Unexpected Finds Protocol

270 Aldington Road, Kemps Creek

Prepared for: Stockland Development Pty Ltd

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For and on behalf of

ADE Consulting Group Pty Ltd

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1 Summary

This Unexpected Finds Protocol (UFP) has been developed to provide guidance on processes to follow if an unexpected find is encountered during remediation or future civil and construction works. The general procedure for encountering an unexpected find is outlined in the flow chart below.

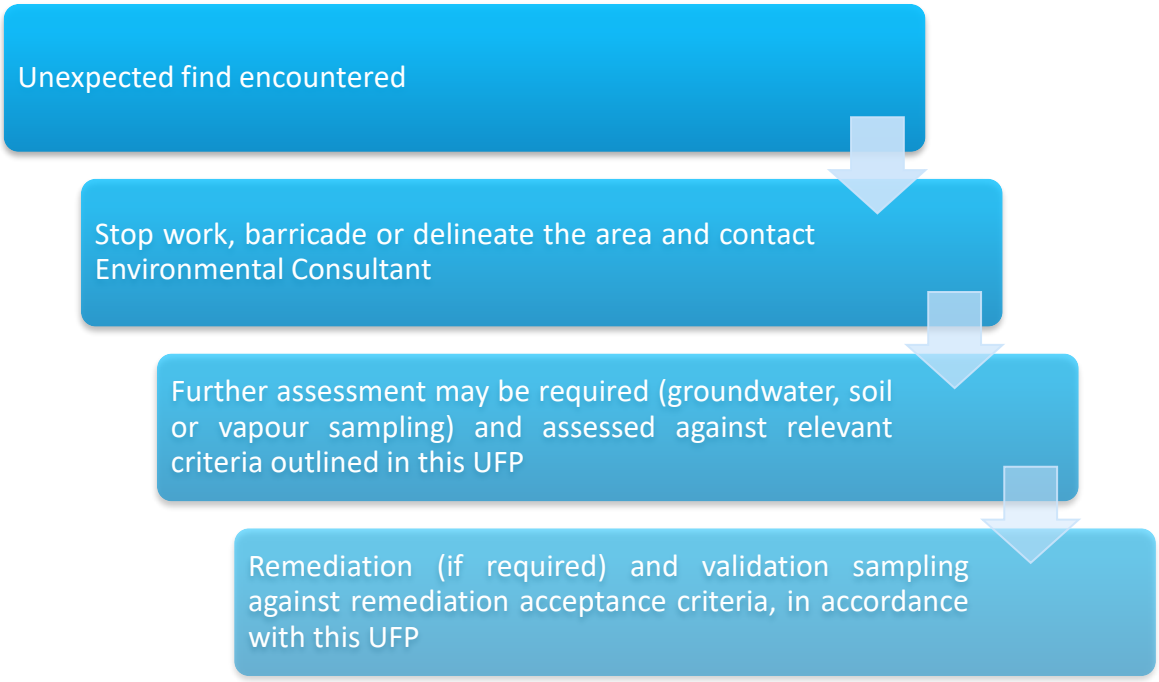

Figure 1. Unexpected finds protocol

Site assessment criteria (SAC) and land use criteria are interchangeable and both terms refer to the commercial / industrial land use criteria (HIL-D) as detailed in the National Environment Protection Council (NEPC) (2013). *National Environmental Protection (Assessment of Site Contamination) Measure Amended 2013* (ASC NEPM, 2013).

The following sub-sections outline the procedures to be implemented for various unexpected finds scenarios.

1.1 Underground Storage Tanks (USTs)

Should any underground storage tanks (USTs) and associated infrastructure be located during excavation works, works will cease immediately, and the area will be delineated or barricaded. The identified UST and surrounding area will be assessed (groundwater or soil sampling, as required) by the Environmental Consultant in line with proposed land use criteria in accordance with ASC NEPM (2013) and managed / removed as per legislative requirements outlined below. USTs should be managed on-site or removed as follows:

- Identify the nature of the find and inform the Environmental Consultant;
- Identify the presence of and nature of any contents. This may involve sampling and testing by the Environmental Consultant;
- Remove any liquids from within the tank(s) and make safe;
- Remove and dispose of the structure to a licensed facility (e.g. fuel lines, tanks etc.) or in-situ decommissioning via filling with foam or concrete; and
- Validation of soils and pits.

