

UNEXPECTED FINDS PROTOCOL

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31 August 2023



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Unexpected Finds Protocol

University of Newcastle Gosford Campus, 305 Mann Street Gosford

Kleinfelder Project: 20232408

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1 INTRODUCTION

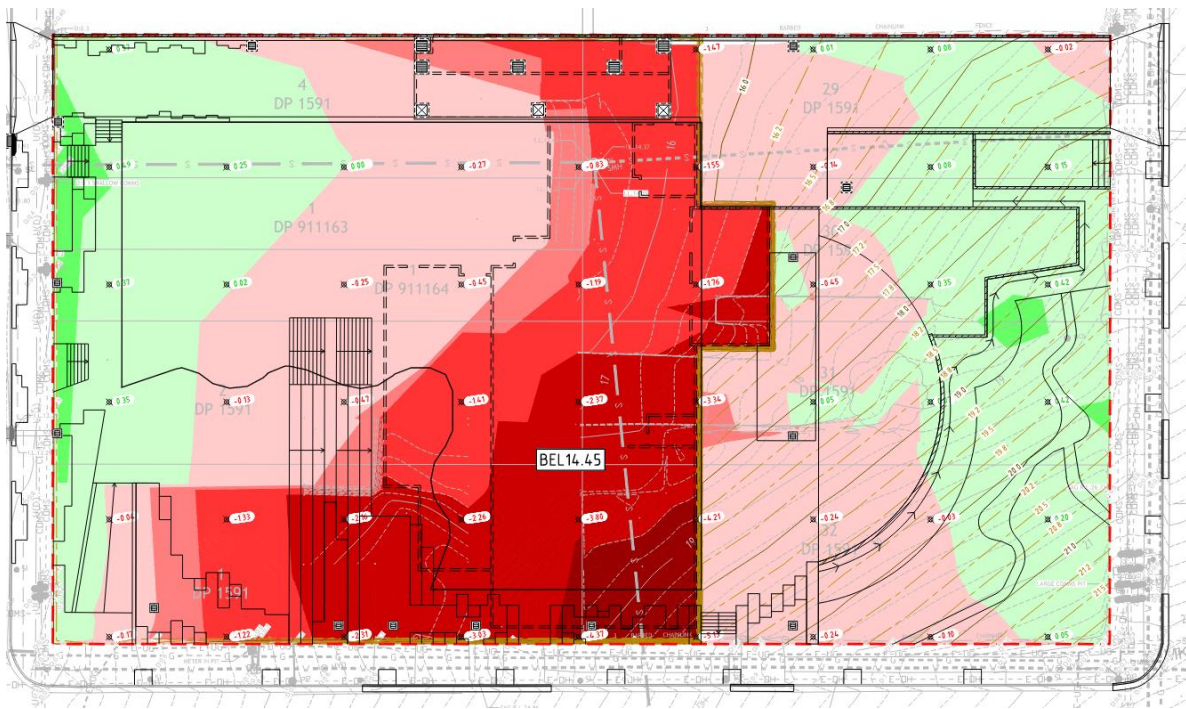
Kleinfelder Australia Pty Ltd (Kleinfelder) was commissioned by The University of Newcastle (UoN) to prepare an Unexpected Finds Protocol (UFP) at 305 Mann Street, Gosford (herein referred to as 'the Site'). The Site layout is presented in **Figure 1, Appendix A**.

It is understood that UoN is seeking to redevelop the Site into the Central Coast Campus of the University of Newcastle. Consent is sought for the proposal as a State Significant Development (SSD-47749715). The UFP is required to establish and document the management procedures that protect unidentified heritage aspects of the site, deal with unknown buried structures and allow the mitigation of potential environmental and health impacts associated with unexpected contamination issues during construction works.

