

Belmont Desalination Plant

Unexpected Contamination Procedure

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Revisions and Distribution

Revisions

Draft issues of this document are identified as Revision A, B, C, etc. Upon initial issue (generally Contract Award) this will be changed to a sequential number commencing at Revision 0. Revision numbers will continue at Revision 1, 2, etc.

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Distribution List

Client's Representative	S Farrar
Project Director	S MacNish
Project Site Manager	J Nisbet
Environment Manager	A Grant
Environmental Representative	D Bone

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Terms and Abbreviations

Term/Abbreviation	Definition/Expanded text
ACM	Asbestos Containing Material
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Guidelines
ASS	Acid Sulfate Soil
ASSMAC	Acid Sulfate Soil Management Advisory Committee
ASSMP	Acid Sulfate Soils Management Plan
BoM	Bureau of Meteorology
CEMP	Construction Environmental Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
CLMP	Contaminated Land Management Plan
CoA	Conditions of Approval
CSWMP	Construction Soils and Surface Water Management Plan
DPI	Department of Primary Industries
DPHI	Department of Planning, Housing and Infrastructure
DPIE	Former Department of Planning, Industry and Environment
ECM	Environmental Control Map
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act
EPL	Environment Protection Licence
HWC	Hunter Water Corporation
PASS	Potential Acid Sulfate Soil
PESCP	Progressive Erosion and Sediment Control Plan
PFAS	Per- and polyfluoroalkyl substances
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
RAP	Remediation Action Plan
REMM	Revised Environment Management Measures
SSI	State Significant Infrastructure
TARP	Trigger Action Response Plan
TSS	Total suspended solids
UXO	Unexploded Ordnance
WMP	Waste Management Sub-Plan
VENM	Virgin Excavated Natural Material

1. Purpose and Objectives

1.1. Purpose

This Unexpected Contamination Procedure (the Procedure) forms part of the Construction Soil and Water Management Plan details the actions to be taken when potential contaminated soil and/or material is encountered during Work. In the event that contaminated materials are discovered, this Procedure will be implemented.

It is noted that this Procedure does not apply to Acid Sulfate Soils, which will be managed under an Acid Sulfate Soils Management Plan.

Unexpected contamination is considered any elevated level of a contaminant, not previously identified within a Contamination Report (including Preliminary Site Investigation Reports and Detailed Site Investigation Reports), including asbestos containing material (ACM).

A Contaminated Lands consultant will be engaged for the undisturbed 'A' Horizons. The consultant will advise on procedures or processes for the management of contaminated material found during work (including unexpected finds) in these areas. A NSW EPA accredited contaminated land Site Auditor will be engaged, and will review/audit the consultants work and/or advice, and provide interim audit advice (or equivalent) on whether the consultants procedures/processes are appropriate.

Additionally, the procedure references the potential occurrence of unexploded ordinance (UXO), and measures to be taken by John Holland (JH) should this event occur. The potential for UXO within the Project area was assessed as part of the original Environmental Impact Statement (GHD, 2019) and further reviewed by JH specialist (SoteriaSolutions) during pre-construction planning. Determinations from these assessments indicated that there is a low likelihood of UXO presence within the footprint of the project as the Project site was not used for any known military practice or bomb range activities. UXO is included in this Procedure and will be referenced in the relevant site AMS as appropriate in accordance with the Revised Mitigation Measures (REMMs) (refer to Table 2-1).

This Procedure will be implemented for the duration of all Work.

1.2. Objectives

The key objective of this Unexpected Contamination Procedure is to provide a framework outlining appropriate environmental controls and procedures to be implemented during construction activities to minimise risks associated with the disturbance, handling, treatment, or disposal of unexpected contamination.

2. Environmental Requirements

2.1. Conditions of Approval and REMMs

Specific requirements relevant to development of this Unexpected Contamination Procedure are addressed in Table 2-1 below.

Table 2-1: CoAs and REMMs driving requirement for this Unexpected Contamination Procedure

