

Attachment Q

Contamination Summary

May 2020

Ref. EIS201900047 Contamination Summary

David Murphy
Senior Design Manager
BLOC ACT

Dear David,

Canberra Brickworks EIS201900047 Contamination Summary

Introduction

Agon Environmental Pty Ltd (Agon) has prepared this Contamination Summary to address relevant conditions of the EIS201900047 for inclusion in the EIS being prepared by Umwelt Australia. The conditions addressed by the summary are as follows:

1. *Undertake a detailed contamination assessment of the 10 Areas of Environmental Concern (AEC) identified and in accordance with EPA guidelines.*
2. *Describe the composition and source of all fill intended for use at the site.*
3. *Provide details of any contaminants within fill to be used on site and identify additional areas of concern for assessment in accordance with Phase 2 investigations.*
4. *Provide a Remediation Action Plan for the proposed remediation works in accordance with EPA guidelines.*
5. *Provide an Unexpected Finds Protocol (UFP) for all earthworks and construction activities on site.*
6. *The site must be assessed and remediated in accordance with the guidelines endorsed by the EPA by a suitably qualified environmental consultant.*
7. *The adequacy of the assessment and remedial works must be independently audited by an EPA approved environmental auditor.*
8. *Prior to the commencement of remediation works the remedial action plan (RAP) for the proposed remediation works must be reviewed and endorsed by the auditor with a copy of the RAP endorsement provided to the EPA.*
9. *Prior to the commencement of development works Auditor interim advice indicating that the commencement of development will not impact on the on-going assessment and remedial works at the site must be reviewed and endorsed by the EPA.*
10. *Prior to the area being used for other purposes the findings of the independent audit into the site's suitability for its proposed and permitted uses from a contamination perspective must be reviewed and endorsed by the EPA*
11. *Consider the potential for contaminants within soils to impact on water quality as a result of soil disturbance.*

The Canberra Brickworks has been subject to Detailed Site Investigation (DSI) undertaken by SMEC Australia in 2016^{1,2,6}. The DSI outlines the assessment of Areas of Environmental Concern (AECs) in accordance with the relevant guidelines endorsed by the ACT Environment Protection Authority (EPA) in the ACT EPA (2017) *Contaminated Sites Environment Protection Policy* (CSEPP). The scope of the DSI was derived from the following documents:

- AECOM (2016) *Sampling Analysis and Quality Plan*.
- Robson Laboratories (2006) *Environmental Investigation Audit Report Yarralumla Brickworks Block 1 Section 102 Yarralumla Canberra Central ACT*.
- Robson Environmental (2010) *Review of Past Site Works and Indicative Costings for Further Assessment and Remediation, Yarralumla Brickworks, Yarralumla, ACT*.
- Robson Environmental (2016) *Contaminant Management Plan (CMP) Canberra Brickworks Remediation Project Portions of Blocks 1 and 20 Section 102 and Block 1, Section 127 Yarralumla, ACT 2600*.
- SMEC (2014) *Preliminary (Environmental) Site Investigation. Canberra Brickworks*.

The DSI built upon earlier intrusive investigations (SMEC 2014 PSI) and included the advancement of 63 test pits (TP01-TP63), collection of 20 surface samples, 18 boreholes (BH01-BH18) and installation (and sampling) of eight groundwater monitoring wells (MW01-MW08) in accordance with the AECOM (2016) SAQP. The findings of the SMEC (2016) DSI can be summarised as follows:

- **FILL^{2,11}** – FILL across the brickworks was observed to be variable across the site and was dependent on the location (i.e. thicker FILL in the former quarry). Dominant features of the FILL included discarded brick waste incorporating reworked natural soils (clays and siltstone/shale cobbles). To a lesser extent minor anthropogenic were observed including concrete pieces, glass, bitumen, ash and other anthropogenic.

Concentrations of contaminants were typically low in the FILL and met the adopted land use criteria for low density residential uses. In the absence of widespread contamination, the FILL could be reused within the site, as required, provided its geotechnical quality was considered.

