormone-altering chemicals”

Laura Vandenberg, *Environmental Health News*, March, 2012.

- “TCDD’s acute toxicity kills animals at lower levels than any other man-made chemical...”

15<sup>th</sup> of August 1983 USEPA *Draft Dioxin Strategy*

- “... humans are probably a more sensitive species to the effects of dioxins than animals Cate Jenkins USEPA Project Manager and Chemist summary report *“Diseases Significantly Associated With Agent Orange And Dioxins”*”

Air Pollution – Emissions from the Flare

Assessment of flare emissions showed that there are significant air quality exceedances in:

- Sulphur Dioxide – 4 times the ambient level
- Chromium – 30 times the ambient level
- Sulphuric Acid – 48 times the ambient level

We don’t yet know the ‘destruction efficiency’ of the flare:

“Destruction efficiency will be assessed following the next phase of sampling” – **USEPA requires 99.9999%**

**for Hazardous waste combustion with “dioxin-listed wastes”.**

- Total Particulates (PM10) - 116 times the ambient level
- No testing was done for PM2.5 – the most dangerous particulates!
- WHY Not? because *“not required”* and because the flare *“is unlikely to produce significant particulate matter during the combustion process”!* (This despite the large quantity of PM10 particulate matter!)

### Things we Don’t Know

There are many uncertainties:

- The actual amount of LNAPL in the landfill – estimates range from 20 million litres to 60+ million litres
- The flare emissions (as discussed)
- The extent of the plume
- The very large variances in the samples, e.g.:
  - for LNAPL samples used for Effective Solubility Testing the results for benzene varied from 10mg/kg to 250 mg/kg (or 25 times). Similar variances with vapour concentrations varying from 16.14 mg/m<sup>3</sup> to 374.97 mg/m<sup>3</sup> or 23 times.
  - The same has been found for flare samples and LNAPL extraction viability samples.
- Such variances suggest either substantial changes in a very short time and/or substantial inaccuracies in measurement – **which is it?**
- Uncertainties about the actual constituents of the LNAPL as shown by:
  - Considerable variations over time;
  - Huge variations between wells and bores, even when in close proximity;
- Uncertainties created by very limited sampling;
- Uncertainties created by limitations to the scope of studies, e.g.

- the Cardno LanePiper Audit 2012 (p. 17) it is acknowledged that the audit does not include *“Emissions to air and related health risks due to landfill gas or volatile organic compounds from the landfill cells and LNAPL or groundwater on site.”*
- Cardno LanePiper *Buffer Zone Audit* report (2014) p. 51 acknowledged:
  - *“uncertainties associated with the presence of multiple carcinogens in groundwater and the potential for preferential pathways in fractured basalt beneath the site”.*
  - Subsequent vapour testing on the buffer site, required by the auditor to clarify the uncertainties, still resulted in large variances (e.g. benzene with samples showing a variance of 0.17 mg/m<sup>3</sup> to 5.4 mg/m<sup>3</sup> (approx 32 times), Toluene 0.01 mg/m<sup>3</sup> to 1.0 mg/m<sup>3</sup> (100 times)

#### **And of greatest importance:**

- We are somewhat ignorant of the impact that many of our chemicals have on human health:
  - Of the 85,000+ chemical compounds currently in use around the world less than 15% have been even partially tested for their toxicological effect on humans – there have been very few combinations of chemicals on human health tested to date.
  - We tend to assess acute impacts, based on “threshold concentrations” but have little evidence of the more chronic impacts of lower concentrations;
  - **In short, there is a great deal of uncertainty about what a ‘safe level’ of exposure might be.**

#### **Our limited knowledge and understanding:**

- We determine ‘safe’ levels largely on experiments with animals and attempt to apply these to healthy humans. **We have little information on the impacts on not so ‘healthy’ humans or on children.**
- In the 1970s a very poisonous insecticide (EPN) was partly responsible for the decimation of bee colonies in the US (along with other neurotoxins). The USEPA approved the spraying of such chemicals over crops in massive quantities.
- It was also discovered that when it was mixed with other agro-chemicals the mixture was even more virulent and deadly;
- **There have been very few assessments of combinations of chemicals on human health to date.**