1.1 PROPOSED DEVELOPMENT

Kleinfelder understands that the proposed structure comprises a four-storey educational establishment building on the western portion of the site, retail, on-site parking, and publicly accessible open space along the western, southern, and eastern parts of the site. The building is to have an underground carpark level and therefore significant excavation of soils will be required, along with the construction of retaining walls. The proposed earthworks plan is shown in

Figure 1-1 below:



Surface Analysis: Elevation Ranges				
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)	Volume (m3)
1	Dark Red	-6.000	-4.000	38.8
2	Red	-4.000	-2.000	691.8
3	Light Red	-2.000	-1.000	925.9
4	Very Light Red	-1.000	-0.500	678.4
5	Light Pink	-0.500	0.000	1084.8
6	Light Green	0.000	0.500	349.4
7	Medium Green	0.500	1.000	3.2
8	Dark Green	1.000	1.500	0.0

Figure 1-1: Proposed Earthworks Plan



2 SITE CHARACTERISATION

2.1 SITE LOCATION

The Site is located at 305 Mann Street, Gosford 2308, approximately 90 km southwest of Newcastle. A summary of the Site details is outlined in **Table 2-1: Site Details**.

Table 2-1: Site Details

Site Name	Former Mitre 10 Warehouse
Site Address	305 Mann Street, Gosford, NSW 2308
Current Title Identification	<ul style="list-style-type: none">• Lots 1, 2, 4, 29, 30, 31 & 32.• Section 1 – DP 1591• Lot 1 – DP 911163, DP 911164
Local Council	Central Coast Council
Site Zoning	B4 – Mixed Use
Site Owner	University of Newcastle
Current Site Use	Vacant commercial premises (most recent past operation as a Mitre 10 hardware store).
Proposed Site Use	UoN campus, consistent with current zoning (B4 Mixed Use).

2.2 SITE FEATURES

The Site covers an area of approximately 4675 m². Structures and features at the Site include a large warehouse (which housed the former Mitre 10 store) occupying the western portion, a central vegetated garden area and a concreted open car park that occupies the remainder of the Site.

The concreted open car park and central garden area slope toward the north-west and are in poor condition with several cracks and vegetation growing throughout.

Given that the Site has been previously developed and fill materials were encountered during intrusive investigation, there is the possibility of encountering unexpected fill materials during the Client's development.

2.3 SURROUNDING LAND USE

Adjacent, surrounding land use comprises:

- **North** – Numerous commercial businesses are located northwards along Mann Street, zoned as Mixed Use (B4). Approximately 150 m north-east and 180 m north-west are residential properties, zoned as General Residential (R1). The Gosford Golf Club is located approximately 400 m north-west, within a Public Recreation (RE1) planning zone.
- **East** – Variable zoning including Mixed Use (B4), General Residential (R1) and Public Recreation (RE1) are present directly east. Further east is the Rumbalara Reserve located approximately 170 m from Site.
- **South** – Mixed Use (B4) zoning continues south of the Site for approximately 250 m, with Commercial Core (B3) zoning beyond. Hotel Gosford, Woolworths and Chemist Warehouse are all located along Mann Street within 500 m of the Site.
- **West** – A rail infrastructure facility, within an Infrastructure (SP2) planning zone, runs north-south approximately 50m west of the Site, adjacent to Showground Road. Central Coast Local Health District and Gosford Hospital are located 100m west of the Site, zoned as Infrastructure (SP2). South of the hospital is residential housing, zoned as General Residential (R1), with Gosford High Waterview Park located approximately 500 m south-west under Public Recreation (RE1) zoning.



3 UNEXPECTED FINDS

3.1 DEFINITION

An unexpected find is defined as potential contaminated soil or groundwater, any unexpected archaeological discovery, underground structures such as storage tanks or asbestos containing material encountered on the Site that were not previously identified in the Geotechnical or Detailed Site Investigation works, or during pre-construction investigations.

3.2 TYPES

A non-exhaustive list of the types of unexpected finds that may be encountered during construction work on the Site is presented in **Table 3-1** below:

