

SITE CONTAMINATION AUDIT SYSTEM SITE CONTAMINATION AUDIT STATEMENT



INSTRUCTIONS

Requirements relating to site contamination audit statements are prescribed in the *Environment Protection Regulations 2009* (the Regulations) and include the following:

Regulation 67—Site contamination audit report summary and statement

- (1) A site contamination audit report required under section 103Z(4)(a) and (b)(i) of the Act¹ must include a summary of the findings of the site contamination audit to which it relates that—
 - (a) is in the form set out in Schedule 3 clause 8 for site contamination audit statements; and
 - (b) is certified by the responsible auditor in accordance with the directions contained in the form set out in Schedule 3 clause 8.
- (2) A site contamination audit statement required under section 103Z(4)(b)(ii) of the Act in relation to a site contamination audit must comprise—
 - (a) a copy of the summary in the site contamination audit report relating to the audit and itself be certified by the responsible auditor in accordance with the directions contained in the form set out in Schedule 3 clause 8; or
 - (b) a photocopy, faxed copy or electronic copy of the summary as certified by the responsible auditor in accordance with the directions contained in the form set out in Schedule 3 clause 8.

Audit reports and audit statements are required to be provided to the EPA under section 103Z(4) of the Act, which requires that:

103Z—Requirements relating to site contamination audits

- (4) A site contamination auditor must, on the completion of each site contamination audit for which the auditor is the responsible auditor—
 - (a) provide a site contamination audit report to the person who commissioned the audit; and
 - (b) at the same time, provide—
 - (i) a site contamination audit report to the Authority; and
 - (ii) a site contamination audit statement to the council for the area in which the land to which the audit relates is situated and any prescribed body².

Penalty: Division 5 fine.

Where the audit subject to this form has been completed subject to a restricted scope, the audit **report must be identified in the title as a 'Site contamination audit report (restricted scope)'**.

An audit subject to a restricted scope is not suitable to be relied upon by a planning authority for the purpose of making decisions as to whether land is suitable for a sensitive use or another use or range of uses.

Please ensure that all sections of the form are completed, requested information and attachments (where necessary) are provided and labelled as indicated.

¹ *Environment Protection Act 1993*.

² Refer to Regulation 68 of the Environment Protection Regulations 2009 regarding prescribed bodies.

SITE CONTAMINATION AUDIT STATEMENT

Please do not modify the form by moving or deleting sections or text, including these instructions.

Please ensure you are using the current version of the form (check the [EPA website](#)).

Refer to the current version of the EPA publication [Guidelines for the site contamination audit system](#), for further information. For any enquiries or questions relating to the site contamination audit system, including requests for editable versions of this form, contact the EPA Site Contamination Branch.

Site contamination audit statements must be included in the relevant site contamination audit reports, and be sent to:

[By mail](#)

Manager, Site Contamination Branch
Environment Protection Authority
GPO Box 2607
Adelaide SA 5001

Forms can also be **emailed in pdf format to the Manager and an auditor's allocated EPA coordinator.**

For any enquiries or questions relating to the site contamination audit system, contact the EPA Site Contamination Branch on:

Telephone: (08) 8204 2004

Email: [<EPAsitecontam@sa.gov.au>](mailto:EPAsitecontam@sa.gov.au)

SITE CONTAMINATION AUDIT STATEMENT

EPA GENI Reference

(EPA use only)

SITE CONTAMINATION AUDIT STATEMENT

(under section 103Z of the *Environment Protection Act 1993*)

This statement contains the summary of the findings of the site contamination audit set out in the site **contamination audit report titled: “Site Contamination Audit Report, 65-73 Mooringe Avenue, Plympton, South Australia (Rev0).**

