

POLLUTION ABATEMENT NOTICE

No. 2015/1

(Issued pursuant to section 77 of the *Waste Management and Pollution Control Act*)

Issued to: **City of Palmerston**

Name : Ricki Bruhn, Chief Executive Officer
Address : PO Box 1, Palmerston NT 0831
Tel: (08) 8935 9902
Fax: (08) 8935 9900

**In relation
to premises:** Archer Waste Facility Landfill
240 Elrundie Avenue
Archer NT
Lot 04302
Town of Palmerston

Reason:

I, William (Bill) Freeland, the Chairperson of the Northern Territory Environment Protection Authority (NT EPA) pursuant to the *Waste Management and Pollution Control Act* ("the Act"), believe on reasonable grounds that:

1. The City of Palmerston is the owner or occupier of 240 Elrundie Avenue, Archer NT, Lot 04302 Town of Palmerston (the premises); and/or
2. The premises was used for the disposal of waste by burial (a landfill), previously authorised under Environment Protection Licence (EPL69), which expired on 31 August 2012; and
3. The landfill activity has caused, or is likely to cause pollution resulting in environmental harm, namely to groundwater and to receptors beyond the boundary of the premises.

Action Required

On and from the date of this notice:

General Requirements

1. The City of Palmerston is required to implement procedures to detect and prevent:

- a. Further waste from being deposited at the landfill;
- b. Fires from occurring at the premises;
- c. Smoke, dust, fumes or odour from causing an environmental nuisance or environmental harm beyond the premises boundary; and
- d. Litter, waste or contaminants from being discharged from the boundary of the premises.

Landfill Gas Management

- 2. The City of Palmerston must take all reasonable and practicable measures to manage landfill gas emissions.
- 3. Within 4 months of this notice you are required to undertake a Landfill Gas Risk Assessment in accordance with Appendix 1 to determine the requirements for landfill gas monitoring, landfill gas collection and treatment or other landfill gas management controls.
- 4. A qualified person, registered under section 68 of the Act, must review the Landfill Gas Risk Assessment and proposed landfill gas monitoring, landfill gas collection and treatment or other landfill gas management controls, and provide:
 - a. a recommendation for the implementation of suitable control measures;
 - b. an explanation detailing how emissions of landfill gas will comply with the action levels specified in Appendix 2;
 - c. an indicative timeframe for implementation of control measures; and
 - d. endorse the viability of any proposed landfill gas management controls.
- 5. A copy of the Landfill Gas Risk Assessment and qualified person review must be provided to the NT EPA within 6 months of this notice, and must endorse the viability of landfill gas management controls.

Leachate Management

- 6. The Hydrogeological Assessment (HA) report previously submitted to the NT EPA (GHD – *Report for Archer Waste Facility Monitoring, Hydrogeological Assessment* August 2012) must be reviewed by a qualified person (registered under section 68 of the Act) within 4 months of this notice to identify:
 - a. information gaps in the HA report, if any;
 - b. risks associated with the HA and any gaps identified in 6(a);

- c. management actions required to be implemented to address any gaps and risks identified in 6(a) and 6(b);
 - d. the maximum leachate levels that will not pose an unacceptable risk to the groundwater environment and that will allow for effective management of leachate; and
 - e. where leachate levels exceed the maximum level determined under the HA, an appropriate timeframe for achieving the maximum leachate level, taking into account the significance of the risks to the environment.
7. A copy of the qualified persons review must be provided to the NT EPA within 6 months of this notice.

Landfill Rehabilitation Plan

8. Within 4 months of this notice you are required to develop a Landfill Rehabilitation Plan for the premises.
9. The Landfill Rehabilitation Plan must include:
- a. a timeline for implementation, which is not to exceed a period of 18 months from the date of this notice;
 - b. a cap design and a Construction Quality Assurance (CQA) plan for construction of the cap; and
 - c. a pre-settlement and post-settlement contour plan of the premises.
10. A qualified person, pursuant to section 68 of the Act, must review the Landfill Rehabilitation Plan.
11. A copy of the Landfill Rehabilitation Plan and qualified person review must be provided to the NT EPA within 6 months of this notice.
12. The qualified person shall confirm in writing that the proposed Landfill Rehabilitation Plan is consistent with the NT EPA *Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory* January 2013 ("the NT EPA Landfill Guidelines"), and the *Closed Landfill Guidelines* (EPA Victoria).

