Contaminated Land Management Sub-Plan

Cross River Rail – Rail, Integration and Systems Alliance

Project number:	Q01080
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Revision number:	04

Document Approval

Rev	Date	Prepared By	Reviewed By	Approved By	Remarks
A	28/06/19	UNITY – Environment Manager	UNITY – Delivery Manager		IFR
B	11/10/19	UNITY – Environment Manager	UNITY – Delivery Manager		IFR
C	26/11/19	UNITY – Environment Manager	UNITY – Delivery Manager		IFR
00	24/01/20	UNITY – Environment Manager	UNITY – Delivery Manager	UNITY – Environment Manager	IFU
01	26/07/20	UNITY – Environment Manager	UNITY – Delivery Manager		IFR
02	07/09/20			UNITY – Environment Manager	IFU
03	26/08/21	UNITY – Senior Environmental Representative	UNITY – Environment Manager		IFR
04	07/10/21			UNITY – Environment Manager	IFU
Signature:				[redacted]	

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Plan Control

This Contaminated Land Management Sub-Plan (the plan) has been developed for the Cross River Rail – Rail, Integration and Systems Project.

Approvals, Revisions and Amendments

Plan approval is in accordance with Section 4.1.2 of the Construction Environmental Management Plan (C-EMP).

Plan reviews and updates is in accordance with Section 7 and Section 8.1 of the C-EMP.

Revision Details

Revision	Remarks
A	Final C-EMP for Review and endorsement by the Environmental Monitor
B	Updated to address review comments from the Environmental Monitor dated 30 September 2019
C	Updated to address review comments from the Environmental Monitor dated 4 November 2019
00	Plan updated to include Hold Point process for unrestricted endorsement
01	6 monthly review and updated to incorporate changes linked to RfPC-7 and Updated O-EMP The update does not include new or additional Relevant Project Works
02	Issued for Use
03	Issued for review to the IEM 6 monthly review No updates required because of: • RfPC-11, and The addition of the Southern Area Scope of Works (Dutton Park and Buranda)
04	Issued for Use

1 Purpose of this Plan

This sub-plan has been prepared to comply with:

- Coordinator-General's Conditions of Approval – Appendix 1 – Part C:
  - Conditions 15 (a) and (b)
  - Conditions 16 (a), 16(b) and 16(c)

  as they relate to water management and quality of potentially contaminated surface and groundwater
- Final Outline-Environment Management Plan (O-EMP) – Outline Contaminated Land Management Plan.

Component	Details
Environmental Outcome(s)	• Ensure that contaminated land is managed and removed to approved disposal sites in accordance with the provisions of the *Environmental Protection Act 1994* (EP Act) • Discharge of surface water and groundwater from project works must comply with the relevant water quality objectives established for the project • During construction, monitor and report on water quality in accordance with the Water Quality Management Plan, a sub-plan of the C-EMP • Prior to commencement of project works involving excavation, predictive modelling of the potential for groundwater drawdown must be undertaken. The predictive modelling must be based on validated monitoring data and must address the likely extent of any drawdown over time, up to the time when such movement reaches equilibrium • Project works must be designed, planned and implemented to avoid, where practicable, and otherwise minimise the inflow of groundwater to the project works, including excavations, the underground stations and tunnels, having regard for the predictive modelling • UNITY must monitor the inflow of groundwater to the project works and compare monitoring data with predictive modelling. If the rate of groundwater inflow exceeds 1L/sec in any worksite, the Alliance must revise work methods and devise and implement mitigation measures as soon as practical • Construction activities should avoid or minimise the environmental and public health risks from contaminated soil, groundwater or soil gas intercepted during construction works.
Relevant Area	Site wide as most of the works are located within the Queensland Rail corridor which is listed on the EMR. Key areas include: • Mayne Yard due to known ground and groundwater contamination • Salisbury (former landfills) • Yeerongpilly (foundry operations) • Clapham Yard (railyards operations)
Relevant Works / Activities	• Subsurface disturbance works resulting in the removal of spoil material in known or suspected areas of contamination, such as excavations, piling, trenching, ground surface treatment works. • Offsite disposal of spoil • Beneficial reuse of material within the work areas • Dewatering works (especially groundwater or trapped surface water in open excavations) required in known or suspected areas of PASS / AASS material.
Performance Criteria	• Works are conducted in accordance with – the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (the NEPM) (National Environment Protection Council 2013), and – PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020'. – the Queensland Auditor Handbook for Contaminated Land 2018; and – the Queensland Guideline for Contaminated Land Professionals (DEHP, 2012), and