#### **Limitations of USEPA Standards:**

- Even today the USEPA has permitted the spraying of neurotoxins in herbicides and insecticides that involve similarly toxic substances (some of which are prevalent in the Tullamarine landfill) – and the bees continue to disappear!
- **The US EPA took nearly 40 years to ban some of the neurotoxic chemicals** due to industry pressure and faked company ‘research reports’ that went unchallenged by top EPA staff;
- The USEPA approves chemical use based largely on the self-reporting of companies rather than through rigorous, genuinely independent scientific research. The chemical companies hold the political /economic power and the EPA regularly bows to their demands

**Most of Victoria’s EPA standards are derived from the USEPA – can we trust them?**

#### **Inadequate Risk Assessments**

- Failure to assess risks entailed in “upset conditions” or worst case scenarios, e.g. Flare failure, Cap failure, Fire, Increased volatilisation and contaminant emissions
- **No clear contingency plans for such “upset conditions”.**

#### **Inadequate LNAPL extraction**

1. Limited sampling – one month, no follow-up – simply a claim that the LNAPL was “Immobile”;
2. Predetermined but limited technology (baildown technology) – despite agreement at the TLCCG meeting that several technologies would be tried possibly in parallel;
3. **Alternative technologies should now be trialled.**

#### **And now TPI wants to remove the residents’ buffer zone!**

- 50 commercial/industrial lots, 1000+ workers on site daily, Substantial increase in traffic and noise
- Potential issues with monitoring and management of the plume as it moves further beneath the buffer and residences, Visual amenity impacts

**No Nett Benefit!**

## European Buffer Zones for Hazardous Waste

### Landfill

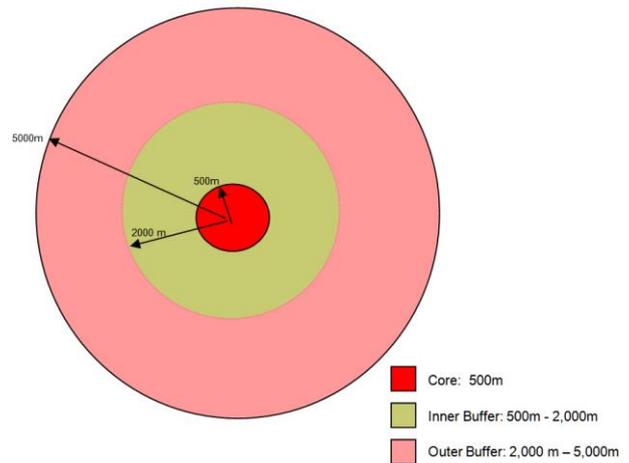
- Italy: 1km
- Council of the European Union Directive: 2km
- Hazardous Waste Advisory Committee (2000):

**For 30 Years!**

### **If the following are required under regulations and laws:**

- Landfill buffers for putrescible landfills must be 500m – (EPA does not have formal buffer distances for hazardous landfills!)
- Minimum 30-year post-closure!

Figure 6: Buffer distances for repositories and long term containment facilities



**Then why do we have to continually make these efforts to ensure that the Buffer remains as a buffer? (or is EPA redefining 'buffer' to include commercial/industrial developments?)**

**Question: Where in the Act does it says that the buffer land does not remain sterile?**

**Response, Jeremy:** It is stated that in order to undertake any development in the buffer, appropriate assessments need to be undertaken. The legislation provides an avenue to allow development in the buffer of a landfill through this process. The level of assessment required is determined by local government planning and in the case of the Tullamarine landfill this means auditing and monitoring.

**Question: Is that the role of the 53X planning application?**

**Response, Jeremy:** In the Tullamarine situation, the 53X is required because the land use is proposed to be changed to a more sensitive use.

**Comment:** EPA as the referral body has the responsibility of informing Council to make decisions as Council doesn't do its own studies. It relies on EPA auditors to do this.

**Response, Jeremy:** The EPA has established a process where an Auditor provides independent verification of an assessment and EPA provides the oversight and rigor to the audit process - however the role of the EPA is not that of the planning authority.

