

30 April 2021

Alex Noble
Noble Hodge
Suite 29
Level 1, 22 St Quentin Avenue
Claremont WA 6010

Dear Alex,

Re: Audit Process and Contamination Status 115 Furniss Road, Darch (Lot 1 on Plan 69382)

1. Introduction

Vanessa Bryant of Senversa Pty Ltd has been engaged by Noble Hodge as a Western Australia (WA) Department of Water and Environmental Regulation (DWER) accredited Contaminated Sites Auditor (CSA) under the *Contaminated Sites Act 2003* (CS Act) for the property identified as 115 Furniss Road, Darch (Lot 1 on Plan 69382) (the site).

Up until 2008, the site was used for the disposal of Class 1(Inert) construction and demolition waste in accordance with the requirements of a Waste Disposal License (Ref 6832/11). Between 2008 - 2017 the site ceased operating as a landfill site and started a full scale recycling facility producing recycled fill products. In 2017 the site stopped receiving waste and since that time, the operations are limited to processing the current stockpiles on site.

Portions of the site have been the subject of soil, groundwater and landfill gas investigations conducted since 2005. The 2005 investigation identified the presence of up to 24m thickness of demolition and construction waste, including significant quantities of metal, wood, plaster board, and plastic fragments. In addition, bore records note the presence of asbestos containing materials (ACM), hydrocarbon residues and motor vehicle waste. Soil sampling from the waste body identified fragments of asbestos containing materials (ACM). Landfill gas samples taken from monitoring bores within the waste body showed the presence of methane in soils exceeding the upper explosive limit of methane in air (i.e. 15%v/v methane in air), carbon dioxide and a corresponding depletion in oxygen concentration, suggesting the production of landfill gas from within the waste body.

The site was classified by DWER in November 2009 as "contaminated – restricted use" noting that the following restrictions on use apply.

- The landuse of the Site is restricted to a managed "Landfill Site" only.
- All public access to the site should be prohibited.
- No soils or groundwater should be disturbed, excavated or abstracted without the implementation of a Health, Safety and Environmental Management Plan.



- The Site should be subject to an on-going program of on-site and perimeter landfill gas and groundwater monitoring.

The site has ceased receiving waste materials with operations limited to processing the current stockpiles on site. It is proposed to develop the site for commercial and potentially residential uses. The design of the site is currently at concept stage and likely subject to changes based on environmental, geotechnical and other planning and engineering constraints. It is likely that any such proposed use would trigger a condition for further assessment (and remediation/ management if required).

2. Audited Documentation

A large number of investigations have been completed to date. Most recently, EnPoint completed a Preliminary Site Investigation and Data Gaps Review which assembled the previous information for the site.

- EnPoint (2020) Preliminary Site Investigation and Data Gaps Review (PSI/DGR), 115 Furniss Road, Darch (Lot 1 on Plan 69382). 18 December 2020.

The EnPoint includes consideration of the following reports.

- Environmental Strategies WA (ESWA), 2013. 2012 Annual Environmental Monitoring Report, Non Organic Disposals – Lot 1441 Furniss Road, Landsdale. Prepared for Cell 6 Pty Ltd, January 2013.
- Environmental Strategies WA (ESWA), 2014a. 2013 Annual Environmental Monitoring Report, Non Organic Disposals – Lot 1 on Plan 69382 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, February 2014.
- Environmental Strategies WA (ESWA), 2014b. Suitability of Use of Waste Derived Material, Lot 1 on Plan 69382, Driver Road, Darch WA 6065. Letter report prepared for Department of Environment Regulation, November 2014.
- Environmental Strategies WA (ESWA), 2015. 2014 Annual Environmental Report, Non Organic Disposals – Lot 1 on Plan 69382 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, February 2015.
- Enpoint, 2016a. 2015 Annual Environmental Report, Non Organic Disposals – Lot 1 on Plan 69382 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, February 2016.
- Enpoint, 2016b. Groundwater Quality Assessment – 115 Furniss Road, Darch. Letter report prepared for Cell 6 Pty Ltd, July 2016.
- Enpoint, 2017. 2016 Annual Environmental Report, Non Organic Disposals – Lot 1 on Plan 69382 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, January 2017.
- Enpoint, 2018. 2017 Annual Compliance Report, Non Organic Disposals – Lot 1 on Plan 69382 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, February 2018.
- SMEC, 2009. Non-Organic Disposals Sampling and Analysis Plan. Prepared for Cell 6 Pty Ltd, July 2009.
- WSP, 2008. Preliminary Site Investigation, 50 Driver Road, Darch. Prepared for Cell 6 Pty Ltd, August 2008.
- WSP, 2009a. Landfill Gas Monitoring Report 1, 50 Driver Road, Darch. Prepared for Milind Pty Ltd, June 2009.
- WSP, 2009b. Landfill Gas Monitoring Report 2, 50 Driver Road, Darch. Prepared for Milind Pty Ltd, July 2009.