Outcome	Ref #	Commitment	Timing	Document Reference
Unexpected Contamination Procedure	C23	Prior to the commencement of earthworks, the Proponent must prepare an unexpected contamination procedure to ensure that potentially contaminated material is appropriately managed. Where any material identified as contaminated is to be disposed off-site, the disposal location and results of testing submitted to the Planning Secretary prior to its removal from the site.	Prior to construction / Construction	This Plan for record keeping.
Site Contamination	D33(d)	The recommendations of any Remedial Action Plan and the unexpected finds procedure must be updated following results of further site investigations and implemented throughout duration of project work.	Construction	This Plan
Exposure to Asbestos containing materials	SGC4	Include an asbestos finds procedure in the overall CSMP. The asbestos finds procedure will be prepared by suitably qualified person or a competent person as determined under the Work Health and Safety Regulation (2017), and include: - Guidance on the identification of asbestos containing materials (ACM) - Steps to be undertaken if ACM is identified during works - Management and remediation/removal procedures - Required health and safety controls - Waste disposal requirements - Ongoing site management.	Construction	Section 4 This procedure has been reviewed by Qualtest as part of their review of the overarching CSWMP
Unexpected discovery of contaminated soils	SGC11	Should unexpected contaminated soils be identified during any ground works, seek advice from a suitably qualified environmental consultant and notify the Hunter Water Project Manager. Complete any additional investigations/abatement in general accordance with guidelines developed or endorsed by NSW EPA. Include contingency plans for unexpected finds protocols for contaminated soils in the CSMP.	Construction	This Plan Section 3
Unexploded Ordinance	SGC5	Management and safe guarding procedures for UXO waste to be included in construction safety documentation.	Construction	This Plan Section 3
Encounter contamination during construction	HH1	Should unexpected contaminated soils be identified during any ground works, seek advice from a suitably qualified environmental consultant and notify the Hunter Water Project Manager. Complete any additional investigations/abatement in general accordance with guidelines developed or endorsed by NSW EPA. Include contingency plans for unexpected finds protocols for contaminated soils in the CSMP.	Construction	This Plan Section 3

2.2. Induction and Training

All site personnel (including sub-contractors) are to be inducted and/or toolboxed on the identification of potential contaminated soil/material, including asbestos identification, along with the requirements of this Procedure. An example toolbox is attached as Appendix A.

Site personnel should be informed of the potential sources of contamination within the Project and indications of contamination in soil and groundwater.

2.3. Roles and Responsibilities

The JH Project Environmental Manager (or delegate) will be notified in the event of an unexpected find on site during the works. The JH Project Environmental Manager will ensure that this Procedure is effectively implemented, and all site personnel are aware of the Procedure requirements.

The JH Project Environmental Manager will be responsible for ensuring that in the event that contaminated material is discovered, site personnel are informed immediately and all work in the vicinity of the find ceases. The Construction Supervisor will be advised of any required actions for the control of discovered contamination on site, such as implementation of exclusion zones and signage, and will be responsible for ensuring the actions are undertaken.

Contaminated land consultant (including Occupational Hygienist where required) will conduct assessments and investigations on potential contaminated material and provide advice and direction on the remediation works and validate once remediation works have been completed.

HWC will be informed by JH and will liaise with the relevant government agencies (such as NSW EPA). JH will consult with the Site Auditor where required. The Site Auditor will review relevant documentation e.g. Remediation Action Plan (RAP), if encountered in the A horizon within the undisturbed area of the site. This will include providing written evidence on the contamination risk and the appropriateness of the documentation and any proposed management measures as required.

All site personnel are responsible for reporting any unexpected contamination finds for the duration of the Project.

3. Procedure

This section outlines the tasks that will be carried out in the event that unexpected contaminated material is encountered during Work. Indicators of contamination in soils include:

- Discolouration of the soil, including staining and horizontal layers of discolouration
- Seepage of unusual liquids from soil or rock, or an oily sheen on water leaving soils (or on nearby surface water)
- Odours from soil or water
- Uncontrolled filling / anthropogenic material within fill
- Visible contamination including potential asbestos containing material (including intact services that may be constructed of asbestos, such as pipes)
- Unexpected underground storage tanks, drums, ordinance and other buried waste (noting that buried waste itself may not be considered contamination but could indicate poor contamination disposal practices previously undertaken on the site)

Step 1. Stop work, protect the area and inform HWC

- Cease work in the immediate/affected area
- The Project Manager or Site Supervisor will immediately notify the JH Project Environmental Manager and HWC. The Police to be notified if ordinance is suspected.
- JH Project Environmental Manager will inform the Site Auditor of the potential unexpected finds (if within the A horizon of undisturbed site soils).
- Delineate the area of potential contamination to prevent access by other workers and public, including maintaining a safe distance from the contaminated area. The JH Project Manager or Site Supervisor will be responsible for delineation of an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. The location of the 'no go zone' and any other necessary controls, will be confirmed with the Contaminated Land Consultant and the UXO specialist (and Police as applicable) if triggered.
- When safe to access the area, install environmental controls around the site to contain the contaminated material, which may include diversion of water to minimise potential spread via surface water runoff and/or covering the area. If the unexpected find is asbestos refer to Section 4.0 for additional measures to be implemented. If there are other signs of contamination continue to Step 2. The Environment Manager will report the unexpected find to HWC.