**Question: Why is the land called a buffer when there is an option for it to be developed if safe to do so? I don't understand why EPA allows a process that can override the community concerns. What if the audit is faulty? The assessment process needs to be 100% safe with LNAPL, cancers etc. and the community can't clean it up.**

**Response, Jeremy:** The policy is set up so the default buffer is 500metres - if a site or developer does not work to determine site specific risks the buffer is 500 metres. However, a site specific assessment can be undertaken to develop in this buffer. As previously mentioned in the case of Tullamarine, because there is a proposed land use change this risk assessment has been captured within an audit under 53X of the EP Act.

**Question: Who monitors the development to ensure the ongoing safety? The onus sits with the community to make claims and provide the necessary evidence if they believe they have been affected which is extremely difficult for them.**

**Response, Jeremy:** At Tullamarine there are a conditions of the statement from the environmental audit as per section 53X of EP Act, for Cleanaway to provide ongoing access to the bores in the bufferland for monitoring of the groundwater using easements in the proposed industrial estate.

**Question:** What has EPA, as the referral authority, said to council regarding the buffer land development?

**Response, Jeremy:** EPA has responded to council members via letter previously stating that EPA had no objections to the proposed development which I believe some TLCCG community members have seen.

**Comment:** The community is not happy with the lack of common sense regarding the development of the buffer land. The development adds another layer of complexity and potential issues to an already complex risk situation. Council does not have the capacity to monitor these risks in the future and the community will have to live with the possible health consequences from mutagenic chemicals and clean air.

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**Harry's presentation continued:**

**Restorative Justice**

- In accordance with restorative justice TPI should compensate the community that has long endured the social, amenity and environmental impacts of living near the toxic dump including the stress, possible health impacts, loss of groundwater rights, etc.
- **Develop your buffer zone as an open space park with trees and shrubs that can assist with transpiration of excess moisture and absorption of methane, etc.**

**Community Expectations**

- Further trials of LNAPL extraction methods, including *total volume* and *dual pumping*;
- The continuing extraction of LNAPL to the greatest extent (regardless of the reduced amounts being, or expected to be able to be, extracted).
- Flare monitoring improvements to ensure accurate, timely and comprehensive assessments (without the problems of measurement limitations that fail to test for important contaminants).
- The establishment of 'sentinel bores' at the outer edges of the plume
- From the furthest point it could have travelled at this time, then working backwards with bores until the actual extent is established (and then monitored).  
There will shortly be a substantial TPI report made available on the products of "natural attenuation", viz. the products of: Biodegradation, Volatilisation and Dissolution.

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**Response, Alan:** The community has raised a lot of issues that Cleanaway needs to consider and then provide a response. The presentations have provided a helpful list of concerns.

**Response, Jeremy:** Many of these questions have been raised before and there may be areas where there will be ongoing disagreement.

**Response, Olga:** Some of the questions have been answered already.

**Action 300316\_3:** EPA and Cleanaway to review the presentations and respond to questions raised in the community presentations at the Mar 30 TLCCG. Those questions that have been answered previously should be highlighted.

**Question: Who is responsible to pay for compensation to an affected industry in the bufferland in the future?**

**Response, Jeremy:** I can't answer that as the answer would be very situation specific.

**Response, Mark:** This question would be best answered by someone with planning expertise in Council.  
(Cr Helen had left the meeting due to another commitment)

**Action 300316\_4:** Cr Helen to provide a response to the question: Who is responsible to pay for compensation to an affected industry in the buffer land in the future?

**Question: Is there any monitoring being undertaken on the impact of the vibrations from the Tullamarine Airport on this landfill, particularly given the likelihood of a new runway?**

**Action 300316\_5:** EPA to provide a response regarding monitoring for any effects from the airport vibrations on the integrity of the landfill.

**Question: What is the EPA's position on the use of the precautionary principle in decision making?**

**Response, Jeremy:** The precautionary principle is one of 13 principles stated in the EP Act. None are used in isolation but the precautionary principle underpins the conservative thresholds and guidelines in the State Environment Protection Policies (SEPPS) and the landfill Best Practice Environmental Management (BPEM). E.g. the fluctuations in the landfill gas monitoring results are taken into consideration in assessing risks.

**Comment:** The community disagrees strongly as the recommendations for the thresholds are based on assumptions and we don't believe that the assessments are conservative enough. If the precautionary principle had been used, then Cleanaway would be still pumping LNAPL from the landfill.