- WSP, 2009c. Landfill Gas Monitoring Report 3, 50 Driver Road, Darch. Prepared for Milind Pty Ltd, August 2009.
- WSP, 2009d. Groundwater Monitoring Report, 50 Driver Road, Darch. Prepared for Milind Pty Ltd, June 2009.
- WSP, 2012. 2011 Annual Environmental Monitoring Report, Non-Organic Disposals – 1441 Furniss Road, Darch. Prepared for Cell 6 Pty Ltd, January 2012.

Furthermore, based upon the outcomes of the DGR, some additional works were recognised as being required (see current status below). A sampling and analysis plan (SAP) was prepared by Ace Environmental to outline these works going forward.

- Ace Environmental (2021) Sampling and Analysis Plan – Furniss Road. January 2021.

3. Current Status

A large volume of environmental investigations and monitoring has been undertaken at the site from 2008 to present, for varying reasons including licence monitoring conditions, progressing the site towards reclassification by DWER and due diligence. In short summary, the key site contamination issues for the site are as follows.

- The site is underlain by fill material to depths up to 24m including significant quantities of metal, wood, plaster board, plastic fragments and ACM.
- Groundwater beneath the site contains metals (including arsenic and iron) and nutrients.
- Landfill gas, including methane and carbon dioxide, is present within the site, resulting from deterioration of organic material. Data collected between 2017 and 2020 show that the calculated GSVs indicate that the Site represents a 'very low risk' (Characterisation Situation (CS) 1), in accordance with Table 8.5 of CIRIA C665. However, during each of the monitoring events, with the exception of the 9/10/2020 monitoring event, there were methane and/or carbon dioxide concentrations above 1% and 5%, respectively. In accordance with the 'Additional Factors' outlined in Table 8.5 of CIRIA C665, it would be appropriate to conservatively adopt CS 2 measures.
- ACM within the landfill mass requires appropriate management.

Six key data gaps remain for the site as follows.

1. Confirm the nature and extent of contamination (if any) in Area A.
2. Further characterisation of the soil from Stockpile A for the presence of PFAS.
3. Characterisation of the soil generated from the processing of Stockpile E.
4. Investigation of the quality of soil surrounding the workshop, fuel and waste oil storage and waste processing infrastructure.
5. Further assessment of the gas regime within previously filled areas at the Site including along the eastern and southern boundaries (or alternatively seek permission from the owner of Lot 2 to access the existing monitoring well network along these boundaries) and fill in portions of the site where sampling densities were not sufficient for spatial coverage.
6. Further assessment of groundwater to confirm the nature and extent of PFAS and to confirm groundwater trends.



4. Audit Process

Works being undertaken by EnPoint and Ace Environmental and the auditing of those works, follows the general framework outlined in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 16 May 2013 (ASC NEPM), DWER Contaminated sites guidelines and other key guideline documents.

At the completion of assessment, a mandatory auditor's report (MAR) will be prepared which will fully document the works completed, assessment of the quality/completeness of investigations and recommendations for site suitability and site classification under the *Contaminated Sites Act 2003*. It would be prudent that conditions are applied at the **subdivision phase** to ensure that any lots created are suitable for their intended land use.

The results to date indicate that landfill gas is likely to fall under characteristic 1 or 2 which will require some gas management. These can easily be incorporated into building designs to mitigate risk and would require memorials on title and a site management plan. It is also possible that abstraction of groundwater within the shallow superficial aquifer may be restricted so that it is not used for drinking or non-potable purposes, although further assessment is required before this can be confirmed. At this stage, only arsenic and iron have been detected in groundwater which may be unaesthetically acceptable. No risks to human health or environmental receptors have been detected at this stage.

5. Closure

In summary, contaminated site investigation works are being undertaken in accordance with the requirements of DWER and NEPM and are being independently reviewed using an audit process. This audit is voluntary as there are no current requirements under the *Contaminated Sites Act 2003*, however, the audit still follows the same framework for a mandatory audit, providing oversight and rigor to the process.

Some contamination has been identified to date which requires further assessment, remediation and management. However, to date, nothing has been detected (or suspected) that is not able to be easily mitigated by remediation or management.

It would be prudent that conditions are applied at the subdivision phase to ensure that any lots created are suitable for their intended land use.

I'd be happy to further discuss with you or any other interested parties, including the City of Wanneroo. In the meantime, should you require any further information or have any questions regarding this site, please do not hesitate to contact me at vanessa.bryant@senversa.com.au or via mobile on 0419 951 532.

Yours sincerely,

Vanessa Bryant

Senior Principal
Contaminated Sites Auditor (WA)

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