



**Attachment C: Site contamination audit system Interim Audit Advice form**

# SITE CONTAMINATION AUDIT SYSTEM INTERIM AUDIT ADVICE FORM



## INSTRUCTIONS

An audit is completed by the preparation of a site contamination audit report (audit report) and associated site contamination audit statement (audit statement) by the auditor.

There may be circumstances where a site contamination auditor (auditor), who has been commissioned to carry out a site contamination audit (audit), is not yet in a position to provide final audit determinations but is able to provide interim audit advice (IAA) based on the assessment of site contamination.

**Interim audit advice is not an audit report. It is advice provided by the auditor prior to the completion of the audit to support development process, inform regulatory decision making or for other reasons. In providing interim audit advice, the auditor provides an opinion based on the knowledge available at that time.**

**In some instances, unforeseen or unpredictable circumstances may occur following the provision of the interim advice that may affect that advice. Interim audit advice does not pre-empt or constrain the final outcome(s) of the audit or any conditions that may be placed by the auditor in the audit report.**

In order to provide interim audit advice, an auditor has to have been engaged to carry out an audit and be satisfied there has been sufficient assessment of the nature and extent of any site contamination to enable the auditor to make informed risk-based decisions. Further extensive assessment should generally not be required to delineate the nature and extent of site contamination, however remediation will generally not yet have been completed or may not be necessary. If the site has been identified as a source of offsite contamination, it is expected the nature and extent of the site contamination will have been delineated (subject to liability considerations). Where remediation is or remains necessary for a specified use or range of uses, a remediation options assessment and/or site remediation plan/strategy, which has been reviewed and endorsed by the auditor, should be provided to support the auditor's opinion.

Interim audit advice is to be completed by the 'responsible auditor' as defined by the *Environment Protection Act 1993* (the Act). This should be the same auditor who completes the site contamination audit report on completion of the audit.

The completion and submission of this form is not a requirement under the Act or the *Environment Protection Regulations 2009*. However, guidance on when this form should be used by auditors is detailed in the EPA publication, *Site contamination: Guidelines for the site contamination audit system*.

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

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

Please ensure that 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.

Completed interim audit advice (IAA) must be submitted digitally to the Site Contamination Branch in pdf format by email or file transfer. Upon receipt of IAA by the EPA, the EPA will provide notification to relevant parties and review the document for consistency with relevant legislation and EPA guidelines.

The completed IAA is also required to be submitted to the audit client. It must also be submitted to the local council and any prescribed body when it is prepared to support a development application.

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 SYSTEM

## INTERIM AUDIT ADVICE

SECTION A: AUDITOR DETAILS	
Name of auditor*:	Graeme Miller
Auditor's accreditation number:	2011031
Name of auditor's company or business:	Serversa Pty. Ltd.
SECTION B: AUDIT SITE DETAILS	
Auditor's project reference:	A13968
EPA reference:	61909
Name of audit site (if applicable):	24-30 Murray Street, Albert Park
Address of audit site:	24-30 Murray Street, Albert Park
Name of council for area in which audit site is situated (if within council area):	City of Charles Sturt
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"> <li>certificates of title of all the relevant land and an indication of whether the audit site comprises <b>all or part only</b> of the land shown on or described in the certificates of title</li> </ul>	Volume 5191 Folio 397 Volume 5957 Folio 139 Volume 5957 Folio 141 Volume 5957 Folio 140 Volume 5191 Folio 507
<ul style="list-style-type: none"> <li>details sufficient to identify the location of the land, including section or allotment numbers, area and hundred and AMG coordinates (GDA 94, UTM 53 and 54)</li> </ul>	Allotment 2 on Filed Plan 108082 Allotment 1 on Filed Plan 108085 Allotment 2 on Filed Plan 108085 Allotment 3 on Filed Plan 108085 Allotment 4 on Filed Plan 108085 Allotment 5 on Filed Plan 108085 Allotment 6 on Filed Plan 108085 Allotment 7 on Filed Plan 108085 Allotment 8 on Filed Plan 108085 Allotment 9 on Filed Plan 108085 Allotment 10 on Filed Plan 108085 Allotment 11 on Filed Plan 108085 Allotment 12 on Filed Plan 108085 Allotment 13 on Filed Plan 108085  Hundred of Yatala  Co-ordinates: MGA 94 Zone 54 273614.09 E 6137909.9 N
<ul style="list-style-type: none"> <li>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</li> </ul>	No applicable
<ul style="list-style-type: none"> <li>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 <b>Attachment B</b> of Interim Audit Advice Letter)</li> </ul>	



SECTION C: AUDIT DETAILS	
Name of owner of audit site:	DFJ Holdings Pty. Ltd.
Name of occupier of audit site:	Coast to Coast Services Pty. Ltd. Athol Park Freezers Pty. Ltd.
Name, postal address and position of person who commissioned audit:	Mr. Don Totino 982 Port Road, Albert Park, SA, 5014
Indicate authority of person who commissioned audit:	EPA Yes <input type="checkbox"/> No <input type="checkbox"/> Owner Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Occupier Yes <input type="checkbox"/> No <input type="checkbox"/> Developer Yes <input type="checkbox"/> No <input type="checkbox"/> Other [specify]
Indicate reasons for audit (indicate all purposes):	Required under the <i>Development Act 1993</i> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Required under the <i>Environment Protection Act 1993</i> Yes <input type="checkbox"/> No <input type="checkbox"/> Other [specify]
Indicate audit purposes (indicate all purposes):	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"/> 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> <i>Where remediation is or remains necessary, a remediation options assessment and/or site remediation plan, which has been reviewed and endorsed by the auditor, should be provided to support the auditor's opinion.</i>
Is a restricted scope being applied to the audit:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>NB: 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 may be suitable for a sensitive use or another use or range of uses.</i>
Date of commencement of audit:	13 November 2017
Date of notification of commencement of audit to EPA:	16 November 2017
Estimated date of completion of audit:	November 2023



**SECTION D: SITE USES AND ACTIVITIES**

Potentially contaminating activities (PCA) within the meaning of regulation 50 of the <i>Environment Protection Regulations 2009</i> are known to have occurred at the site:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes, identify the PCA(s)</i> Metal forging, Liquid organic chemical substances – storage, Metal coating, finishing or spray painting, Manufacture of motor vehicles & Motor vehicle repair or maintenance, Electrical substation, Fill or soil importation.
Current site use(s), or, if currently unoccupied, most recent site use(s):	Office, warehouses, refrigerator storage, storage and assembly of stage equipment, indoor sports center (currently unoccupied)

**SECTION E: SOURCE AND AFFECTED SITES**

The site is a known source of offsite contamination:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
The nature and extent of any offsite contamination originating from the site has been delineated:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> <i>If no, specify reason(s):</i> EPA has determined liability for site contamination is limited to the site and EPA has conducted its own off-site investigations.
Contamination at the site has arisen from another site/sites in the vicinity:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

**SECTION F: TRIGGER FOR INTERIM AUDIT ADVICE**

To support a development application or development plan amendment (DPA):	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes, complete section G</i>
Required by a voluntary proposal (under section 103I or section 103K of the Act) or site contamination order (under section 103H or s103J of the Act):	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If yes, complete section H</i>
To support a Remediation Options Assessment (ROA) or site remediation plan/strategy:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>If yes, complete section I</i>
To support a waste derived fill or waste soil enhancer proposal:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If yes, complete section J</i>
Other:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>If yes, specify reason(s)</i>

**SECTION G: DEVELOPMENT DETAILS (complete this section only if interim audit advice is being prepared in relation to a development application or DPA)**

Name of relevant planning authority:	City of Charles Sturt
Development application number (if applicable):	No number – refer to correspondence from relevant state minister in <b>Attachment A</b> of Interim Audit Advice letter.
Proposed site zoning (if applicable):	To be confirmed, but to allow mixed commercial/ retail/ office/ residential
Proposed land use:	Residential and Open Space

I have reviewed and have endorsed (where applicable) the following document. List all documents.	Site Remediation Plan 24 – 30 Murray Street, Albert Park, SA (Land and Water Consulting, 7 September 2021).
I am of the opinion, based on the knowledge available at this time, that the audit site should be able to be made suitable for the proposed use(s):	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

**SECTION H: VOLUNTARY PROPOSALS AND SITE CONTAMINATION ORDERS (complete this section only if interim audit advice is being prepared to satisfy the requirements of a voluntary proposal under section 103I or section 103K of the Act, or a site contamination order under section 103H or s103J of the Act)**