If determined to be UXO, the Police will manage the site in consultation with JH and HWC – once the item is removed JH will review UXO assumptions, procedures and protocols and recommence work as per step 5 below.

Step 2. Contact and engage Contaminated Land Consultant and complete initial assessment and recording of the find

- JH Project Environmental Manager will engage a suitably qualified and experienced Contaminated Land Consultant to identify the potential contaminant in the unexpected find and its potential impact to human health or environment
- Site access will be arranged for the Contaminated Land Consultant to inspect the finding as soon as practical
- The following details will be recorded upon the unexpected finds:
 - Location of the potential contamination
 - Visual appearance
 - Odour (if any)
 - Depth
 - Surrounding materials and works being undertaken at the time of discovering the material
- Should the Contaminated Land Consultant provide advice after the site inspection and initial assessment that no contamination constraint exists, such advice should be provided in writing and confirmed by the Project

Manager or Site Supervisor. The Project Manager will seek written clearance to resume project work from HWC Project Manager

- If it is determined that there is a risk of material harm (POEO Act 1997) from the potential contamination, notification to HWC will occur immediately, in order for HWC to report to external agencies immediately in accordance with Project Approval requirements
- In the event that contamination investigation, management or remediation activities are required a SWMS will be developed.

Step 3. Site Investigation and recommendations for management

- If further site investigation is required, the Contaminated Land Consultant will assess the situation and advise of the approach to be taken (in consultation with the Site Auditor if in the A horizon of undisturbed soils). The Site Auditor would independently review advice from the Contaminated Land Consultant to confirm its appropriateness prior to implementation.
- The Contaminated Land Consultant will provide recommendations on the appropriate management measures to be implemented. This may include leaving contamination undisturbed, capping of contamination, treatment or off-site disposal. Material to be disposed of off-site will be transferred to an appropriately licensed waste facility
- Where asbestos only has been found the licensed asbestos removalist will prepare an Asbestos Removal Control Plan prior to the removal of any asbestos and asbestos containing material in accordance with Section 4.0. The Asbestos Removal Control Plan will be reviewed by the Site Auditor, if in the A horizon of undisturbed soils
- If there is a requirement to notify the NSW EPA in accordance with the Duty to Report provisions under the CLM Act 1997, HWC will undertake the notification.
- If remediation or management of the contamination is required, the RAP will be updated or an addendum to the RAP prepared.

Step 4. Implement management strategy

- Implement agreed management strategy
- Relevant SWMS will be reviewed and updated when required
- JH, or the contaminated land consultant or licensed asbestos assessor (as relevant) will provide appropriate validation to demonstrate remediation has been effective. This will likely include preparation of a validation report/letter for any remediation undertaken.
- The CEMP will be reviewed and will be updated as appropriate with any changes resulting from the find. The updated CEMP will incorporate additional conditions arising from any further approvals, such as Planning Approval Modifications, and consultation if relevant. If an update to the CEMP is required, approval will be sought from the ER and DPHI, in consultation with relevant government agencies, as appropriate.
- Any changes to the CEMP will be included in site induction material. Site workers will be updated during toolbox talks.

Step 5. Recommence works

- Obtain concurrence from the Site Auditor in the form of an Auditor's Interim Advice, that the UFP has been appropriately addressed if in the A horizon of undisturbed soils
- The HWC Project Manager will grant approval for JH to recommence works upon reviewing the documentation provided
- If required, HWC will notify landowners (e.g. such as service providers) where contamination is identified on their land.

4. Additional measures for unexpected asbestos

4.1. Source removal and offsite disposal

Investigation techniques which may be used to remove asbestos containing material in soil are presented in Table 4-1.

Table 4-1 Asbestos Measures

Removal Technique	Applicability and Limitations
Hand Picking	• suitable for bonded asbestos containing material in near surface only (ie., 10cm) • raking may enhance removal, although only in sandy soils • not applicable for friable asbestos • less effective in areas of dense vegetation
Tilling	• mechanical tilling to turn over soil following hand picking • suitable for bonded ACM in soils to approx. 30 cm in sandy soils • not applicable for friable asbestos • less effective in areas of dense vegetation, or clayey soils
Mechanical screening	• suitable for large volumes of soil impacted with bonded asbestos containing material • susceptible to generate fibres requiring effective dust/fibre control • not applicable for friable asbestos
Mechanical excavation	• physical excavation of soil containing asbestos containing material where impact extends beneath surface soils • generates larger volume of soil that requires further management (i.e. off-site disposal, screening, spreading and handpicking/tilling)

The JH Project Environmental Manager (or delegate) will attend and monitor any asbestos / ACM removal works or remediation measures undertaken for treatment of asbestos / ACM on site. JH will provide appropriate validation to demonstrate removal of ACM using the above techniques has been successful.