(referred to in this form as ‘the report’)

dated : 18 January 2021

SECTION A: AUDITOR DETAILS	
Name of auditor*:	David Nunn
Auditor’s accreditation number:	2014035
Name of auditor’s company or business:	AAA Environmental Pty Ltd
SECTION B: AUDIT SITE DETAILS	
Auditor’s project reference:	20039
EPA reference:	61833
Name of audit site <i>[if applicable]</i> :	
Address of audit site:	65-73 Mooringe Avenue, Plympton, South Australia
Name of council for area in which audit site is situated <i>[if within council area]</i> :	City of West Torrens
Provide the following particulars** relating to the relevant land and the audit: ** <i>If insufficient space, details may be annexed to this form.</i>	
<ul style="list-style-type: none"> certificates of title of all the relevant land and an indication of whether the audit site comprises all or part only of the land shown on or described in the certificates of title 	Certificate of Title Volume 5899 Folio 549 (All) Certificate of Title Volume 5899 Folio 548 (All)
<ul style="list-style-type: none"> details sufficient to identify the location of the land, including section or allotment numbers, area and hundred and AMG co-ordinates (GDA 94, UTM 53 and 54) 	Allotment 75 in Filed Plan 6524 (All) Allotment 76 in Filed Plan 6524 (All) In the Area Named Plympton Hundred of Adelaide AMG coordinates: Zone: 54 H Easting: 275,960 m E Northing: 6,128,550 m S

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<ul style="list-style-type: none"> if the audit site comprises part only of the land described in the certificates of title, or if there is no certificate of title for the land comprising the audit site— survey plans prepared by a licensed surveyor 	N/A
<ul style="list-style-type: none"> audit plans indicating the location and extent of the audit site (which must comply with the guidelines issued by the EPA from time to time) 	Refer to Audit Figure 1 attached to this Site Contamination Audit Statement
SECTION C: AUDIT DETAILS	
Name of owner of audit site:	ACP Mooringe Pty Ltd
Name of occupier of audit site:	Vacant
Name, postal address and position of person who commissioned audit:	Mr Andrew Gerlach Chief Executive Officer ACP Mooringe Pty Ltd PO Box 542 Enfield Plaza SA 5085
Indicate authority of person who commissioned audit:	EPA Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Owner Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Occupier Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Developer Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> N Other [<i>please specify</i>]
Indicate reasons for audit [<i>indicate all reasons</i>]:	Required under the Development Act 1993 Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Required under the Environment Protection Act 1993 Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Other [<i>please specify</i>] Owner Request
If audit was required under the Environment Protection Act 1993, provide EPA reference number:	N/A
Indicate audit purposes [<i>indicate all purposes</i>]:	Determining the nature and extent of any site contamination present or remaining on or below the surface of the site Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Determining the suitability of the site for a sensitive use or another use or range of uses Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

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	Determining what remediation is or remains necessary for a specified use or range of uses Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>[NB: an audit may be required for all of the above purposes.]</i>
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If audit was required for development plan consent under the *Development Act 1993*, provide:

Name of relevant planning authority:	City of West Torrens
Development application number [if known]:	N/A
Site zoning:	Plympton Residential Development Plan Amendment
Proposed site use:	Residential

Date of commencement of audit:	28 June 2017
Date of notification of commencement of audit to EPA:	5 July 2017
Date of completion of audit:	18 January 2021

SUMMARY OF FINDINGS

A summary of the findings of the site contamination audit are presented below.

CONCEPTUAL SITE MODEL

Known and potential sources of contamination

The following potential sources of contamination were identified at the subject site:

- Bitumen works - comprising the use of imported bitumen emulsion and onsite mixing with preheated and dried aggregate and additives (binders, polymers, recycled bitumen and cutters);
- Importation of fill or soil for backfilling;
- Fuel, oil and bitumen storage in aboveground (AST) and underground (UST) storage tanks;
- Washdown bays;
- Triple interceptors;
- Vehicle service pits;
- Agricultural uses;
- Potential use of insecticides, pesticides and termiticides;
- Electrical transformers; and
- Potential asbestos containing materials.

The following potential offsite sources of contamination were also identified:

- Broad application of fertilisers and insecticides; and
- Metal forging, metal processing, smelting, refining and metallurgical works.