IAA required by:	Voluntary site contamination assessment proposal <input type="checkbox"/> Voluntary site remediation proposal <input type="checkbox"/> Site contamination assessment order <input type="checkbox"/> Site remediation order <input type="checkbox"/>
EPA reference number(s) [if applicable]:	
I have reviewed and have endorsed (where applicable) the following documents. List all documents.	
I am of the opinion based on the knowledge available at this time, that the works undertaken appear generally consistent with the EPA statutory requirements:	Yes <input type="checkbox"/> No <input type="checkbox"/> If no, specify reason(s)

**SECTION I: REMEDIATION DETAILS (complete this section only if interim audit advice is being prepared to support a ROA or site remediation plan/strategy)**

I have reviewed and have endorsed the following <b>attached</b> remediation options assessment and/or site remediation plan/strategy (cross out if not applicable) documents. List all documents.	Site Remediation Plan 24 – 30 Murray Street, Albert Park, SA (Land and Water Consulting, 7 September 2021).
I am of the opinion based on the knowledge available at this time, that the proposed remediation options and/or site remediation plan/strategy (cross out if not applicable) have been developed in accordance with relevant guidelines issued by the EPA:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

**SECTION J: WASTE DERIVED MATERIALS (complete this section only if interim audit advice is being prepared to support a waste derived materials proposal)**

Type of waste derived material proposal:	Soil <input type="checkbox"/> Soil enhancer <input type="checkbox"/>
Does the IAA relate to a site which is a part of, or known to be considered as part of, 'One Site' which has been approved by the EPA?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, are there any EPA licensed sites currently or proposed to be within the 'One Site' boundary?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, provide licensed site details



**SECTION J: WASTE DERIVED MATERIALS** (complete this section only if interim audit advice is being prepared to support a waste derived materials proposal)

I have reviewed the following <b>attached</b> waste derived material proposal(s). List all documents.	
I am of the opinion, based on the knowledge available at this time, that: <ul style="list-style-type: none"> <li>the proposal has been prepared in accordance with the EPA <i>Standard for the production and use of Waste Derived Fill</i>, and</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<ul style="list-style-type: none"> <li>the waste derived materials identified in the proposal should be suitable for the proposed use(s) and are not likely to cause harm.</li> </ul>	Yes <input type="checkbox"/> No <input type="checkbox"/>

**SECTION K: AUDITOR OPINIONS**

I am of the opinion, based on the knowledge available at this time, that the assessment <del>and/or remediation</del> (cross out if not applicable) of site contamination at the audit site is consistent with guidance in the <i>National Environment Protection (Assessment of site contamination) Measure 1999</i> (as amended in 2013) and the EPA publication <i>Guidelines for the assessment and remediation of site contamination</i> :	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify reason(s)
I am of the opinion the site has been sufficiently assessed to inform risk-based decisions in accordance with the <i>National Environment Protection (Assessment of site contamination) Measure 1999</i> and the EPA publication, <i>Site contamination: Guidelines for the assessment and remediation of site contamination</i> :	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify reason(s)
This interim audit advice has been prepared and completed consistent with the EPA publication <i>Site contamination: Guidelines for the site contamination audit system</i> :	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify reason(s)

**SECTION L: SUMMARY OF INTERIM AUDIT FINDINGS**

Provide a summary statement which addresses each of the following sections\* as an annexure to this form.

1. Conceptual site model (CSM)
2. Auditor's interim audit risk assessment
3. Auditor's interim audit outcomes and determinations
4. Actions/recommendations

\* Refer to Appendix 3 of the EPA publication *Guidelines for the Site Contamination Audit System*

**DECLARATION**

To the best of my knowledge, all information provided in this form is current and correct at the time of signing and dating.



Signed\*:

*Greenwell*

Dated: 13 September 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.*

#### SECTION M: INTERIM AUDIT ADVICE CHECKLIST

All of the following documents/information **must** be attached when required (please check):

- |   |   |                             |
|---|---|-----------------------------|
| A complete and accurate digital copy of any documents listed in Section G | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| A complete and accurate digital copy of any documents listed in Section I | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| A complete and accurate digital copy of any documents listed in Section J | Yes <input type="checkbox"/>            | No <input type="checkbox"/> |
| Summary of interim audit findings as listed in Section L                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |



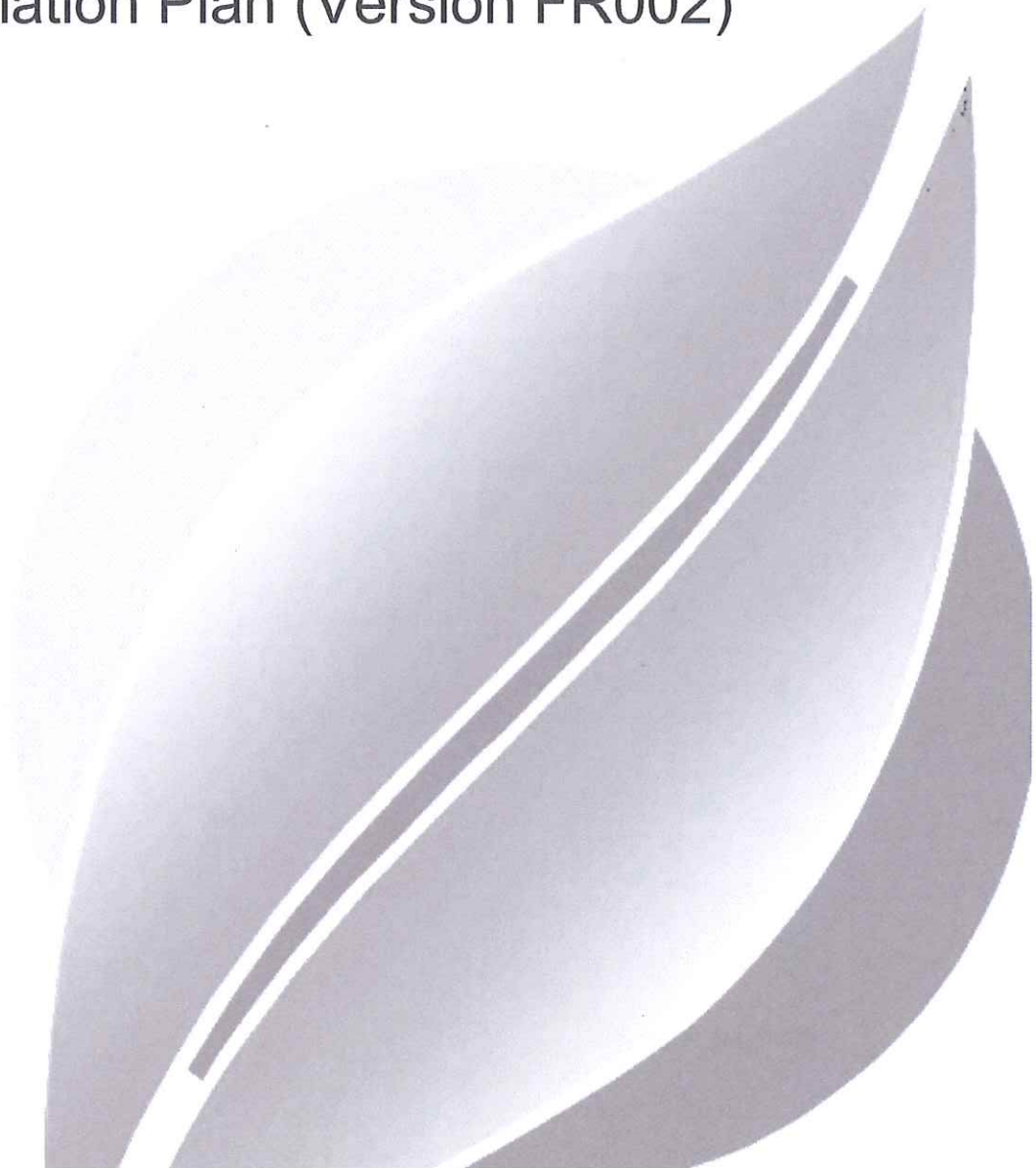
## **Attachment D: Site Remediation Plan**