- **Natural Soils** – No evidence of contamination in natural soils (Clay and bedrock) were reported.
- **AECs** – The AECs were assessed to the extent defined in the SMEC (2016) DSI, further assessment of the AECs was recommended and is described in the Arcadis (2017) *Data Review and Gap Analysis and Sampling, Analysis and Quality Plan (SAQP), Yarralumla Brickworks*.
- **Groundwater¹¹** – The SMEC (2016) DSI did not identify the presence of organic groundwater contamination exceeding the adopted assessment criteria at the sample locations assessed. Elevated metals (cadmium, nickel and zinc) were reported at some groundwater monitoring locations and was hypothesised to be of natural origin but may also include an anthropogenic component.

Further monitoring of groundwater is proposed in the Arcadis (2017) SAQP. Given the overall absence of contamination in soils at the site the movement (and/or removal) of soils during development is not expected to contribute to groundwater contamination.

The DSI was subject to review by ACT EPA accredited Contaminated Land Site Auditor Mr Lange Jorstad of Geosyntec Consultants (reference LBJ 14/02)^{6,7,9}. Interim Audit Advice (IAA#07) provided by the Site Auditor following review of the DSI concluded:

In summary, the results of investigation to date have only identified a small number of discrete contamination issues, and the widespread presence of fill material does not appear to be associated with widespread chemical or asbestos impact (this comment excludes the asbestos dump area). Uncertainties remain at the site, and unexpected contamination issues may still exist despite a reasonable level of judgemental and systematic investigation, particularly given the inherent variability of fill material. Identified data gaps should be addressed if and when access constraints allow, and it is recommended that any future development should proceed under the guidance of an environmental management plan (EMP) with an unexpected finds protocol.

Any supplementary investigations (plans and results) or management plans addressing contamination at the site must be reviewed and endorsed by an accredited contaminated site auditor. Any remediation action plans prepared to address contamination issues at the site must also be submitted to ACT EPA for review and approval, following the auditor's review and endorsement, prior to implementation.

IAA#07 indicates that the development of the site could occur provided an EMP (inclusive of unexpected finds protocol) is prepared and implemented. Further assessment (if required) of the data gaps could occur throughout development as access permits. On the basis of the IAA#07 the following documents have been (or will be) prepared:

1. **Arcadis (2017) Data Review and Gap Analysis and Sampling, Analysis and Quality Plan (SAQP³), Yarralumla Brickworks** - Outlines the further assessment of the AECs. The additional data to inform the management and/or remediation of soils during construction including categorisation in accordance with ACT EPA Information Sheet 4 for offsite reuse and/or disposal. The SAQP is subject to review and endorsement by the Site Auditor. The scope of the SAQP will be:
 - a. Advancement of an additional 40 test pit or borehole locations.
 - b. Installation of an additional 5 groundwater monitoring wells.
 - c. An additional sampling event of all groundwater wells.
2. **Placeholder Agon (2020) Site (Environmental) Management Plan, Canberra Brickworks (SMP⁵)** – Outlines the management of soils and unexpected finds during construction. The SMP requires data from the SAQP assessment scheduled to occur in late 2020. The SMP is subject to review and endorsement by the Site Auditor.
3. **Placeholder Agon (2020) Remediation Action Plan Canberra Brickworks (RAP^{4,8})** – Outlines the management of contaminated soils including evaluation of onsite encapsulation options during construction. The RAP requires data from the SAQP assessment scheduled to occur in late 2020. The RAP is subject to review and endorsement by the Site Auditor.

In the absence of widespread contamination in soils (FILL and/or Natural) and groundwater, development can occur subject to the implementation of the SAQP, SMP and RAP. This approach is consistent with IAA7. These documents outline the requirements for further assessment (in discrete areas), management of soils and remediation (where required) throughout development and provide a framework for development to occur from a contamination perspective.

The implementation of these documents is expected to be a condition of development via a Notice of Decision (NOD). The adequacy of implementation would be measured by a compliance review by the Site

Auditor prior, during and post development. This Site Auditor review would be the basis of the Section A Site Audit Statement (SAS), prepared by the Site Auditor, which will conclude the site to be suitable for the proposed land uses from a contamination perspective. The Section A SAS is subject to review and endorsement by the ACT EPA prior to occupancy of the site for the proposed land uses¹⁰.