Aftercare Management Plan

13. Within 12 months of this notice, you must develop an Aftercare Management Plan for the premises that is consistent with the Aftercare guidance in the NT EPA Landfill Guidelines. The Aftercare Management Plan must, as a minimum, contain the following:
- a. inspection and maintenance of the landfill cap to prevent, control and remediate erosion, restore depressions, seal cracks and maintain vegetation;
 - b. inspection, maintenance and operation of the leachate collection and treatment system;

- c. installation, inspection, maintenance and operation of the landfill gas management system in accordance with the findings of Condition 6;
- d. inspection and maintenance of surface water control and collection infrastructure; and
- e. an Environmental Monitoring Program for the landfill.

14. A qualified person, pursuant to section 68 of the Act, must review the Environmental Monitoring Program required in 13(e).

15. A copy of the Environmental Monitoring Program and qualified person review must be provided to the NT EPA within 18 months of this notice.

16. The qualified person shall confirm in writing that the proposed Environmental Monitoring Program is consistent with the NT EPA Landfill Guidelines.

Notice Issued By :



Dr Bill Freeland

Chair

NT Environment Protection Authority

21/4/15

Date

1615

Time

Important Notice

Failure to comply with this notice is an offence under section 80 of the *Waste Management and Pollution Control Act* and may incur significant penalties and/or other statutory action.

This notice takes effect on the date on which it is served upon you. Pursuant to section 108 of the *Waste Management and Pollution Control Act*, **you have the right to apply for a review of the decision to issue you with this Pollution Abatement Notice. If you intend to apply for a review, YOU MUST MAKE AN APPLICATION NOT LATER THAN 7 DAYS after the date you were served with this notice.** For information on how to lodge an application for review, contact the Northern Territory Environment Protection Authority, telephone 8924 4218.

Pursuant to section 112 of the *Waste Management and Pollution Control Act* the person issued with this notice must fulfil certain obligations before selling, leasing, sub-leasing, giving or exchanging land, premises, a vehicle or business which is the subject of this Notice.

Office Use Only - Service of Notice

Personal or by Post : (Circle as appropriate)

If **Personal** : Served to : _____ at : _____

Date : / / Time : _____

By : Name : _____ Signature : _____

Agency : _____

If **Post** : Registered or certified mail no : 515524829018 22/4/2015

Definitions

contaminant	a solid, liquid or gas or any combination of such substances and includes: (a) noise, odour, heat and electromagnetic radiation; (b) a prescribed substance or prescribed class of substances; and (c) a substance having a prescribed property or prescribed class of properties.
discharge	allow a liquid, gas or other substance to flow out from where it has been confined.
environmental harm	(a) any harm to or adverse effect on the environment; or (b) any potential harm (including the risk of harm and future harm) to or potential adverse effect on the environment, of any degree or duration and includes environmental nuisance.
leachate	Any liquid produced by the action of water percolating through waste, and that contains contaminants.
Qualified person	a person registered under Section 68 of the <i>Waste Management and Pollution Control Act</i> .

References

[Closed Landfill Guidelines](#) EPA Victoria Publication 1490 (2012)

[Best Practice Environmental Management, Siting, Design, Operation and Rehabilitation of Landfills](#) EPA Victoria Publication 788.2 (2010)

[Hydrogeological Assessment \(Groundwater Quality\) Guidelines](#) EPA Victoria Publication 668 (2006)

[Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory](#) Northern Territory Environment Protection Authority (2013)

Appendix 1: Landfill Gas Risk Assessment (from *Closed Landfill Guidelines* EPA Victoria)

Introduction

The landfill gas risk assessment process described below is adapted from the risk assessment and gas generation and composition assessment procedure described in the UK Environment Agency publication LFTGN 03. A risk assessment based only on air dispersion modelling is not appropriate for a landfill gas risk assessment, as this does not consider sub-surface migration pathways.