# 24 – 30 Murray Street, Albert Park, SA

## Site Remediation Plan (Version FR002)

DFJ Holdings

September 2021





## Document Status

Version	Doc type	Reviewed by	Approved by	Date issued
DR001	Report	Dr James Fox		Internal Review
DR002	Report	Dr James Fox	Dr James Fox	27 April 2021
DR003	Report	Dr James Fox	Dr James Fox	10 July 2021
FR001	Report	Dr James Fox	Dr James Fox	31 August 2021
FR002/A	Report	Dr James Fox	Dr James Fox	6/7 September 21

## Project Details

<b>Project Name</b>	Site Remediation Plan (Version FR002)
<b>Project Location</b>	24 – 30 Murray Street, Albert Park, SA
<b>Client</b>	DFJ Holdings
<b>Client Project Manager</b>	Mr Don Totino
<b>LWC Project Manager</b>	Dr James Fox
<b>LWC Project Director</b>	Dr James Fox
<b>Authors</b>	Riley Martin
<b>File Reference</b>	LWC HO-26 Site Remediation Plan FR002/A_Issue

## COPYRIGHT

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# EXECUTIVE SUMMARY

## Context

Mr Don Totino of DFJ Holdings engaged Land & Water Consulting (LWC) to prepare this Site Remediation Plan (SRP) for 24 – 30 Murray Street, Albert Park, South Australia (the Site, Refer to the Executive Summary Figure ES1).

The Site is currently owned by DFJ Holdings (having purchased the Site in 2009).

The Site is rectangular in shape and covers an area of approximately 1.6 hectares (1.6 ha), with roads immediately adjoining the southern, eastern, and western sides of the property and with residential/commercial adjoining the northern side of the Site. The Site consists of a series of commercial warehouse type buildings surrounded by predominantly sealed ground to the east and unsealed ground along the western boundary.

The Site is proposed to be developed as low density residential (sensitive land use) with all existing site infrastructure to be demolished during the re-development works.

The Site is subject to a site contamination audit (audit) by Mr Graeme Miller of Senversa (the Auditor) (Environment Protection Authority (EPA) Audit reference 61909) and may be potentially developed for use as low density residential (a sensitive land use as defined in Section 3(1) of the *Environment Protection Act 1993* (EP Act)). The Site is not currently a sensitive land use.

## Nature and Extent of Site Contamination

Site contamination (as defined in Section 5B of the *Environment Protection Act 1993*) was identified in the Detailed Site Investigation (LWC, 2018b) and subsequently assessed further to refine the nature and extent of contamination and assess the risk profile with respect to on and offsite receptors (sensitive use). Refer to the Site Specific Risk Assessment (LWC, 2021) for further information. The nature and extent of site contamination is summarised in ES Table 1-1.

Further to LWC 2018a, The Environment Protection Authority is satisfied that DFJ Holdings is not responsible for causing the site contamination. The EPA (4 May 2018) determined that DFJ Holdings is not responsible for site contamination beyond the boundaries of the Site. However, EPA (4 May 2018) also noted that the site contamination audit must still consider the impacts of any on-site contamination to on and off-site receptors. This SRP is mindful of this directive with respect to mitigating the potential ongoing migration of site related contamination under offsite areas (in groundwater and soil vapour) based on the risks reported / assessed in EPA Assessment Area reports and LWC, 2021.



ES Table 1-1 Nature and extent of site contamination

Soils - (refer Executive Summary Figures ES2 (soil bores), ES3 and ES4 (for extent))	
<p><b>Fill A</b></p> <p>Comprising the fill and chemicals (lead – human health and copper, zinc - ecology) in sample location SB09 at 0.0-0.2 m.</p>	<p><b>Laterally –</b></p> <p>The fill evident in SB09 is not evident in bores radial to such location unless counting SB16 to the south. The concentrations of metals reported maybe attributable to the fill itself (i.e. uncontrolled imported fill) or could be a function of loss of lead based paint from the northern warehouse, historically, noting the surface is sealed here. Alternatively it could be a function of processes / activities undertaken at the Site in Gadsdens days.</p> <p><b>Vertically –</b></p> <p>Copper and zinc are delineated to 0.2 m however elevated lead (relative to HIL A) is reported in the sample from natural at 0.2 m.</p>
<p><b>Fill B</b></p> <p>Comprising the copper, lead and zinc in location SB16.</p>	<p><b>Laterally –</b></p> <p>The fill evident in SB16 is not evident in bores radial to such location unless counting SB09. The concentrations of metals reported maybe attributable to the fill itself (i.e. uncontrolled imported fill) or could be a function of loss of lead based paint from the northern warehouse, historically, noting the surface is sealed here. Alternatively it could be a function of processes / activities undertaken at the Site in Gadsdens days.</p> <p><b>Vertically –</b></p> <p>Delineated to 0.2 m.</p>
<p><b>Fill C</b></p> <p>In the scaffold storage area – potentially associated with the former Gadsdens business. Characterised by black, grey gravelly sand / clayey gravel with occasional brick, bitumen, tar and glass and concentrations of metals (copper, lead, zinc) PAH (BaP TEQ) and TRH (Fraction C16-34) above human health and ecological / environmental protection criteria.</p>	<p><b>Laterally –</b></p> <p>Located to the west of the northern warehouse stretching from possibly SB19 in the north to SB25 in the south, note that these areas are unsealed.</p> <p><b>Vertically –</b></p> <p>SB20 reports a depth of 0.7 m although this is logged as clayey gravel. Elsewhere the fill is generally gravelly sand or silt and averages 0.2 m.</p> <p>Concentration wise the BaPTEQ in SB20 is not delineated however the fill reports tar fragments and it is considered that the reported BaP concentrations are synonymous with the fill layer on such basis.</p> <p>The area is characterised by unsealed surface used for commercial storage of scaffold and occasional metal (inert) waste. The older non scaffold metal items may be the source of metals in soils (i.e. metal flakes or shavings) or equally the fill itself could be the source, or even former use of the site by Gadsdens. What is evident is that the fill exceeds tier 1 criteria for residential land use (both human health – lead, BaP TEQ) and environment (copper, lead, zinc, BaP TEQ and Fraction C16-C34).</p>
Soil vapour (Refer Executive Summary Figure ES5)	
<p>Concentrations of</p> <ul style="list-style-type: none"> <li>▪ Trichloroethene (TCE)</li> <li>▪ cis 1,2 dichloroethene</li> <li>▪ 1,2 dichloroethane</li> </ul>	<p>TCE was reported in soil vapour beneath the north-portion of the Site at concentrations greater than the adopted investigation levels (National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended 2013 Health Investigation Levels for soil vapour in a low density residential land use setting ('HIL A').</p> <p>The highest concentrations were reported under the northern end of the northern building (referred to in this document as "Building C") and adjacent to the central northern site boundary. TCE above the relevant criterion also is present as soil vapour immediately to the east and west of the Site.</p> <p>The presence of TCE contamination in soil vapour under the north-eastern portion of the Site generally coincides with:</p> <ul style="list-style-type: none"> <li>▪ the inferred source of the contamination (former tin can manufacturing in the northern site building); and</li> </ul>