Chemicals of concern/interest

The chemicals of potential concern were identified to include the following:

- Metals;
- Polycyclic Aromatic Hydrocarbons (PAH);
- Total Recoverable Hydrocarbons (TRH) and Benzene, Toluene, Ethylbenzene, Xylenes (BTEX);
- Organochlorine Pesticides (OCP) and Organophosphorus Pesticides (OPP);
- Herbicides;
- Asbestos; and
- Nutrients.

Mechanisms of Contamination

The primary mechanisms of contamination are:

- Petroleum hydrocarbon contaminated soil and groundwater associated with leakage of USTs, ASTs, sumps and associated infrastructure;
- Localised impacts from historical site operations; and
- Contamination derived from offsite sources including soil and groundwater contamination.

A secondary pathway was considered be the leaching of contaminants from shallow soils to deeper soil and groundwater.

Potentially affected media

Based on the mechanisms of contamination mentioned above, the Auditor considers that each of those mechanisms could have contributed to site contamination. The potentially affected media includes soil, groundwater and soil vapour. Site sources of contamination are anticipated to be restricted to areas of the site where point source releases have occurred. Localised deeper soil contamination may be present in the hydrocarbon source zone where contaminants have migrated to groundwater.

The presence of petroleum hydrocarbon contamination in groundwater beneath the site raises the potential for soil vapour inhalation risk for future users/occupiers of the site.

Human and Ecological Receptors

The Auditor considers that the primary human receptors of concern are:

- Construction workers involved in redevelopment of the site and subsurface maintenance workers post redevelopment; and
- Future users of the site post redevelopment.

The Auditor considers that the primary ecological receptors of concern would be any vegetation which may be established as part of the site redevelopment.

Potential and Complete Exposure Pathways

The Auditor considers that of the possible potential exposure pathways which can be relevant for a contaminated site, the significant potentially complete pathways for the site are limited to:

- Contaminated fill material / soil > ingestion of site grown produce > future users of the site;
- Contaminated fill material / soil > direct contact exposure > construction workers associated with the proposed redevelopment works;
- Contaminated groundwater > direct contact exposure > construction workers associated with the proposed redevelopment works;
- Contaminated groundwater > ingestion and irrigation > future users of the site (occupants); and
- Contaminated groundwater > soil vapour exposure > future users of the site (occupants, visitors, subsurface maintenance workers) post development.

Soil vapour assessments completed at the site indicated that low concentrations of volatile contaminants were reported and were considered unlikely to pose any risk to construction workers or future occupants of the site, therefore this potential exposure pathway is incomplete.

Preferential Pathways for Vapour Migration

The Auditor considers that soil vapour contamination needs to be considered on the basis of the Detailed Site Investigation (DSI) findings. Slightly elevated vinyl chloride soil vapour concentrations exceeding screening criteria were identified in some soil vapour probes and this was associated with an adjacent offsite source of contamination.

Preferential pathways for vapour migration from either offsite potential sources or within the site were not present. As a result, preferential pathways for vapour migration are not considered to be relevant to the assessment of the condition of the site. The pathway for vapour migration from groundwater or soil to soil vapour and then to the surface environment is considered to be the result of vapour migration through the natural soil profile and not influenced by any preferential pathways.

The potential impacts of soil vapour concentrations on the proposed development air space have been considered as part of this Audit. It was concluded that the soil vapour is unlikely to pose an unacceptable risk to the proposed residential development under any likely residual contamination scenario.

Auditor Conclusion

The Conceptual Site Model has been developed and amended by Mud Environmental, in accordance with the requirements outlined in the ASC NEPM. The Auditor considers that the Conceptual Site Model accurately represents the complete exposure pathways as identified through the site investigations completed at the site.