1.1.1 Legislative requirements

In NSW, there are multiple regulatory frameworks for managing chemical contaminants and asbestos in soils and a regulatory framework for managing asbestos in the workplace. The remediation to be undertaken is to be carried out in accordance with local, state and national environmental regulations and planning guidelines including:

- Environmental Planning and Assessment Act 1979 (NSW).
- Environmental Planning and Assessment Regulation (2000).
- Protection of the Environment Operations Act 1997.
- State Environmental Planning Policy (Sydney Regional Growth Centres) 2006.
- State Environmental Planning Policy (SEPP) – Resilience and Hazards 2021.
- Contaminated Land Management Act 1997.
- Work Health and Safety Regulation (2017).
- Work Health and Safety Act (2011).

As such, this report has been developed in accordance with the following guidelines and regulations:

- Acid Sulfate Soils Management Advisory Committee (ASSMAC, 1998).
- Australian and. New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018).
- Guidelines on the Duty to Report Contamination under the Contaminated Management Act 1997
- National Environment Protection Council (NEPC) (2013). *National Environmental Protection (Assessment of Site Contamination) Measure Amended 2013*. (ASC NEPM, 2013).
- New South Wales Environment Protection Authority (NSW EPA) (2014). *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA, 2014).
- NSW EPA (2017). *Guidelines for the NSW Auditor Scheme (*3rd Edition).
- NSW EPA (2020). *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines* (NSW EPA, 2020).
- NSW EPA (2022). *Sampling Design Guidelines* (NSW EPA, 2022).
- SafeWork NSW (2022). Code of Practice: *How to manage and control asbestos in the workplace* (Safework NSW, 2022).
- SafeWork NSW (2022). *Code of Practice: How to safely remove asbestos* (SafeWork NSW, 2022).

1.2 Underground Structures

If other underground features are discovered which may have implications on the site remediation and validation, e.g., pits, the find should be managed / removed as follows:

- Identify the nature of the find and inform the Environmental Consultant;
- Identify the presence of and nature of any contents. This may involve sampling and testing by the Environmental Consultant; and
- Remove and dispose of the structure.

1.3 Asbestos

If asbestos containing material (ACM) is encountered within areas previously classified as not containing ACM, the contractor shall stop work and inform the Environmental Consultant, who will re-evaluate the site assessment. Any incidents that may potentially arise shall be managed in accordance with **Section 2.** All

remediation works shall be undertaken under the supervision of a competent person appointed by the contractor or the Client.
Any ACM found within the soil, post-demolition of buildings on site should be dealt with in accordance with the methods outlined within ASC NEPM 2013 and other relevant NSW EPA endorsed guidelines. Further soil sampling for delineation and validation shall be undertaken until the soil is deemed clear of asbestos.

The following control measures should be implemented if the soil suspected of containing asbestos is encountered during excavation works:

- Preparation of an asbestos management plan (AMP) for the site which will remain in place for the duration of the development works;
- Setting the boundaries of the contamination as determined by an independent licensed asbestos assessor or competent person;
- Ensuring there is minimal disturbance of the contaminated soil until the asbestos management procedures have been implemented;
- Isolating and securing the removal work site using signs and barriers;
- Controlling dust with dust suppression techniques (such as water and wetting agents);
- Providing personal protective equipment (PPE) based on the level of contamination and the control measures implemented;
- Sampling and / or air monitoring;
- Providing education and training for workers on hazard and safe work practices to minimise air borne dust exposure; and
- Implementing decontamination procedures for the workers and the equipment.

The following remediation strategies can be implemented in case of any unexpected asbestos findings:

- Any surficial presence of asbestos can be managed by 'Emu-picking' the fragments and a clearance inspection shall be undertaken by a suitable person to ensure that the fragments are removed to a satisfactory standard; and
- Soils containing asbestos can be removed off-site to an EPA authorised landfill and the remaining soil shall be validated. If any imported materials are to be brought on site, it must be ensured that it complies with the site specific Fill Management Plan (the FMP):

    - ADE Consulting Group (2023). *Fill Management Plan, 244-280 Aldington Road, Kemps Creek NSW* (reference: A101023.0847.00.FMP.v1f, 13/11/2023).

1.4 Unidentified Contamination

Indicators of potential contamination in soil and groundwater include:

- Hydrocarbon odors.
- Staining or discoloured soils.
- Sulfidic odors or seashells.
- Paint chips.

If potential contamination is found during remediation, civil or construction works, the following controls will ensue:

- Upon discovery of further Areas of Environmental Concern (AECs), the Client Project Manager is to be notified and the area barricaded.
- Visual identification of the nature of the issue and the likely extent of the AEC by the Environmental Consultant.