	<ul style="list-style-type: none"> <li>the highest TCE concentrations in groundwater.</li> </ul> <p>The above-guideline concentrations of TCE under the northern portion of the site ranged from 25 µg/m<sup>3</sup> to 7,900 µg/m<sup>3</sup> (compared to a guideline value of 20 µg/m<sup>3</sup>). Screening of utilities under and adjacent to the Site did not indicate that TCE in soil vapour is accumulating or migrating within these structures – with the majority of PID readings being 0 parts per million (ppm) and a maximum recorded value of 0.2 ppm. Note that a similar exercise was undertaken by Golder (2020) as part of the EPA Assessment Area works and the same conclusion was reached.</p> <p>Other VOCs (1,2 dichloroethane and cis-1,2 dichloroethene) were also reported greater than the adopted investigation levels in soil vapour samples collected from nested soil vapour probes installed in the northern portion of the Site (locations AV-1S&amp;D and AV-2S&amp;D).</p> <p>TCE contamination in soil vapour was reported to the north, northeast and west of the site – across and down hydraulic gradient. The most recent investigation by JBS&amp;G (16 April 2021) presents the results from the four rounds of soil vapour sampling completed in off-site areas. The most recent sampling at each location found the following:</p> <ul style="list-style-type: none"> <li>Above guideline TCE concentrations in shallow soil vapour probes ranged from &lt; 7 µg/m<sup>3</sup> to 11,000 µg/m<sup>3</sup>, which similar is a similar range to that reported under the northern portion of the site.</li> <li>Above guideline TCE concentrations were reported up to approximately 200 m to the north and 200 m to the west of the site. Above guideline TCE concentrations were also reported up to 120 m northeast of the site along Murray Street.</li> <li>Concentrations of TCE in deeper soil vapour probes were similar to and in some instances greater than those reported at the on-site deep soil vapour probes.</li> </ul> <p>The above guideline concentrations of TCE reported by JBS&amp;G (3 December 2020) and LWC (6 July 2019) to the east, north and northeast of the Site are indicative of a source unrelated to the Site. Those to the west and northwest are considered likely to be associated with the Site and possibly another off-site source.</p> <p>Cis-1,2 dichloroethene was also reported JBS&amp;G (16 April 2021) greater than the adopted assessment criteria in four soil vapour probes sampled to the north and northeast of the site.</p>
<b>Groundwater – Q1 Aquifer (refer Executive Summary Figure ES6)</b>	
TCE (chlorinated hydrocarbons (CHC))	<ul style="list-style-type: none"> <li>TCE is present at concentrations greater than the adopted criterion in groundwater under the northern portion of the Site and to the northeast, north, northwest and west of the Site.</li> <li>The highest concentrations of TCE under the Site are reported at and down hydraulic gradient of the northern portion of the northern building.</li> <li>The maximum TCE concentration reported in groundwater under the Site across four rounds of groundwater sampling and analysis was 508 ug/L – at GW10, which is located in the north-western corner of the Site and is screened in the deeper portion of the Q1 Aquifer. TCE is also reported greater than the adopted criteria at GW06 – which is located along the up hydraulic gradient boundary of the Site.</li> <li>Similar and higher concentrations were reported as part of the EPA Assessment Area staged works, by JBS&amp;G (11 February 2020) and Golder (3 December 2020) to the north (across hydraulic gradient) and west (up hydraulic gradient) of the Site (maximum of 1,130 ug/L approximately 100 m west of the site). The off-site wells are installed in the upper portion of the Q1-watertable unit (which is also targeted by the site Q1 water table unit monitoring wells – except GW10 and the well targeting the Q2 unit (GW09-Q2)).</li> <li>1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethene, tetrachloroethene (PCE), chloroform and</li> </ul>



	<p>trans-1,2-dichloroethene were also detected in groundwater under the Site, but at concentrations less than the adopted assessment criteria.</p> <ul style="list-style-type: none"> <li>Most of these chemicals, as well as vinyl chloride, were detected in groundwater sampled from some of the off-site monitoring wells – and were present at concentrations generally less than the adopted criteria. The general absence or low concentrations of these chemicals (many of which represent degradation products of TCE) indicates limited bio-degradation of TCE and CHCs is occurring in groundwater within the Q1 water table unit.</li> <li>Potential (likely) sources are as follows: <ol style="list-style-type: none"> <li>The Site – former Gadsdens Pty Ltd tin can manufacturing plant in the northern building (Building C).</li> <li>Off-site – current and former industrial activities identified in LBW Co (2020) to the northeast and east of the Site.</li> </ol> </li> </ul>
TRH	<ul style="list-style-type: none"> <li>TRH Fraction C<sub>6</sub>-C<sub>10</sub> was reported above LOR and greater than the direct contact criteria at site monitoring wells located adjacent and to the north and northwest of the northern building, and at offsite monitoring wells located to the northeast, northwest and west of the site.</li> <li>TCE reports in TRH Fraction C<sub>6</sub>-C<sub>10</sub>. Concentrations of Fraction C<sub>6</sub>-C<sub>10</sub> were similar to the concentrations to TCE reported at the same monitoring wells, suggesting that the TRH is representative predominantly of TCE.</li> <li>Longer chain TRH fractions were only detected greater than the LOR (and slightly above the guideline value) on one occasion in water sampled from on-site monitoring well GW05 – which is located in the southwestern portion of the Site, near to where small scale vehicle maintenance previously occurred and near to the electrical transformer.</li> <li>Potential (likely) sources are as follows: <ol style="list-style-type: none"> <li>The Site – former Gadsdens Pty Ltd tin can manufacturing plant in the northern building (Building C).</li> <li>Off-site – current and former industrial activities identified in LBW Co (2020) to the northeast and east of the Site.</li> </ol> </li> </ul>
PFAS	<ul style="list-style-type: none"> <li>The sum of PFHxS and PFOS was detected at concentrations greater than the adopted criteria in samples collected from monitoring wells located in the northern portion of the Site (adjacent and down hydraulic gradient of the north building) and along the eastern (up hydraulic gradient) boundary. The concentrations near the northern site building were higher than those reported along the upgradient (northern) portion of the Site boundary, but similar to those reported across and up hydraulic gradient – along the southern portion of the eastern boundary. Potential (likely) sources are as follows: <ol style="list-style-type: none"> <li>former Gadsdens Pty Ltd tin can manufacturing plant in the northern building (Building C).</li> <li>Off-site – current and former industrial activities identified in LBW Co (2020) to the northeast and east of the Site.</li> </ol> </li> </ul>
Metals	<ul style="list-style-type: none"> <li>Boron was reported greater than the adopted criteria and at similar concentrations in the majority of monitoring wells sampled at on-site and off-site locations (0.08 mg/L to 1.74 mg/L on-site and 1.18 mg/L to 2.59 mg/L off-site).</li> <li>Manganese was reported greater than the adopted criteria at one monitoring well located adjacent to the northern site building and at one monitoring well located along the eastern site boundary – up hydraulic gradient of the northern building. It was not reported greater than the adopted criteria in</li> </ul>



	<p>groundwater in the one round it was tested (Golder, 2020) at off-site monitoring wells.</p> <ul style="list-style-type: none"> <li>Nickel - was reported slightly greater than the adopted criteria at monitoring wells located within and adjacent to the northern building (Building C), in the southwestern portion of the Site at one monitoring well, and at one monitoring well located along the eastern site boundary – up hydraulic gradient of the northern building. It was not reported greater than the adopted criteria in groundwater in the one round it was tested (Golder, 2020) at off-site monitoring wells.</li> <li>Selenium was reported slightly greater than the adopted criteria at three monitoring wells located within and adjacent to the northern site building (Building C), and at one monitoring well (at similar concentrations) more than 200 m northwest of the Site.</li> <li>Possible sources of manganese, nickel and selenium – is one or more of the following: <ul style="list-style-type: none"> <li>Ambient background water quality.</li> <li>The Site – former tin can manufacturing plant in northern building.</li> <li>Off-site – current and former industrial activities identified in LBW Co (16 June 2020) to the northeast and east of the Site.</li> </ul> </li> <li>Boron is considered to be a function of ambient background.</li> </ul>
Inorganics	<ul style="list-style-type: none"> <li>Total nitrogen and phosphorous were reported greater than the adopted criteria at monitoring wells located in the northern, western and eastern portions of the Site, including along the up hydraulic gradient boundary (at which some of the higher concentrations were reported).</li> <li>The source is considered to be ambient background.</li> </ul>
<b>Groundwater – Q2 Aquifer</b>	
TCE	<ul style="list-style-type: none"> <li>TCE was reported at 2 ug/L in a sample collected from GW09. This is slightly greater than the LOR of 1 ug/L. This concentration is less than the adopted assessment criteria. No other CHCs were detected.</li> </ul>
TRH	<ul style="list-style-type: none"> <li>TRH was reported in water sampled from the Q2 well at concentrations greater than the laboratory limit of reporting. It is noted that this well has been sampled on only one occasion and was drilled with mud techniques – which introduces fluids into the formation. Further sampling is required to assess whether the TRH represents groundwater contamination or an artifact of the drilling process. Note that silica gel clean-up notably reduced the initial reported concentration indicating a reasonable proportion of the TRH was biogenic.</li> </ul>
Inorganics	<ul style="list-style-type: none"> <li>Total nitrogen and phosphorous were reported greater than the adopted criteria at generally similar concentrations to those reported in the Q1 water table unit at the site.</li> <li>The source is considered to be ambient background.</li> </ul>

## Risk: Health

The conceptual site model formulated in the site specific risk assessment (SSRA, refer LWC, 2021) identified six source pathway receptor (SPR) linkages that represent potential harm to human health, accounting for a sensitive land use:

- SPR Linkages 1 – 4: Potential risk to human health from lead and carcinogenic polycyclic aromatic hydrocarbons (benzo(a)pyrene TEQ) in fill at concentrations above tier 1 soil screening levels for the protection of health considering a low density residential land use, and considering ingestion (including inhalation) and dermal contact exposure pathways. This fill must be managed to eliminate risk associated with exposure to these chemical substances.
- Linkages 5 and 6: Potential risk to human health from inhalation of TCE vapour in an indoor air environment (low density residential land use) for both on and offsite receptors (residents).