Component	Details
	– Works are conducted in accordance with requirements of the EP Act and subordinate legislation • Site investigations for contaminated sites inform detailed design and are completed prior to the commencement of works • Construction activities involving disturbance of contaminated land do not cause contamination of previously uncontaminated sites or adjoining land • Handling of asbestos occurs in accordance with the EP Act and the *Work Health and Safety Regulation 2011*, and relevant Queensland codes of practice • Storage, handling and transport of hazardous materials does not cause contamination of land or waters or if contamination does occur, remediation of the contaminated land or waters occurs in accordance with the relevant legislation, standards and procedures • Runoff and discharges from worksites are consistent with the project environmental objectives established in accordance with Imposed Condition 18, *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* and *Qld Water Quality Guidelines* and do not negatively affect the background conditions of the receiving waters.
Sustainability	Lan-1, Lan-3 and Dis-1
Mitigation Measure	• Upon completion of the site investigation, results are used to inform the management measures such as: – prescribing management of soils and waters, treatment methods and monitoring requirements to supplement this CLMP which are to be detailed in the SEPs – additional considerations such as groundwater risks and contamination types that may lead to soil gas risk (e.g. volatiles / putrescibles) to be incorporated into and safety risk assessments and Work Packs – avoidance of disturbance of contamination areas wherever possible through design and construction planning. • A supplementary Contaminated Land Management Plan (CLMP or equivalent) is developed that includes part or all the following information: – summary of land characterisation (based on more detailed technical reports) – management options of the material (e.g. unrestricted use, restricted re-use, offsite disposal) – requirements for testing stormwater runoff / groundwater above and beyond the standard suite – Consideration for additional soil testing • During development of Workpacks and SEPs, the relevant management measures from the supplementary CLMP (or equivalent) are incorporated in the SEPs and Workpacks • Prior to the Relevant Project Works commencing a supplementary CLMP (or equivalent) prepared by a Suitably Qualified Person is provided to the Environmental Monitor with sufficient notice to demonstrate compliance with Conditions 4c(ii). • The Relevant Project Works are not be authorised to commence until the detail required under Condition 4c(ii) has been provided. • Should areas of unidentified contamination be identified through construction activities, the Supervisor will immediately notify the Environmental Manager to assist in further investigation, and to prescribe interim control measures until actual risks are quantified. • Where Site Management Plans (SMP) exist over a parcel of land, comply with the requirements of the SMP • If required based on the findings of the investigations, additional SMP(s) will: – be developed by a Suitably Qualified Person (SQP); – include any required Remediation Plans if triggered; – be certified by a Contaminated Land Auditor; and – be approved by DES. • Soil Disposal Permits are obtained for contaminated soils generated from lots listed on the Environmental Management Register (EMR) or Contaminated Land Register (CLR) and required to be removed from their lot of origin for treatment or disposal to ensure: – appropriate and lawful management of such soils and – avoidance o contamination of previously uncontaminated sites / adjoining lands