- The Environmental Consultant is to conduct appropriate investigations with a view to identifying the nature and extent of the contamination.

The following remediation strategies can be implemented in case of any unexpected contamination findings:

- Following further assessment and characterisation, material can be disposed off-site to an adequate receiving facility if required. This will be assessed on a case-by-case basis.
- If contamination is found and remediation action or management is considered necessary, a remediation action plan (RAP) will be prepared by the Environmental Consultant. The remediation will be implemented by the Remediation Contractor and validated by the Environmental Consultant.

Cap and containment of contaminated soil on-site and a long-term environmental management plan were not considered as options as they are not supported by the Council or the developer.

1.4.1 Failed remediation works and/or aesthetic criteria

In the unlikely event that the remediation works fail to bring the contaminant of concern below the criteria adopted for the site the following options should be considered:

- Re-excavate and re-sample the area of concern until the reported concentrations are below the commercial / industrial land use (HIL-D) criteria. Revise the remediation strategy in cases where continual validation failure has occurred.

1.5 Incident Management

In the event of any environmental incidents on site, the Client Project Manager shall be notified immediately. Necessary measures shall be undertaken as soon as reasonably practical to contain the contamination and the EPA shall be notified if required. Preventative measures shall be implemented to avoid any potential risks that may pose environmental harm.

2 Remediation Strategy

The general sequence for remediation would follow:

- Unexpected finds during construction, Client to follow Unexpected Finds Procedure (UFP) outlined in **Section 1.**
- Assessment of suspected contamination by an Environmental Consultant in accordance with procedures outlined in the NEPC (2013).
- Based on the results, determination of remediation requirements:
  - No remediation required.
  - Remediation required: offsite disposal.
- Remedial Works:
  - Excavation and stockpiling of contaminated soils for re-use on-site if below the commercial / industrial (HIL-D) landuse criteria.
  - Waste classification and off-site disposal, if above commercial / industrial (HIL-D) landuse criteria or as required.
- Validation inspection and/or sampling in accordance with the commercial / industrial (HIL-D) land use criteria in accordance with the NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated*

Land.

- The Validation Report will provide the evidence that the contamination has been satisfactorily addressed and the site is suitable for the proposed commercial / industrial (HIL-D) land use.
- Validation and Quality Assurance.
- Development/implementation of a long-term environmental management plan (LTEMP) if required.

Containment of contaminated soil on-site is not permitted in accordance with Council and developer requirements.

2.1 Proposed Remedial Works Plans

The following outlines the proposed remedial works plans to be considered should any unexpected finds be encountered.

2.1.1 Contaminant condition: Impacted soil remedial strategy.

The process includes:

- Chemical assessment of the impacted material in accordance with commercial / industrial (HIL-D) land use criteria (HIL-D) as specified in ASC NEPM (2013) ; or
- Removal of contaminated soil to a licensed facility that can lawfully accept the material, followed, where necessary, by replacement with clean fill as per the FMP (ADE, 2023).
- Followed by a visual inspection of remaining contamination with further excavation if required, if there is evidence of further impacted material, further validation sampling of the walls and base of the excavation until validated.

2.1.2 Contaminant condition: Bonded ACM impacted soil strategy

Soils containing asbestos (ACM) are to be emu-picked or sent off-site to an appropriate licenced facility.

For material that does not have previous contamination data, the following strategies would be implemented for ACM impacted soil:

- Visual inspection of material for visible bonded ACM fragments.
- Sampling and analysis for chemicals of potential concern (CoPC) as per the sampling density specified in NSW EPA (2022). *Sampling Design Guidelines*.
- Assess if the stockpiled material can be beneficially reused within the project according to the commercial / industrial (HIL-D) land use criteria in ASC NEPM (2013).
- If it contains ACM above the commercial / industrial (HIL-D) land use, the Client will consider , emu-picking or off-site disposal.

Any material that is deemed necessary to be taken off-site as a part of the construction and excavation works will be classified in accordance with the NSW EPA (2014). *Waste Classification Guidelines Part 1: Classifying Waste* prior to disposal.

2.1.3 Contaminant condition: Heavy metal exceedance strategy

The following strategies will be implemented for soil with heavy metal exceeding land use criteria:

- Sampling and waste classification.

- Removal of impacted material to a licensed facility that can accept the waste.
- Validation of the excavation footprints in accordance with NSW EPA (2022). *Sampling Design Guidelines* and detailed in the specific remediation work plans.