The highest concentration of TCE in groundwater within the Groundwater Prohibition Area (GPA) is associated with offsite monitoring location GW03 (located along Spencer Street) – 1,130 mg/L (upper Q1). This is double the highest concentration reported on site (508 mg/L in water sampled from groundwater monitoring well GW10 – note that GW10 is screening the lower Q1). TCE vapour at Spencer Street is significantly higher than on site (32,000  $\mu\text{g}/\text{m}^3$  versus 7,900  $\mu\text{g}/\text{m}^3$ ).

TCE in water sampled on site from groundwater monitoring well GW10 is thus considered to not represent a significant vapour risk (based on depth) noting TCE soil vapour in this location was below the soil vapour tier 1 criterion of 20  $\mu\text{g}/\text{m}^3$  (14  $\mu\text{g}/\text{m}^3$ ).

The vapour reported on site is indicative more-so of an actual vadose zone source rather than volatilisation from groundwater.

Rather than undertaking a new/ standalone vapour intrusion risk assessment (VIRA), the EPA commissioned VIRA concludes that TCE measured in several locations presents a potential risk to residential receptors where dwellings are crawlspace and/ or slab on ground construction.

On the Site, several TCE concentrations in the north central area (the assumed source area i.e. vapours monitoring locations AV1 and AV2) exceed the lowest TCE concentration identified in the Assessment Area VIRA that has been identified as a potential issue. Therefore when aligning with the EPA Assessment Area VIRA (and considering all other parameters (such as geological and soil factors) being equal) **then the soil vapour concentrations reported are unacceptable with respect to a proposed sensitive land use and remediation (elimination) of the TCE source is required.**

The Assessment Area VIRA included an assessment of trench workers being exposed to soil vapour in a subsurface trench environment, using concentrations of TCE vapour at least twice those reported on site and found no indication of unacceptable risk to such workers.

Field assessment of services external to the Site was undertaken within this scope (headspace screening) and also by Golder as part of the EPA commissioned Assessment Area studies. Such surveys did not find any indication that subsurface services are a significant pathway for the migration of TCE or other volatile organic compounds to residential areas external to the Site.



## Risk: Environment

There are no surface water bodies (fresh or marine) within 2 km of the Site. Therefore the assessment of site related groundwater contamination is not relevant to aquatic ecosystems (fresh / marine).

Risks to the environment (soil flora and fauna) are considered to be restricted to the fill zones discussed above (Fill Zones A, B and C) as identified in the Detailed Site Investigation. Risk to ecology are identified as SPR linkages 14 – 18 (direct contact with metals, total recoverable hydrocarbons and polycyclic aromatic hydrocarbons). Remediation of this fill is required (i.e. risks to both human health and ecology can be eliminated simultaneously).

## Risk: Groundwater

### Q1 water table unit

TCE, TRH, boron, manganese, nickel, phosphorous, selenium, nitrite / nitrate and PFAS (PFOS + PFHxS) were reported above tier 1 water quality criteria (or limits of reporting i.e. with respect to TRH) for the environmental values identified, in water sampled from the Q1 water table unit.

Manganese, nickel and selenium are possibly associated with one or more of the following:

- Ambient background water quality.
- Site – former tin can manufacturing plant in northern building.
- Off-site – current and former industrial activities identified in LBW Co (16 June 2020) to the northeast and east of the site.

Boron, nitrogen and phosphorous are likely to be largely representative of background water quality.

TRH is considered to be representative of TCE concentrations (the TRH analysis reports TRH present in C<sub>6</sub>-C<sub>10</sub> fraction – TCE reports in this fraction). TCE is likely to be present as a result of historical site activities (cannery). There is no indication of PFAS sources on site or having been on the Site, though PFAS can be associated with cannery operations and so the presence of PFAS in groundwater beneath the Site may be associated with historical on site activities.

### Q2 unit

Trace concentrations of bromomethane, total recoverable hydrocarbon and manganese and nickel were reported in water sampled from the Q2 unit, though these are considered to be trivial, and not representative of site contamination, and the Q2 unit is also covered by the GPA. A follow up monitoring event is required regarding the Q2 unit with respect to confirming the presence / absence of bromomethane in water sampled from the Q2 unit.

There are no aquatic ecosystems located down hydraulic gradient in a 2 km radius of the Site. Therefore, there is no apparent risk to surface water (groundwater dependant ecosystem) receptors from chemical substances reported in groundwater beneath the Site.

The source of the TCE may continue to contribute to contamination of the watertable-Q1 unit and therefore the specific location, format, and extent of the source (if a point source e.g. tank, pipe, sump) needs to be investigated (and removed) following the demolition of the northern warehouse.

Given the establishment of a GPA for the area in 2019, the abstraction and use of groundwater from the **Q1-watertable- and Q2 unit** beneath and down hydraulic gradient of the Site is precluded. This eliminates the risk to future sensitive or non-sensitive users of the Site, other than vapour intrusion/ inhalation associated with TCE.

## Scope of Work

This SRP provides a detailed scope of works and methodology for the remediation of the Site, with respect to:

1. Locating and removing a potential primary source of trichloroethene (TCE) potentially located in the central northern footprint of the Site associated with the northern half of the northern warehouse ('Building C') post demolition of northern structures. Note that the northern building may form a source of other VOC reported in soil vapour and also a potential source of per and polyfluoroalkyl substances (PFAS), manganese, nickel, and selenium. Total Recoverable Hydrocarbons (TRH) is evident in groundwater also though this is considered to be representative of TCE.
2. Management of soils that may be identified following the removal of the potential TCE source infrastructure (secondary source) that are unsuitable for low density residential land use - Remediation of primary and secondary sources of TCE is also required to mitigate ongoing contamination of groundwater and associated site and off-site vapour intrusion sources and risks.
3. Management of known areas of soil ('fill') that do not meet the required tier 1 generic land use screening criteria for low density residential land.
4. Assessment of soils within the footprints of buildings located in the southern area of the Site. Although not expected to be an area prone to site contamination, due to occupancy, the footprint of these buildings has not been assessed. Validation samples are required to be collected from soil within such footprint.
5. Validation of soil vapour following primary and secondary TCE source removal, to re-assess the risk profile (and site suitability) respect to vapour intrusion noting TCE is also present in groundwater.
6. Implementation of a Groundwater Monitoring and Management Plan (GMMP) to monitor TCE in groundwater beneath the Site post remediation, noting that TCE is present in groundwater up-hydraulic gradient of the Site.

## Remediation Goals and Objectives

The goals of the remediation are as follows:

- Remove site contamination associated with a vadose zone TCE source to:
  - make the site suitable for a sensitive land use; and
  - reduce the potential for ongoing groundwater contamination and associated soil vapour contamination beneath the Site and down hydraulic gradient offsite areas.
- Mitigate potential risks to human health and the environment posed by impacted shallow soils (copper, lead, zinc, benzo(a)pyrene toxicity equivalent quotient TEQ and total recoverable hydrocarbons)) to render the Site suitable for sensitive land use; and



- Undertake the remedial works such that:
  - The risks to human health, safety and the environment are mitigated; and
  - All works are undertaken in accordance with relevant regulatory provisions and guidance.

All remediation works are to be supervised by Land & Water Consulting. A validation report will be prepared by Land & Water Consulting for review by the appointed site contamination auditor following the completion of the remediation works.