AUDITOR'S DETERMINATIONS & OUTCOMES

The Auditor's determinations and outcomes are:

1. Nature and Extent of Site Contamination or Remaining on or Below the Surface of the Site

Human Health

The Auditor considers there is potential harm posed onsite to human health with respect to the remaining residual TRH impacted soils exceeding the ASC NEPM Management Limits and/or ASC NEPM vapour intrusion HSL A&B remaining within the saturated zone of the groundwater table within Excavation Areas 1, 2, 3, and 5 and remaining beneath the road reserve. No actual or potential harm to human health was identified for offsite areas, as concentrations of contaminants exceeding human health screening values were not identified during the investigations.

Water

The Auditor considers that site contamination of groundwater, as defined in the Environment Protection Act 1993, exists at the site with respect to reported concentrations of TRH C10-C40, benzene, xylenes, naphthalene, methyl ethyl ketone, 4-methyl-2-pentanone, acetone, manganese and nitrate (as N). Groundwater contamination therefore presents a potential harm to site receptors should the groundwater be extracted for potable or irrigation purposes.

Given that offsite wells have not reported concentrations of contaminants exceeding the laboratory reporting limits, the contamination appears to be confined to the site boundaries and is expected to remain within the site boundaries, therefore no actual or potential harm is posed to offsite receptors.

The Auditor concludes that contaminated groundwater can be appropriately managed through the implementation of conditions to ensure that there is no risk to future users of the site.

Environment

The Auditor concludes that concentrations of TRH F1, TRH F2, TRH F3, copper and benzo(a)pyrene may pose potential harm to plants and ecological receptors for backfilled soils placed at depths greater than 1 m across the site.

In addition, imported fill materials used to cap the site were noted to comprise a poorly graded natural sand and commercially sourced quarry materials. These materials were considered to have poor nutrient value and moisture retention and therefore would not be suitable for use as a growing medium for plants.

Therefore, if garden bed areas or grassed areas are proposed, the existing surface material should be removed to a depth of at least 0.5m and replaced with a suitable topsoil material for the growth of plants sourced from a commercial supplier.

No actual or potential harm to environmental health for offsite areas was identified during the investigations.

2. The Suitability of Site for a Sensitive Use or Another Use or Range of Uses

The Audit site is suitable for the following sensitive uses or another use or range of uses, including:

- (b) Sensitive use - residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments;
- (c) Sensitive use - childcare centres, kindergartens, preschools and primary schools;
- (d) Public open space such as parks, playgrounds, playing fields (eg ovals) secondary schools and footpaths;
- (e) Commercial use such as shops, offices, consulting rooms;
- (f) Commercial use such as petrol filling stations and warehouses;
- (g) industrial use such as light, service, general or special industry.

3. Restrictions on Site Use

The remediation of the site has been completed to comply with a specific development plan and TRH impacted soils remain in some areas of the site. Therefore the following restrictions will apply:

- The development of the site is restricted to the attached development plan. If the future redevelopment of the site includes any changes to the road alignments, a decrease in the number of individual allotments or construction of below ground structures, then another Site Contamination Audit will be required.
- A Civil Earthworks Environmental Management Plan (CEEMP) will be required to manage the civil earthworks, to ensure the health of construction workers is appropriately protected.
- The imported fill materials placed across the site are not a suitable growth medium for plants and will need to be removed and replaced with topsoil material should garden bed or grassed areas be proposed.

- Shallow groundwater at the site is contaminated and must not be extracted for any use without prior testing by a suitably qualified environmental consultant.

4. What Remediation is or Remains Necessary for a Specified Use or Range of Uses

The Auditor concludes that site contamination exists at the Audit site, however, no further remediation remains necessary for the range of uses detailed above.

AUDIT CONDITIONS AND RECOMMENDATIONS

Planning and Development

Condition 1: This Site Contamination Audit Report is directly referable and is based upon the layout and construction of the development shown and described in the attached development plan (Annexure 1). If the future redevelopment of the site includes any changes to the road alignments, a decrease in the number of individual allotments or construction of below ground structures (e.g. basements, carparks, etc.), then another Site Contamination Audit Report that considers the alternative land use must be prepared by a Site Contamination Auditor accredited under Division 4 of Part 10A of the Environment Protection Act 1993 and must be provided to the planning authority.