**Response, Jeremy:** The precautionary principle in the EP Act directly makes reference to practicability of environmental measures and ensuring a risk assessment of options. Other factors are also considered in making decisions such as EPA has licenced this landfill in the past and in moving forward needs to oversee its management to minimise impact to community and environment.

The standards have a review period set up and many of SEPPs are now up for review and bioaccumulation is an issue that will be considered as the relevant SEPP is over 10 years old and under review.

**Question: Are you going to tell Council of changes to the SEPP?**

**Response, Jeremy:** The review process may take some time to complete. The current standards are those that need to be applied to any current decisions.

**Comment:** The community feels that the EPA is essentially guaranteeing the safety of the landfill to the community, based on opinion of the Auditor (one person) and without taking into consideration all the potential and unforeseen scenarios/risks to the community e.g. weather conditions, chemicals, airport vibrations. The community is relying on EPA to protect the community.

**Response, Jeremy:** The Auditor's recommendations are based on his high level of expertise and support team, which take into consideration plausible scenarios and proposed responses. The community have submitted similar comments to the Ministerial Advisory Committee (MAC) including the perceived conflict of interest that the business pays for the independent auditor, we will have to wait until June for the MAC and State Governments response.

**Question: What law can enforce that a 30-year buffer zone is maintained?**

**Response, Jeremy:** The ruling requires a 500m buffer if there is no development, but if a development is proposed that includes appropriate measures then building in the buffer zone is permitted.

**Action 300316\_6:** EPA to send the Best Practice Environmental Management (BPEM) to the TLCCG members.

The BPEM can be found using the following link:

<http://www.epa.vic.gov.au/our-work/publications/publication/2015/august/788-3>

**Question, Mick B: Does the community propose that if the buffer was kept as open space, it would be accessible to the public?**

**Response, Harry:** The accessibility would have to depend on whether it was safe for the public to access.

**Response, Helen V:** Initially it should be fenced and well signed to keep people out and not compromise the monitoring.

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#### **Item 5. Cleanaway Updates, Alan O'Brien**

The full presentation can be seen in **Attachment 1**. The Tullamarine Landfill Site Rehabilitation Roadmap can be seen in **Attachment 2**.

#### **Stormwater**

The design of the planned improvements for the stormwater system is expected to be completed by mid 2016. The expected outcomes are increased frog habitat area, less concrete, a softer landscaping approach, less likelihood of erosion, improved water quality and increased safety.

**Question: What is the flow rate of the stormwater entering the creek?**

**Response, Kieren:** In ordinary circumstances there is expected to be no or low outflow rates. It may increase if there is a high rainfall event.

**Question: Is there any evaporation from the rock pond? What would happen if the pond was nearly full and then there was a heavy rain event?**

**Response, Kieren:** There has been significant evaporation this summer. The overflow has to be tested as part of the redesign process.

**Response, Alan:** The improvements to the rest of the site above the pond will also improve the control of stormwater flows.

**Question: Have climate change effects and the increased possibility of 1:100 year events been incorporated into the treatment plans for runoff from the landfill cap?**

**Action 300316\_7:** *Cleanaway to provide detail regarding the design of the stormwater treatment in a 1:100 year event.*

**Question: What are the management plans for the woody weeds around the rock pond?**

**Response, Kieren:** The woody weeds will be treated using a cut and paste method. The area will be replanted with native plants.

**Question: What is the capacity of the rock pond and what is the management plan for the sediment over time?**

**Response, Alan:** The rock pond will be monitored. Upstream measures will help reduce silting; it will be desilted if necessary and the sediment would be properly disposed.

**Response, Mick B:** The objective is to reduce the energy of the water, the sediment load and to keep the water as still as possible in the rock pond.

#### **Landfill Gas Monitoring**

Three new landfill gas perimeter boreholes are planned for NW of the landfill on airport land to provide information regarding the exceedences of BPEM levels.

**After the meeting:** *Jeremy confirmed that there are exceedences but EPA has not issued a notice for the installation of the new bores.*

**Question: Who asked for the new landfill gas bores?**

**Response, Alan:** The new bore sites were based on a review undertaken by Cleanaway. Part of the objective is to target the different geological area close to the airport.