## Conclusions and Recommendations

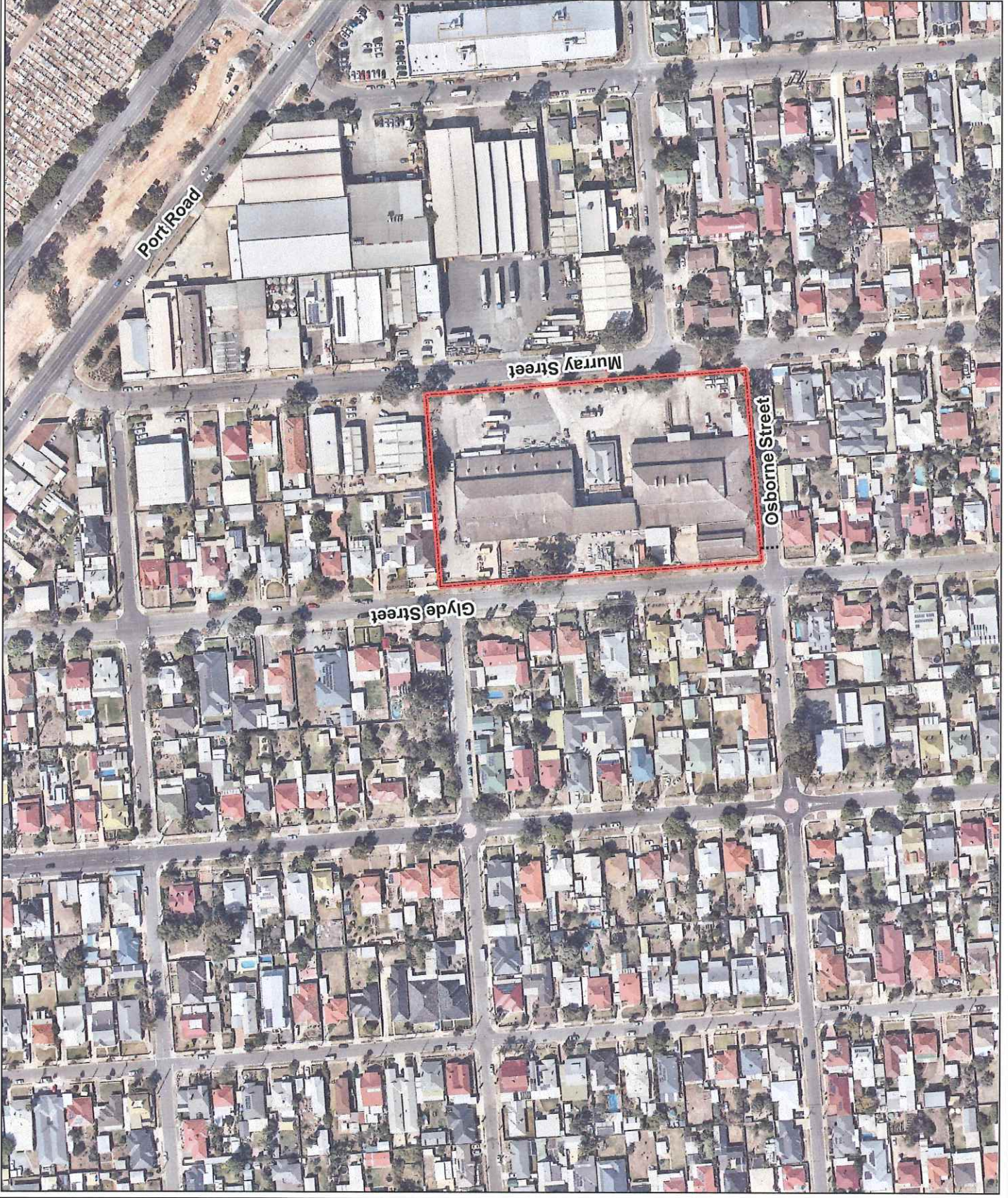
Land & Water Consulting conclude that the Site in its current form / configuration is contaminated (as defined in Section 5B of the *Environment Protection Act 1993*) when accounting for a proposed sensitive land use. A process of remediation has been scoped and presented in this Site Remediation Plan, which Land & Water Consulting recommend is enacted at the Site in order to facilitate the suitability of the Site for a sensitive use, another use or range of uses.

This SRP has been prepared in accordance with the requirements of the South Australian Environment Protection Authority (2019) Guidelines for the Assessment and Remediation of Site Contamination (2019a).

A statement of limitations regarding this document and specifications presented is provided as Appendix E.

## Executive Summary (ES) Figures





Legend  
Site Boundary



Date: March 2021  
Projection: GDA 1994, Zone 54  
Project:  
Site Remediation Plan:  
24 - 30 Murray Street, Albert Park,  
South Australia

Site Address:  
24 - 30 Murray Street, Albert Park, South Australia

Figure Title:  
Site Location Plan

Appendix in Set	1 of 6	Figure	1
Scale	See Plan	Revision	
Drawing Reference			
Author			A





# Legend

- Site Boundary
- Site Features
- Soil Bore Investigation Locations

Note: Basemap sourced from Nearmap dated October 2020



Land & Water Consulting  
Level 1, 100/101 Sturt Street, Adelaide  
SA 5000  
Tel: 08 8333 1111  
Web: www.lwc.com.au

Date: July 2021

Projection: GDA 1984, Zone 54

Project:

Detailed Site Investigation (SSA)

Site Address:

24 - 30 Murray Street, Albert Park, South Australia

Figure Title:

Soil Bore Investigation Locations

Figure In Set	7 of 7	Figure	ES2
Scale: See Plan		Revision	A
Drawing Reference			



Legend

- Cadastral
- Site Boundary
- Fill Areas of Interest
- Indicative Extent
- Area A
- Area B
- Area C



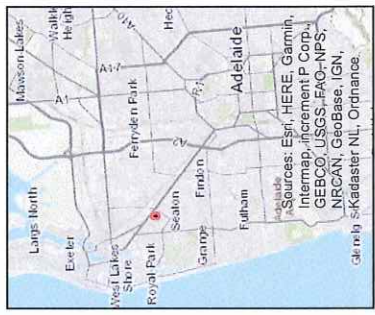
Project: Site Remediation Plan Tintin	
Figure Title: Indicative Extent of Fill Areas of Interest	
Date: April 2021	Projection: GDA84 254
Scale: See Plan	Figure in Set: 3 of 6
Site Address: 24-30 Murray Street Albert Park, SA 5014	
Figure: ES3	Revision: A
Drawing Reference: AAAA	








- Legend**
- Cadastre
  - Site Boundary
  - Fill Areas of Interest
  - Indicative Extent
  - Area A
  - Area B
  - Area C





**LWC**  
Land & Water Consulting  
Level 4, Water Consulting  
Email: enquiries@waterconsulting.com.au  
Web: www.waterconsulting.com.au

**Project:**  
Site Remediation Plan  
Totino

**Figure Title:**  
Indicative Extent of Fill Areas of Interest

Date: April 2021	Projection: GDA94 Z54
Scale: See Plan	Figure in Set: 4 of 6

Site Address: 1000-1001 Park Street Albert Park, SA 5014	Figure <b>ES4</b>
	Revision A

Drawing Reference: A444



Legend

- Site Boundary
- Site Features
- Soil Vapour Investigation Location (Passive Sampler) (LWC, Aug 2020)
- Soil Vapour Location (Golder, 2019)
- Soil Vapour Investigation Location (Passive Sampler) (LWC, May 2018)
- Soil Vapour Investigation Location (Passive Sampler) (LWC, Dec 2017)
- Active Vapour Sampling Locations (June 2019)
- Inferred TCE Source Zone

Note: Basemap sourced from Nearmap dated October 2020



Date: August 2021	North Arrow
Projection: GDA 1984, Zone 54	
Project: Detailed Site Investigation (SSRA)	
Site Address: 24 - 30 Murray Street, Albert Park, South Australia	
Figure Title: TCE Soil Vapour Concentrations (All data)	
Figure in Set: 5 of 6	Figure ES5
Scale: See Plan	Revision
Drawing Reference	A