Table 3-1: Identifiable Characteristics of Unexpected Finds

Potential Unexpected Find	Observable Characteristics	Type of Contaminant/Dangers
Heritage / Archaeological	Aboriginal stone artefacts, engraved rocks, scarred trees, etc. Artefact scatters such as clustering of broken and complete bottles, glass, ceramics, animal or skeletal remains and clay pipes, etc Remains of other infrastructure including stone culverts, sandstone, bluestone or brick buildings, etc.	Damage to potential cultural heritage value
Petroleum hydrocarbons	Oily/hydrocarbon odour, dark staining, sheen on water	TRH, BTEX, PAH, lead, vapours
Buried dry waste materials	Wood, plastic, metal fragments, building rubble etc.	Asbestos, heavy metals
Buried or surface bonded Asbestos-Containing Material (ACM), asbestos fines/friable asbestos	Building waste/pipes, insulation, textured coatings, vinyl tiles	Asbestos
Buried organic materials	Decomposed plant matter	Ammonia, sulphates, phosphates, methane, carbon dioxide, hydrogen sulphide
Structures containing possible hazardous materials	Buried storage tanks, septic tanks, wells, basements, pipelines, odorous fill, visually impacted groundwater etc.	Petroleum vapour, methane, carbon dioxide, hydrogen sulphide, TPH, BTEX, PAH, lead, asbestos. Biological waste. Voids.
Ash or slag deposits	Light weight, grey/white sand and gravel-sized particles, often vesicular	PAH, heavy metals, alkaline leachates. Buried concrete impacts.
Landfill	Domestic, clinical, putrescible waste along with other waste types mentioned in this table	Heavy metals, acids, ammonia, sulfides, sharps
Unusual odours	Sweet odours, rotting odours, oily odours etc.	Various
Per- and polyfluoralkyl substances (PFAS)	Foaming in waters with little agitation	PFAS



Potential Unexpected Find	Observable Characteristics	Type of Contaminant/Dangers
Acid Soils	Black, red/yellow/orange mottled discolouration, organic odour.	Buried concrete impacts, possible acidic runoff.
Buried drums	Metal or plastic drums containing unknown potentially hazardous substances. Drums should not be opened to inspect contents until a qualified hazmat contractor has been engaged to assess potential risks	Various



4 PROTOCOL

4.1 ROLES AND RESPONSIBILITIES

Project roles and responsibilities for the implementation of this UFP and compliance with safety, environmental, legal and other requirements are documented in **Table 4-1**. Review and coaching of this UFP shall be included as part of the Principal Contractor’s (PC) site induction procedure.

Table 4-1: Roles and Responsibilities

Roles	Environmental Responsibilities
Site Owner	UoN or their delegate Project Manager shall review and endorse this UFP prior to implementation of the works.
PC Project Director	The PC Project Director (PD) shall: <ul style="list-style-type: none"> ▪ Review and sign off on the UFP; and ▪ Undertake an inspection audit of the project activities to measure compliance with the UFP.
PC Project Manager	The PC Project Manager (PM) shall: <ul style="list-style-type: none"> ▪ Comply with the relevant conditions of statutory approvals; ▪ Ensure all unexpected finds are reported to the Site Owner and other stakeholders (as appropriate); ▪ Ensure all protection and mitigation works comply with relevant regulatory requirements; and ▪ Ensure the Environmental Manager or Health, Safety and Environmental (HSE) Manger or Site Manager briefs all Site staff and sub-contractors on the UFP.
PC Site Manager	The PC Site Manager shall: <ul style="list-style-type: none"> ▪ Implement the UFP at the Site; and ▪ Ensure all personnel are inducted and aware of this UFP the relevant procedures and their roles.
PC Environmental Manager (or HSE Manger) or delegate	The Contractors Environmental Manager or HSE Manager or delegate shall: <ul style="list-style-type: none"> ▪ Respond to reports of unexpected finds and ensure the procedures are implemented and the Project Manager is informed; ▪ Undertake corrective actions in response to the recommendations of the contaminated land specialistspecialist or asbestos hygienist or surveyor or heritage / archaeology consultant; ▪ Keep a written record of the unexpected find, actions taken and outcomes and provide this to the Site Owner; and ▪ Monitor and review compliance.
All Site Staff and Sub-contractors	<ul style="list-style-type: none"> ▪ All workers on Site have the right and responsibility to identify potentially unexpected finds. Site personnel are to notify the Site Managerof unexpected finds, who will then contact the Environmental Manager / HSE Manager or delegate who will be responsible for evaluation of the unexpected find.

4.2 MANAGEMENT

Where unexpected finds occur or are suspected, works will be temporarily suspended in the affected area. The PC Project manager shall notify the Site Owner (UoN) and/or their delegate in writing of the nature, extent, and proposed management of each unexpected find within twenty-four hours of discovery.