2.1.4 Contaminant condition: Asbestos sheeting material strategy

The following strategies will be implemented for the management of asbestos only material, such as asbestos sheeting:

- Engagement of a Class B licensed asbestos removalist for removal of bonded asbestos material. If friable asbestos material is identified and confirmed by laboratory testing, a Class A Licensed asbestos removalist will be engaged. A Licensed Asbestos Assessor will also be engaged during removal and validation of friable asbestos material.
- Although not mandatory for the removal of bonded asbestos, asbestos air monitoring is recommended to ensure control measures are adequate to prevent generation of asbestos fibres.
- Removal of impacted material to a licensed facility that can accept the waste.
- Visual inspection and validation of the excavation footprints.

2.1.5 Contaminant condition: UST removal strategy

The following strategies will be implemented for the removal of a UST:

- The UST must be decommissioned in line with the WorkCover Code of Practice: *Storage and handling of dangerous goods.*
- Removal of liquid or gas contents from within the UST.
- Excavation of surrounding soils from UST with validation testing to ensure all potential leaching and any surrounding soil contamination has been removed.
- If surrounding soil contamination is indicative of groundwater contamination, or groundwater in the immediate vicinity shows indicators of contamination (such as odours or sheen), the installation of five groundwater monitoring bores to assess natural attenuation and the extent of the groundwater plume is recommended. Sampling is recommended at the source, followed by monitoring natural attenuation if required.
- The UST may be physically removed and remediated ex situ, with the materials appropriately classified and disposed of in line with the NSW EPA (2014) *Waste Classification Guidelines* or remediated in situ and filled with inert material such as sand, concrete slurry or foam.

Representative soil samples from the walls and floor of the excavation will be analysed for a range of environmental contaminants commonly associated with storage of petroleum hydrocarbon products. A validation report should be prepared after the system is decommissioned or removed.

2.2 Materials Tracking

A Materials Tracking Plan (MTP) will be implemented by the principal contractor. All materials handled during the earthworks will be tracked in order to allow verification of the correct movement and handling. The system will track materials from 'cradle-to-grave' and will provide information on the location and quantity of all material movements both on and off-site, so that the material being handled can be identified and accounted for.

The MTP will include confirmation of stockpile locations and contamination status by regular communication between client, principal contractor and the Environmental Consultant. Where necessary, stockpiles and / or pit locations will be recorded by surveying, to reduce the risk of cross-contamination between stockpiles.

As part of the MTP, records shall be kept ensuring that backfilling of excavations and beneficial reuse of material only occurs following the successful validation of the subject materials.

The MTP should be developed and agreed upon, in consultation with the environmental consultant. The principal contractor must implement the MTP in close association with the environmental consultant, to appropriately control and manage the excavation of material. The purpose of the MTP is to ensure that material movements are controlled at all times and placed in their correct locations.

The MTP will include:

- Material Excavation Form: a record of excavated materials on the site including the date, material type/description, excavated quantity, origin and intended destination.
- Stockpile Register: a record of all materials placed in each of the site stockpiles and including the date, material type/description, stockpiled quantity, origin and intended end use (which will be "for characterisation", "for backfilling" or "for off-site disposal". Material excavated and stockpiled will be identified with a marker (flag, stake) clearly labelled with the stockpile source information and a stockpile ID.
- Material Excavation to Placement Form: a record of excavated materials intended on beneficial re-use, including the date, material type / description, source location, excavated quantity, validation information (if required), placement location, and placement depth.

3 Limitation and Disclaimer

This report has been prepared for the exclusive use of the client and is limited to the scope of the work agreed in the terms and conditions of contract (including assumptions, limitations and qualifications, circumstances, and constraints). ADE has relied upon the accuracy of information and data provided to it by the client and others.

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Appendix A – Figures

REGIONAL MAP
SOURCE: http://www.whereis.com/

LEGEND

SITE BOUNDARY

NOTE:
ALL LOCATIONS ARE APPROXIMATE DIMENSIONS IN METRES.

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM, 03 MAR 2023.

revision	no.	description	drawn	approved	date
	A	FIRST ISSUE	MC	LL	17/10/23

SCALE 0 30 60 90 120 150 METRES 1:3000 @A3

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original size	A3

client: STOCKLAND DEVELOPMENT PTY LTD

project: UNEXPECTED FINDS PROTOCOL
270 ALDINGTON ROAD, KEMPS CREEK, NSW

title: SITE LOCATION PLAN

project no: A101023.0847 | figure no: FIGURE 1 | rev: A

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