Condition 2: It is the responsibility of ACP Mooringe Pty Ltd to provide a letter to the planning authority from a Site Contamination Auditor accredited under Division 4 of Part 10A of the Environment Protection Act 1993, verifying that the Civil Earthworks Environment Management Plan (CEEMP) prepared for the site by Mud Environmental dated 1 December 2020 as described in Condition 3 below, has been appropriately complied with. A management plan is not required post development of the site.

Site Remediation and Management

Condition 3: The CEEMP prepared for the site by Mud Environmental dated 1 December 2020 (Annexure 2) must be implemented by ACP Mooringe Pty Ltd until the completion of civil earthworks. It is the responsibility of ACP Mooringe Pty Ltd to engage a Site Contamination Auditor accredited under Division 4 of Part 10A of the Environment Protection Act 1993 to provide written confirmation that the civil earthworks have been completed and that the CEEMP is no longer required.

Condition 4: The imported fill material placed over the entire site is not a suitable growth medium for the establishment of plants. Therefore, if garden bed areas or grassed areas are proposed, the existing imported fill material should be removed to a depth of at least 0.5m and replaced with a suitable topsoil material for the growth of plants sourced from a commercial supplier. It is the responsibility of ACP Mooringe Pty Ltd to:

- a. Engage a Contractor to excavate the existing fill from the proposed garden bed / grassed areas and replace the fill with suitable topsoil material for designated garden bed and grassed areas;*
- b. Engage a Site Contamination Auditor accredited under Division 4 of Part 10A of the Environment Protection Act 1993 to review the works completed and prepare written verification; and*

- c. *Forward the letter prepared by the Site Contamination Auditor to all recipients of the Site Contamination Audit Report confirming that these works have been completed.*

Water Restrictions

Condition 5: *Shallow groundwater at the site contains concentrations of TRH C10-C40, benzene, xylenes, naphthalene, methyl ethyl ketone, 4-methyl-2-pentanone, acetone, manganese and nitrate (as N) that preclude some uses of groundwater. Therefore, groundwater at the site must not be extracted for any use without prior testing by a suitably qualified environmental consultant to confirm that the condition of the groundwater is suitable for the proposed use. The SA Health Water Quality Fact Sheets ‘Using bore water safely’, ‘Bore water quality testing’ and ‘Guidelines for the use of alternative water supplies (private users)’ provide guidance on the safe use of bore water.*

Other Recommendations

The following recommendations are made:

- *Given the presence of TRH C10-C40, benzene, xylenes, naphthalene, methyl ethyl ketone, 4-methyl-2-pentanone, acetone, manganese and nitrate (as N) concentrations above various environmental values in the shallow groundwater at the site, it is recommended that EPA give consideration to the restriction or prohibition on taking underground water in the area of the site under Section 103S of the Environment Protection Act, 1993.*
- *This Site Contamination Audit Report does not address the geotechnical issues associated with development of the site. The site owner is therefore advised to seek independent geotechnical advice regarding the suitability of the site for its intended use and the suitability of any placed, backfill materials, or any other matters relevant to the geotechnical stability of the site.*
- *Following submission of this Site Contamination Audit Report, the EPA will aim to complete an administrative review to ensure compliance with the relevant legislation and guidelines within 21 days of receipt. It is recommended that the planning authority and the site owner do not action any of the conditions presented within this Site Contamination Audit Report until confirmation is received from EPA that the administrative review has been completed.*
- *Should surplus soils be generated during construction and maintenance activities on-site, then waste soils should be managed in accordance with relevant EPA guidelines and/or requirements of waste or recycling depots authorised by the EPA.*
- *Any soil / fill imported to the site should be classified as meeting the chemical and physical criteria for ‘Waste Fill’ as defined in the Environment Protection Regulations, 2009.*

[NB: A site contamination audit report must comply with the guidelines from time to time issued by the EPA.]