Due to the variability in the nature and extent of an unexpected finds, it is not possible to define specific remedial strategies for potential contamination, managing archaeological finds or unanticipated buried structures; however, the procedure described in **Section 4.4** details a process for identifying and evaluating feasible options to manage an unexpected find.



4.3 TRAINING

As stated in **Section 4.1**, all personnel on Site have the right to identify unexpected finds. In order for this to be carried out effectively, all personnel will be made aware of and trained in the recognition of potential unexpected finds. Training shall be undertaken as part of the general site induction and refreshed at toolbox talks. Personnel must be able to identify the following:

- Visual and olfactory indicators of a contaminated soil and of groundwater;
- Asbestos and ACM;
- Buried drums, tanks, structures and services;
- Fill;
- Waste as fill; and
- Potential artefacts.

It should be noted that the Site has the possibility of acid-producing soils. The Environmental Manager (or HSE Manager) will be responsible for making the Site Manager aware of the nature of these soils prior to construction activities.

4.4 PROCEDURE

In the event that a person on Site identifies an unexpected find, the PC shall undertake the actions presented in **Table 4-2** below:

Table 4-2: Unexpected Finds Procedure

Step	Description	Action
1A	Potential contamination/hazard is encountered during Site works	Cease work in the potentially impacted area, clear the area of personnel and assess the potential immediate risk to health/environment as soon as it is safe to do so. Assess if evacuation or assistance of emergency services is required and action by calling 000 as appropriate.
1B	Potential heritage or archaeological material is encountered during Site works	Cease work in the potentially impacted area and make safe, clear the area of personnel and protect from disturbance. Do not tamper or attempt to remove the find.
2	Health, safety and environmental management	<p>Delineate an exclusion zone using the appropriate barriers and signage. Ensure that control measures are in place, if safe to do so::</p> <p>Odours/volatile compounds: odour suppression, no flames/sparks. signage;</p> <ul style="list-style-type: none"> • Potential ACM: cover with weighted plastic sheeting or geofabric if practicable, otherwise use dust suppression as appropriate; and • Potential heritage / archaeological material: cover area with tarps to preserve the finding. <p>Buried structures or utilities: Make the area safe from potential collapse, prevent uncontrolled spillage or leakage, for utilities related hazards contact the relevant utility provider.</p>



Step	Description	Action
3	Assess the unexpected find	<p>Communicate the nature of any encountered hazards and require precautions and management measures to all site personnel. If necessary, due to the nature of the hazard, extend communications and precautionary measures to adjacent site users.</p> <p>Engage a relevant specialist, dependent upon the nature of the hazard.</p> <p>For contamination: a contaminated land specialist and/or an asbestos hygienist or licensed asbestos assessor should be engaged, as appropriate.</p> <p>A contaminated land specialist should provide:</p> <ul style="list-style-type: none"> • A preliminary assessment of the nature of the suspected contamination and supply immediate management controls as needed • Advise what further assessment &/or remediation works are required in conjunction with EMP and other management plans • Undertake a targeted site investigation if necessary to sample and analyse contaminated media. <p>Potential or confirmed contamination will be characterised with consideration of ASC NEPM (NEPC 2013) and soil material will be classified in accordance with the Waste Classification Guidelines (NSW EPA 2014).</p> <p>An asbestos hygienist or licensed asbestos assessor should provide:</p> <ul style="list-style-type: none"> • A preliminary assessment of the nature of the suspected asbestos and supply immediate management and monitoring controls as needed; • Advise what further assessment &/or remediation works are required in conjunction with an environmental management plan (EMP) and other management plans; and • Undertake sampling and testing as necessary to identify and analyse the suspected asbestos containing material. <p>For archaeological finds: Engage a heritage / archaeology consultant, as appropriate.</p> <p>A heritage / archaeology consultant should provide:</p> <ul style="list-style-type: none"> • A preliminary assessment of the nature of the suspected artefacts / and supply immediate management controls as needed; • Advise what further assessment &/or remediation works are required in conjunction with a cultural heritage management plan (CHMP) and other management plans; and • Undertake a site survey, monitoring, heritage interpretation, investigation or analysis if necessary. <p>For buried structures: For stability/collapse risk and/or potential impacts on proposed foundations (due to voids, or need to remove structures) a structural engineer and/or geotechnical engineer should be consulted. For historical structures, a heritage/archaeological specialist may also be required once the area has been made safe.</p> <p>For utilities: Contact the appropriate utility provider.</p>