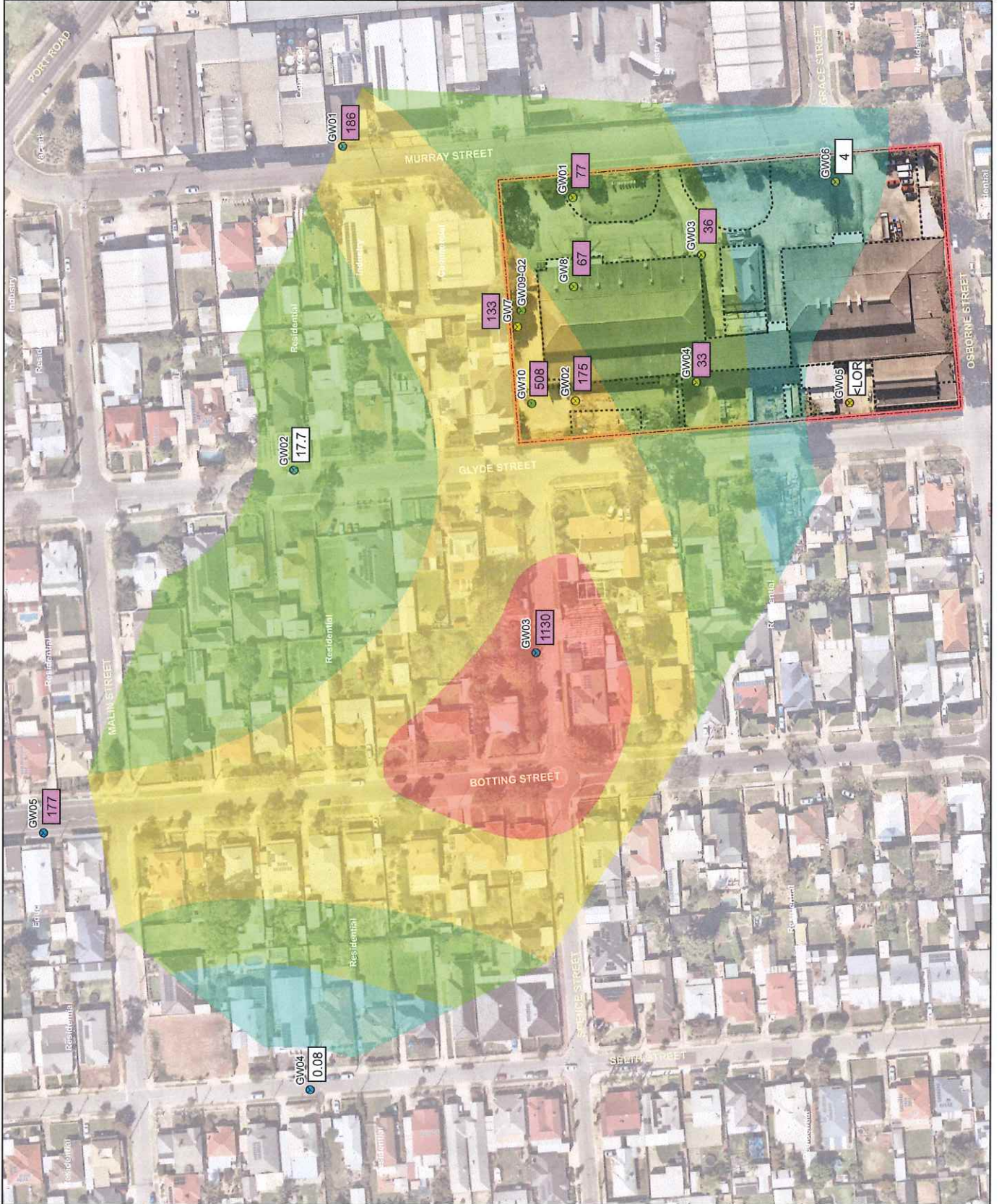
# Legend

- Site Boundary
- Railway
- Site Features
- Groundwater Investigation Location (LWC, 2020)
- Groundwater Investigation Location (Golder, 2019)
- Existing Groundwater Investigation Location
- Inferred TCE Groundwater Plume (ug/L)
  - 1000+
  - 100-999
  - 9-99
  - 1-8
- Groundwater TCE Concentration (ug/L) not exceeding the WHO DWQG 4th Ed Criterion (8 ug/L)
  -
- Groundwater TCE Concentration (ug/L) exceeding the WHO DWQG 4th Ed Criterion (8 ug/L)
  -

Note:  
GW01, GW02, GW03, GW04 and GW05  
extracted from Golder Jan 2020  
Basemap sourced from Neamap dated  
October 2020



Date: November 2020	Projection: GDA 1994, Zone 54
Project:	Detailed Site Investigation
Site Address:	24 - 30 Murray Street, Albert Park, South Australia
Figure Title:	Groundwater Analytical Results Plan with Reported TCE Concentrations (September 2020) - Q1 Aquifer
Figure in Set	6 of 6
Scale: See Plan	
Drawing Reference	ES6
Revision	A





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# 1 INTRODUCTION

## 1.1 Background

This Site Remediation Plan (SRP) document has been prepared for 24 – 30 Murray Street, Albert Park, South Australia (the Site). A site locality and layout plan are provided as **Figure 1 (at rear)**.

The Site is proposed to be developed for low density residential land use; a sensitive land use as defined in Section 3-1 of the *Environment Protection Act 1993* (EP Act). There is a required open space area of approximately 2,500 m<sup>2</sup>.

The Site is approximately 1.6 ha in area and all existing site infrastructure is to be demolished during the re-development works.

This SRP provides a detailed scope of works and methodology for the remediation of the Site, with respect to:

1. Locating and managing a potential primary source of trichloroethene (TCE) potentially located in the central northern footprint of the Site associated with the northern half of the northern warehouse ('Building C') post demolition of northern structures. Note that the northern building may form a source of other VOC reported in soil vapour and also a potential source of per and polyfluoroalkyl substances (PFAS), manganese, nickel, and selenium. Total Recoverable Hydrocarbons (TRH) is evident in groundwater also though this is considered to be representative of TCE.
2. Management of soils that may be identified following the removal of the potential TCE source infrastructure (secondary source) that are unsuitable for low density residential land use - Remediation of primary and secondary sources of TCE is also required to mitigate ongoing contamination of groundwater and associated site and off-site vapour intrusion sources and risks.
3. Management of known areas of soil ('fill') that do not meet the required tier 1 generic land use screening criteria for low density residential land.
4. Assessment of soils within the footprints of buildings located in the southern area of the Site. Although not expected to be an area prone to site contamination, due to occupancy, the footprint of these buildings has not been assessed. Validation samples are required to be collected from soil within such footprint.
5. Validation of soil vapour following primary and secondary TCE source removal, to re-assess the risk profile with respect to vapour intrusion noting TCE is also present in groundwater.
6. Implementation of a Groundwater Monitoring and Management Plan (GMMP) to monitor TCE in groundwater beneath the Site post remediation, noting that TCE is present in groundwater up-hydraulic gradient of the Site.

Based on the change to a more sensitive land use (i.e. from commercial/ industrial to low density residential) a South Australian Environment Protection Authority (EPA) accredited site contamination auditor is required. DFJ Holdings has engaged Mr. Graeme Miller (Senversa Pty Ltd) to undertake the Site Contamination Audit.



## 1.2 Purpose

The purpose of the SRP is to provide information about the project and document the remediation aims, chosen remediation option and procedures that must be implemented to achieve the remediation goals and objectives for the Site. The SRP details procedures and plans to eliminate human health risks accounting for the proposed sensitive land use and eliminate risk to both water and the environment to the extent reasonably practical.

The SRP also sets out environmental management protocols that must be implemented by all contractors/ employees, to ensure that remediation actions do not contravene Section 25 (General Environmental Duty) of the *Environment Protection Act 1993*. The remedial activities must be managed such that they do not adversely impact on the health and environment of surrounding human and ecological receptors.

## 1.3 Key Project Stakeholders

This project relates to the future development of the Site. Key project stakeholders are considered to comprise:

- DFJ Holdings – Site Owner and Developer;
- Land & Water Consulting (or similar environmental consultant) – SRP Manager/ Site Representative - direct and validate the remediation works;
- The appointed site contamination auditor (review of this SRP, review of the actual remediation works and validation process/ reporting and potentially the provision of a Site Contamination Audit Report (SCAR) stating that the Site is suitable for intended use); and
- Contractor – appointed by the Site Owner to undertake demolition and earthworks (remediation).

The Site is considered by the Environment Protection Authority (EPA) to be a source of contamination (Albert Park Assessment Area) and therefore the EPA also can be considered a stakeholder in the progress and completion of remediation of the Site (the mechanism for reporting to the EPA in this context is via the site contamination audit).

## 1.4 SRP Structure

The SRP has been prepared to direct remedial works accounting for:

- Section 2: Responsibilities;
- Section 3: Site Information;
- Section 4: Site Contamination;
- Section 5: Conceptual Site Model
- Section 6: Remediation Action Plan;
- Section 7: Environmental Management Plan;
- Section 8: Work Health and Safety Considerations; and
- Section 9: SRP Monitoring.