The risk assessment approach, summarised below, involves:

- development of a conceptual model of the landfill and its surroundings
- hazard identification and risk screening
- quantitative risk assessment.

Conceptual model

A conceptual model for the landfill and surrounding environment should be prepared with regard to landfill gas generation and management. The model should include information on:

- the environmental setting of the landfill, including all receptors
- the pathways to receptors, including emission points for landfill gases and combustion products
- the nature of the waste
- landfill gas production forecasting and validation with on-site data. Where necessary (for example in the absence of robust data to inform a forecasting model) a landfill gas pumping trial should be undertaken. Advice on how to conduct a pumping trial should be sought from a specialist contractor.
- action levels to be met (Appendix 2 (BPEM Table 6.4))
- landfill gas perimeter bore monitoring
- landfill gas surface emissions monitoring
- the design of the landfill gas management system
- operational management and control measures to be implemented
- a hydrogeological cross-section.

The form and content of the conceptual model should be selected to reflect the scale and complexity of the site and be suitable for use in the risk assessment. Consideration should also be given to the potential requirements of the environmental auditor, who will be examining the landfill gas risk assessment as part of the environmental audit program.

Hazard identification and risk screening

The objective of the hazard identification and risk screening stage is to consider the information contained in the conceptual model to determine:

- the scale of risk - based on the landfill gas forecasting or pumping trial, the landfill gas monitoring results, the site design and the landfill gas management system
- the sensitivity of the receptors - their number, type and location
- the pathways to the receptors - for example, direct release to the atmosphere, sub-surface migration, indirect release to the atmosphere or direct release of combustion products
- prioritisation of receptors and impact assessment.

Quantitative risk assessment

The risk assessment should use the output from the hazard identification and screening to evaluate the risk to each receptor. The objective of the risk assessment is to determine if the landfill gas management and monitoring at the landfill site is sufficient to:

- enable completion of a representative quantitative landfill gas risk assessment
- mitigate any risks identified to receptors
- where the management and monitoring of landfill gas is not sufficient to enable the completion of a representative landfill gas risk assessment, the environmental audit which follows the risk assessment or risk assessment review should make recommendations to enable a representative landfill gas risk assessment to be undertaken
- where the management and monitoring of landfill gas is not sufficient to mitigate risks identified to receptors, to recommend what action needs to be taken. These recommendations should be included in the environmental audit which follows the risk assessment or risk assessment review.

Appendix 2: Landfill gas action levels (from *Best Practice Environmental Management* (Table 6.4) EPA Victoria)

Location	Parameter(s)	Action level and unit
Landfill surface final cover areas and penetrations through it	Methane	100 ppm ¹
Within immediate vicinity of penetrations through final cover	Methane	1000 ppm ¹
Landfill surface intermediate cover areas ² not within immediate area of any surface penetrations	Methane	0.1mg/m ² /second
Subsurface geology at the landfill boundary	Methane and carbon dioxide	1% v/v methane and 1.5% v/v carbon dioxide above background
Subsurface services on and adjacent to the site	Methane and carbon dioxide	1% v/v methane and 1.5% v/v carbon dioxide above background
Buildings/structures on and adjacent to the site	Methane and carbon dioxide	0.5% v/v methane and 0.5% v/v carbon dioxide above background
Landfill gas flares	Volatile organic compounds (excluding methane)	98% destruction efficiency
Biofilters	Methane	< 1.0 g/m ² /hr

1. Point of measurement is 5 cm from surface or point of discharge
2. Intermediate cover areas are those that have not reached final profile and are not scheduled to receive waste during the next three months.

Source: Table 6.4 of the *Best Practice Environmental Management, Siting, Design, Operation and Rehabilitation of Landfills* (EPA Victoria Publication 788.1) (2010)