#### **Groundwater**

Cleanaway is currently updating the Management and Monitoring Plan. Information on current monitoring frequency will be provided with Technical Review information. The Groundwater Review has been delayed as Cardno requires more time. It will be a large report and Cleanaway is offering a briefing session when the report is tabled - hopefully before the next meeting.

**Comment:** The community members would prefer enough time is allowed to read this prior to any meeting or briefing.

There are five new proposed locations for groundwater monitoring boreholes offsite in residential areas. This is not a regulatory requirement but has been actioned as part of Cleanaway's review in consultation with EHS and Kleinfelder.

**Comment, Jeremy:** EPA discussed with Cleanaway the need to delineate the plume as an essential part of Monitoring Natural Attenuation.

**Comment:** The community welcomes this proposal by Cleanaway which shows that they are prepared to move in response to report recommendations.

**Question: Why are these bores not further away from the landfill? What is the methodology?**

**Response, Alan:** These bore sites are still in the planning stage and Cleanaway can provide further justification and the methodology for these before the bores are drilled towards the end of 2016. The Groundwater Review will help inform that process. It is hoped that these sites will provide valuable information that may provide the necessary justification for further bore sites in the future.

**Response, Mark:** The sites will require permits which may delay processes.

#### **Air quality/flare**

- Flare sampling for methane destruction efficiency will take place in April 2016.
- A second full emissions test is to be completed after the methane testing is undertaken during May/June when climate conditions are colder.
- Ambient air monitoring design and procedure is being developed by experts and will be ready in June.
- Ambient air monitoring will be undertaken concurrently with next emissions testing in second half of 2016.

**Question: Does the airport impact on the air monitoring results?**

**Response, Alan:** The airport emissions are incorporated into the background data for the air sampling.

**Question: Ektimo testing in 2015 showed that there was not 99.99% destruction of gases inside the flare stack. Are you making any alterations to the flare to achieve this level?**

**Response, Alan:** There needs to be a better indication of gas quality between the blower and the flare. The flare has been modified to provide new sampling points to allow the collection of data required and to demonstrate that the flare stack is achieving 99.99% destruction of gases.

**Question: Are you satisfied that the company which installed the flare has provided a good quality flare?**

**Response, Alan:** Yes, Cleanaway believes this flare stack should achieve its objective. We hope to alleviate community concerns regarding the destruction levels.

**Response, Mick B:** This testing will help Cleanaway standardise equipment across other landfills.

**Question: Has Ektimo overcome the issue of the lack of sensitivity in the sampling probes used in the previous flare tests in order to get a meaningful test results?**

**Response, Kieren:** Cleanaway will need to take this on board and refer to Ektimo.

#### **Contingency Measures**

The latest data for February 2016 shows methane emissions of around 50 - 55% in the flare stack, instantaneous flow rates of ~ 200m<sup>3</sup>/hr and the stack temperature ~900°C. The figures show stability of the flare results that fall within the design parameters of the flare stack and therefore should meet the expected destruction efficiencies. The flare testing will hopefully validate that this is the case.

**Question: What is the expected lifetime of the unit and maintenance requirements?**

**Response, Mick B:** The expected life of the flare stack is 6-7 years and the skid is 15 years. General maintenance takes about an hour. The main valve can be turned off safely. If it needs to be for an extended period of time, another flare can be brought in.

#### **Hot loads in trucks**

**Question: What procedures are in place to protect against waste trucks that have hot loads or have been caught on fire?**

**Response, Alan:** In early February, a compacter truck came into the landfill with a smouldering load. The Metropolitan Fire Brigade was called and the fire was extinguished. This is not a regular occurrence and the cause is not always known. There are procedures that have been developed. When a truck returns to the depot with a hot load, they are isolated and the MFB is called. Drivers are trained to deal with these loads and all carry fire extinguishers. If the truck is not full the load can be compacted to reduce smouldering or burning.

## **Item 6. Next Meeting and Close**

**Action 300316\_8:** *Olga to arrange a meeting date that suits everyone at least one month after the Groundwater Review is tabled.*

**Meeting finished 9.15**

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## **ATTACHMENTS**

Att1\_Cleanaway\_Tullamarine Community Presentation 30.3.16

Att2\_TLCCG-roadmap