## 1.5 Guidelines

A number of relevant guidelines and reference documents were referred to in preparing the SRP and include:

- **South Australian EPA (2019a), Guidelines for the Assessment and Remediation of Site Contamination** ("GAR", see Appendix D for compliance with the GAR Remediation Reporting Checklist);
- *Environmental Protection Act 1993*, Regulations and Environment Protection Policies (EPPs):
  - Environmental Protection Regulations 2009.
  - Environmental Protection (Air Quality) Policy 2016.
  - Environmental Protection (Noise) Policy 2007.
  - Environment Protection (Water Quality) Policy 2015.
- South Australian EPA Guidelines, Technical Bulletins and Information Sheets for advice on items such as waste tracking and construction noise:
  - SA EPA, Guidelines for the Assessment of Underground Storage Systems, 2019c
  - SA EPA, General environmental noise, Updated May 2013 (EPA 424/13)
  - SA EPA, Waste Transport Certificate Guidelines, 2010.
  - SA EPA, Stormwater Pollution Prevention – Code of Practice for the Building and Construction Industry, 1999
  - SA EPA, Handbook for Pollution Avoidance on Commercial and Residential Building Sites, 2004
  - SA EPA, Guideline for Stockpile Management: Waste and Waste Derived Products for Recycling and Reuse, 2010 updated October 2020
  - SA EPA Environmental management of dewatering during construction activities (updated June 2021 – EPA 1093/21)
- Relevant South Australian Occupational, Health, Safety and Welfare legislation and guidelines:
  - *Work Health and Safety Act 2012* (South Australian State Legislation); and
  - Work Health and Safety Regulations 2012 (South Australian State Legislation).
- SA EPA, Waste Disposal Information Sheet - Current criteria for the classification of Waste – Including Industrial and Commercial Waste (Listed) and Waste Soil, March 2010;
- National Environmental Protection (Assessment of Site Contamination) Measure produced by the National Environment Protection Council, December 1999 (as amended 2013);
- AS 4976-2008 - The removal and disposal of underground petroleum storage tanks; and
- EPA Victoria, The Design, Installation and Management Requirements for Underground Petroleum Storage Systems (UPSS), 2015.

## 1.6 Relevant Documents

The requirements (scope) of the SRP were based on the conclusions / findings of the following assessment reports undertaken in relation to the Site:

- LWC (2018), Detailed Site Investigation 24 – 30 Murray Street, Albert Park, South Australia prepared by Land & Water Consulting for DFJ Holdings on 13 June 2018;
- LWC (2021) Site Specific Risk Assessment 24 – 30 Murray Street, Albert Park, South Australia prepared by Land & Water Consulting for DFJ Holdings 31 August 2021.

Offsite areas have been assessed within the EPA Assessment Area Framework and the following documents have been taken into account in interpretation of site specific contamination risk and how the Site may influence/ affect offsite areas:

- Golder (2020). Environmental Site Assessment – Albert Park Stage 2. Prepared for the Environment Protection Authority by Golder, 11 February 2020. 19131233-001-R-Rev0.
- JBS&G (2019). Albert Park Environmental Assessment, Albert Park SA. EPA Reference 05/24994, 23 August 2019 55976\_122490\_Rev0.
- JBS&G (2020). Albert Park Environmental Assessment – Stage 3 Prepared by JBS&G for the Environment Protection Authority 3 December 2020 59749, 133546, Rev\_0.
- JBS&G (2021). Albert Park Stage 4 – Soil Vapour Monitoring Event – Albert Park Assessment Area. Prepared by JBS&G for the Environment Protection Authority 16 April 2021 60523, 136680, Rev\_1.
- LBW Co (2020). Preliminary Environmental Assessment Development Plan Amendment Area Albert Park, South Australia. Report for Jensen Plus June 2020.



## 2 RESPONSIBILITIES

The SRP provides details of responsibilities and procedures for managing environmental issues during remediation works at the site, with consideration to contamination exposure risks and environmental impacts at the site.

A number of personnel will be responsible for the implementation of the SRP:

### 2.1 Environmental Consultant

#### ***Land & Water Consulting – SRP Manager and SRP Environmental Consultant***

The SRP has been formulated by LWC. LWC is responsible for ensuring compliance with the SRP by all employees, site visitors and sub-contractors. LWC will document progress in terms of environmental compliance as required.

The SRP Manager is responsible for ensuring that all site works adhere to the requirements outlined in the SRP and ensure that any activity on the Site involving exposure to potentially contaminated areas is undertaken in a controlled and safe manner (including all necessary workplace health and safety (WHS) and environmental requirements). This is achieved by:

- Ensuring relevant parties are made aware of the content and requirements of the SRP, including the Site procedures and forms, and environmental awareness induction (including importance of incident reporting); and
- Implementing a formal process of approval and documentation.

The SRP Site Representative will supervise all remediation works and work collaboratively with the appointed Site Contamination Auditor and all sub-contractors.

The SRP Manager is required to verify on the completion of the works that works were undertaken in accordance with the SRP.

The SRP Manager is responsible for ensuring that all employees and contractors are made aware and act within the requirements of the SRP.

The environmental consultant is responsible for:

- Direction of the implementation of the remedial scope;
- Environmental monitoring during the remediation;
- Environmental incident documenting and reporting (to the site owner, the site contamination auditor and the Environment Protection Authority, including any regulatory notifications);
- Identification of corrective action;
- Oversight of implementation of corrective action;
- Validation of remedial works (sampling and analysis, environmental observations);
- Remediation Validation Reporting.

## 2.2 Site Contamination Auditor

### ***Mr Graeme Miller (Senversa) - Site Contamination Auditor***

The role of the Site Contamination Auditor (the Auditor) is to independently and objectively examine and review the accuracy and completeness of the remediation and/ or assessment work carried out by the SRP Manager/ Environmental Consultant and to complete a site contamination audit report (and statement), in accordance with the requirements of the EP Act, the EP Regulations and relevant guidelines issued or approved by the EPA. The Auditor is required to:

- Review and endorse the SRP;
- Confirm that the proposed remediation should achieve an acceptable outcome that will enable the completion of the audit;
- Confirm that the proposed strategies for environmental management of any on-site remediation adequately protects human health, property and the environment during remediation activities.

Further information regarding the roles and responsibilities of the Auditor are detailed in EPA (2015) Site contamination auditors information sheet (EPA 664/15).

## 2.3 Demolition / Earth-moving Contractor

### ***Employees and Contractors***

Each employee and contractor shall be responsible for working within the requirements of this SRP, endeavour to avoid work practices that are damaging to the environment and identify and report any environmental problems to the SRP Manager. Each contractor and employee undertaking remediation works shall:

- be responsible for working within the requirements of the SRP;
- avoid work practices which may adversely impact on the health and environment of surrounding human and ecological receptors.; and
- identify and report any environmental problems to the SRP Manager.

Contractors, employees and anyone involved in undertaking or observing the remediation works will be required to be appropriately inducted on how the issue of exposure to any contamination will be managed (including any WHS and environmental precautions).

## 2.4 Environmental Awareness Induction

All parties/ personnel involved in remediation works shall be made aware of the requirements of the SRP including incident reporting and prior to commencing site works shall sign a compliance agreement.

The induction shall be facilitated by the SRP Manager and shall be undertaken by all site workers likely to be present during the bulk of the remediation works.

Subcontractors and other personnel that are likely to have only limited involvement with the remediation process shall undergo a site induction on arrival to site with the SRP Site Representative (appropriate person appointed by the SRP Manager).

Copies of the SRP, induction notes (and associated documents) shall be made available and accessible to all site personnel for reference and review.

The purpose of the induction is to ensure that employees and contractors are made aware of the environmental and health risks associated with remediation activities on-site and how best to manage these risks. The induction shall also address how to manage work practices that may adversely impact on the health and environment of surrounding human and ecological receptors. Records detailing training attendees and the content of the training/induction will be kept.

The induction shall cover:

- Schedule of activities and personnel responsibilities;
- Site control procedures;
- Contaminants and hazard identification;
- Exposure risk;
- Protective equipment usage;
- Decontamination procedures;
- Implementation of environmental controls;
- Incident reporting;
- Enterprise management (public relations);
- Designated areas and other requirements (e.g. parking, site access, etc.);
- Prohibitions (e.g. smoking, eating, etc.); and
- Emergency response.