CERTIFICATION OF COPY OF SUMMARY FINDINGS

I certify that the summary of findings contained within or annexed to this statement represents a true and accurate summary of the findings of the site contamination audit set out in the report.

Signed*:



Dated:

18 JANUARY 2021

** This form must be completed and signed by the 'responsible auditor', being, under the Environment Protection Act 1993 and the Environment Protection Regulations 2009, the auditor who personally carried out or directly supervised the work involved in the audit.*

This site contamination audit statement must be lodged, on completion of the audit, with the council for the area in which the audit site is situated and any prescribed body (see regulation 68 of the Environment Protection Regulations 2009).

The report (including the summary of findings) will be recorded in the public register kept by the EPA under section 109 of the Environment Protection Act 1993.

LIMITATIONS AND RELEVANT INFORMATION

This Audit was conducted on the behalf of ACP Mooringe Pty Ltd for the purpose of assessing what investigation or remediation is necessary before the land is suitable for the proposed development for low density residential use as contemplated in the Environment Protection Act, 1993.

The information in this report is considered to be accurate with respect to information provided and conditions encountered at the Site at the time of investigation and considering the inherent limitations associated with extrapolating information from a sample data set. Subsurface conditions can vary across a particular site and no practical degree of sampling can ever eliminate the possibility that conditions may be present at a site that have not been represented through sampling. Actual conditions in areas not sampled may differ from predictions.

Since subsurface conditions (including contamination concentrations) can change within a limited period of time and space, this inherent limitation to the representation of site conditions provided by this report should always be taken into consideration particularly if the report is used after a delay in time. No responsibility for any changes in site conditions beyond the time of this investigation is assumed.

The assessment consultant included limitations in their reports. The Audit must also be subject to those limitations. The Auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which he had some control or is reasonably able to check.

It is not possible in a Site Contamination Audit Report to present all data which could be of interest to all readers of this report. Readers are referred to the referenced investigation reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

SITE CONTAMINATION AUDIT STATEMENT

The Auditor notes that any comments and conclusions provided in this document regarding the suitability of the Site for the proposed land use are implicitly limited to consideration of contamination related issues as defined under the Environment Protection Act, 1993.

AUDIT FIGURE 1



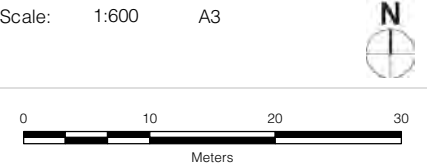
AUDIT REPORT FIGURE 1



Project:	65 - 73 Mooringe Avenue Plympton, SA
Client:	Adelaide Capital Partners
Mud Ref.:	ME-247
Revision:	1

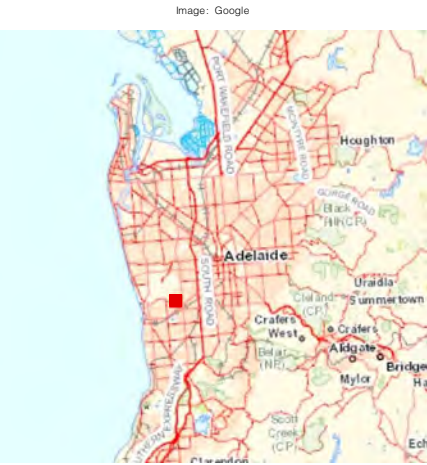
FIGURE 1

SITE LOCATION + FORMER LAYOUT (2017 PRE-DEMOLITION / REMEDIATION)



Coord. Sys.: MGA Zone 54 (GDA 94)

LEGEND	
	Former Site Infrastructure
	Former Underground Petroleum Tanks
	Site Boundary



SITE CONTAMINATION AUDIT STATEMENT ANNEXURE 1

Proposed Development Plan