Step	Description	Action
4	Management/mitigation action and reporting	<p>Implement necessary management &/or mitigation measures based on the recommendations of the specialists engaged during Step 3 by the contaminated land specialist or asbestos hygienist or licensed asbestos assessor or heritage / archaeology consultants or structural/geotechnical specialist or utility provider in aid of allowing construction to recommence with minimal impact to health and the environment.</p> <p>Record details of the unexpected find and the actions undertaken, including but not limited to the following:</p> <ul style="list-style-type: none">• Location, nature and extent of unexpected find;• Scope, methodology and results of any investigation;• Scope, methodology and outcomes from any remedial activities completed;• Results of any validation sampling or clearance certificates necessary;• Implemented changes to risk control measures; and• Notify the Site owner (UoN), local council (Central Coast Council) and NSW EPA as appropriate.
5	Recommence works	<p>All relevant information and recommendations will be provided to the Site Manager by the contaminated land specialist or asbestos hygienist or surveyor or heritage consultants. Once mitigation/remediation works have been completed, validated by sampling and it is safe to do so, construction works on the affected area may recommence.</p>
6	Monitor	<p>Inspections to allow for monitoring will be carried out as necessary by the Environmental Manager (or HSE manager) or delegate to ensure effectiveness of the management/mitigation action.</p>

4.5 AUDITING

Internal and external audit requirements will be carried out as outlined within the Contractors EMP.

4.6 NON-CONFORMANCE

Non-conformances will be managed as outlined in the Contractors EMP.



5 REFERENCES

- Archaeological Assessment Guidelines, Department of Urban Affairs and Planning, September 1996.
- Australian Standard – AS 1726-2017 Geotechnical Site Investigation. Contaminated Land Management Act 1997 (CLM Act, 1997).
- Heads of the Environment Protection Authority (HEPA), 2020. *Per- and Poly-fluoroalkyl Substances (PFAS) National Environmental Management Plan*, revision 2, as published February 2020 (PFAS NEMP, 2020).
- [Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia](#), Department of Water and Environmental Regulation, 2021
- Heritage Act 1977.
- Historical Archaeology Code of Practice, Department of Planning, December 2006.
- Kleinfelder, Central Coast Campus Geotechnical Investigation Report, 305 Mann Street Gosford, NCA22R147463, December 2022.
- Kleinfelder, Central Coast Campus - Detailed Site Investigation, 305 Mann Street, Gosford NSW, NCA22R14011, December 2022.
- National Acid Sulfate Soils Guidance: National acid sulfate soils sampling and identification manual and National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, 2018. National Environment Protection Council (NEPC), 1999. *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 as amended in May 2013 (NEPM, 2013).
- NSW EPA, 2020. Consultants Reporting on Contaminated Land, Contaminated Land Guidelines, as revised May 2020.
NSW EPA, 2017. Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd Edition), as published October 2017.
- NSW Acid Sulfate Soils Manual (Stone et al., 1998).
- Protection of the Environment Operations (Waste) Regulations 2014.
- The National Acid Sulphate Soils Guidance, 'Guidance for the dewatering of acid sulphate spoils in shallow groundwater environments, June 2018, Department of Agriculture and Water Resources.
- National Strategy for the Management of Coastal ASS, 2000, Department of Agriculture and Water Resources.
- Work Health and Safety Act 2011 Work Health and Safety Regulations 2017



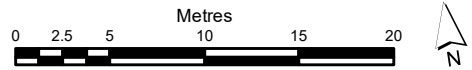
APPENDIX A – FIGURES





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- Legend**
- Site Boundary
 - Primary Road
 - Local Road



PROJECT REFERENCE: 20232408
 DATE DRAWN: 18/08/2023 Version 1
 DRAWN BY: StChan

DATA SOURCE:
 LPI - 2009
 Nearmap - 2023

Site Outline

University of Newcastle
 Geotechnical Investigation
 UoN Gosford campus
 305 Mann Street, Gosford, 2308

FIGURE:

1