4.2. Removal of asbestos / asbestos containing material

A licensed asbestos removalist will be required for removal works where there is friable asbestos, or the contaminated area is greater than 10 m². There are two types of asbestos removal licences: Class A and Class B. The type of licence required depends on the type and quantity of asbestos or asbestos containing material to be removed, as outlined in the Table 4-2.

Table 4-2 Licence types

Removal Technique	Applicability and Limitations
Class A	Can remove any amount or quantity or quality of asbestos or asbestos containing material, including: • any amount of friable asbestos or asbestos containing material • any amount of asbestos-contaminated dust or debris • any amount of non-friable asbestos or asbestos containing material
Class B	Can remove: • any amount of non-friable asbestos or asbestos containing material Note: A Class B licence is required for removal of more than 10m² of non-friable asbestos or asbestos containing material but the licence holder can also remove up to 10m² of non-friable asbestos or asbestos containing material. • asbestos-contaminated dust or debris associated with the removal of non-friable asbestos or asbestos containing material Note: A Class B licence is required for removal of asbestos contaminated dust or debris associated with the removal of more than 10m² of non-friable asbestos or asbestos containing material, but the licence holder can also remove asbestos-contaminated dust or debris associated with the removal of up to 10m² of non-friable asbestos or asbestos containing material.

Removal Technique	Applicability and Limitations
No licence required	Can remove: • up to 10m² of non-friable asbestos or asbestos containing material asbestos-contaminated dust or debris that is: ○ associated with the removal of less than 10m² of non-friable asbestos or asbestos containing material ○ not associated with the removal of friable or non-friable asbestos and is only a minor contamination.

The licensed asbestos removalist will prepare an Asbestos Removal Control Plan prior to the removal of any asbestos and asbestos containing material. The Asbestos Removal Control Plan documents the specific control measures to be implemented to ensure site personnel and others are not at risk when asbestos removal work is being conducted. It includes how the asbestos removal will be carried out, including the method, tools, equipment and PPE to be used and the asbestos and asbestos containing material to be removed, including the location, type and condition of the asbestos and asbestos containing material.

The HWC Project Manager will be informed prior to excavation or removal of asbestos or asbestos containing material. If the removal activity is to occur in the vicinity of any occupied residence or business, JH's Community Liaison Officer will notify the affected resident/s or business owner/s.

5. Records

JH will maintain a register of any unexpected contamination finds, including a map of all contaminated and/or remediated sites. The register and disposal records will be made available to HWC and Site Auditor on request.

Where any material identified as contaminated is to be disposed off-site, the disposal location and results of testing will be provided to HWC for submission to the Planning Secretary prior to its removal from the site. A waste classification will be provided for the material to be disposed offsite, in accordance with the NSW EPA (2014) Waste Classification Guidelines.

The recommendations of any Remedial Action Plan and the unexpected contamination procedure must be updated following results of further site investigations and implemented throughout duration of project work.

Appendix A Toolbox example

JOHN
HOLLAND

UNEXPECTED FINDS

Behind the Dunny Door Series

WHAT IS IT

An unexpected find is the discovery of any previously unidentified or otherwise unforeseen item during planning, such as contamination or archaeological finds (Aboriginal and non-Aboriginal), whilst completing activities.

WHY ARE THEY IMPORTANT

Harmful to your health or others

Harmful to the environment

Culturally significant

A potential crime scene

Regulated / Legally Protected

IF YOU MAKE AN UNEXPECTED FIND

STOP
WORK

Don't touch or move it

Alert supervisor and the Environmental / Safety Team

Refrain from work until instructed by team

Implement suitable risk controls to delineate find

IF YOU BELIEVE YOU HAVE MADE AN UNEXPECTED FIND, PLEASE TELL YOUR SUPERVISOR/LEADING HAND IMMEDIATELY

IMPORTANT FINDS

Discoloured / stained / odorous soil

Discoloured Water / Oil Sheens

Buried waste (rubbish, metal, plastics, geofab or drums)

Unidentified services or markers

Unexpected infrastructure or tanks

Munitions / Unexploded Ordnance (UXO)

Asbestos or asbestos containing materials (ACM)

Bones / Fossils

Buried Artefacts

Tools or chips from making Typically non-local stone

Axe Grinding Grooves

Middens (Indicators of previous occupation of area)