Component	Details
	• Suitably licensed contractors are used for the lawful transport of contaminated soils and waters • Suitably licensed disposal facilities are used for disposal of contaminated soils and waters • Contaminated materials disposed of offsite are tracked • Disturbance of contaminated areas that may expose workers and the public to risks is managed in accordance with requirements of the relevant legislation • Contaminated soils are segregated from other non-contaminated materials and temporarily stored in such a manner that accidental impact to the receiving environment and adjoining lands is practicably and reasonably mitigated. Controls implemented may include: – Signage of designated temporary stockpiling locations – Storing within designated receptacles where only dealing with minor quantities – Bunding or covering stockpiles where there is risk of impacts to surface water – Tracking process for materials that are deemed suitable for re-use in site filling activities. • Storage, handling and transport of other hazardous materials is to be in accordance with the Waste Management Plan and the Workplace Health and Safety Management Plan (WHSMP) (refer to Section 2 below) • Management of asbestos or asbestos-containing materials are managed in accordance with the relevant WHS legislation and the WHSMP (refer to Section 2 below), particularly during demolition activities • Storage of hazardous substances will be in accordance with the relevant Australian Standards (e.g. AS1940, AS3833) to mitigate the risk of contamination to land and waters. • Should a contamination event occur (e.g. loss of containment), the Environment Manager will be immediately notified. Where the event response requires remediation actions more significant than standard spill response measures, the contaminated land SQP will be engaged to advise on clean up and disposal requirements. • Implement relevant control measures to divert any surface runoff away from the contaminated land, and capture and treat any surface runoff contaminated by exposure to the contaminated land • Trapped waters proposed to be released to the receiving environment are: – Tested prior to release to ensure waters comply with parameters included in the Water Quality and Waterways Management Plan, relevant supplementary Contaminated Land and acid sulfate soils Management Plans – Released under an internal Permit to Dewater approved by the Environmental Team. • In the event of a loss of containment, the incident response, associated investigation (which may include sampling) and associated remedial activities will be managed under the incident management process detailed in the C-EMP
Monitoring	Monitoring is undertaken in accordance with the Construction Monitoring Program (Attachment 4 of the C-EMP). Where additional monitoring is triggered based on the supplementary ASSMP or CLMP (or equivalent) the details of the monitoring will be included in the relevant Workpacks and SEPs
Reporting	Reporting is undertaken in accordance with Section 8.2 of the C-EMP.
Corrective Action	Management of corrective actions will be as per Section 6 of the C-EMP.
Auditing	As per Section 7 of the C-EMP.

2 Other Considerations

2.1 Asbestos Management

The WHSMP addresses the requirements of asbestos management insofar as it relates to human health and workplace health and safety. It covers:

- Key risks associated with asbestos:
  - The actual presence of asbestos is not identified
  - Asbestos is inhaled
  - Asbestos is not properly contained
- Associated mitigations/controls:
  - The requirement for all personnel to come into contact with asbestos has been eliminated wherever possible
  - All asbestos in the workplace has been identified, recorded, risk-assessed and exposure controlled in accordance with applicable laws
  - Personnel performing asbestos-related work or asbestos removal will be trained and licensed in accordance with legislation
  - Equipment selected for asbestos-related work will be suitable
  - In the event that asbestos is identified unexpectedly:
    - All disturbance work will cease
    - Workers will be instructed not to move or handle suspected asbestos containing material
    - A 10m exclusion zone must be established with barricading and signage
    - The Delivery Manager and the WHS Manager must be notified to arrange a competent person to take samples
    - The competent person (occupational hygienist or holder of an asbestos assessor licence) must provide a written report that includes certified test reports from a NATA accredited laboratory
  - If asbestos is identified, an Asbestos Management Plan is to be developed and include:
    - The identification of asbestos and the location of signs and labels
    - The decisions and justification for the decisions about the management, removal, safe work practices and decontamination for asbestos removal work
    - Inspection schedules
    - The nomination of the workers who will undertake the asbestos removal works
    - How asbestos risks will be managed
    - The program or timeline for the works to be undertaken
    - The identification of each person's responsibilities
    - Health monitoring/surveillance requirements.
  - In the event of asbestos removal, the asbestos-removal contractor will prepare an Asbestos Removal Control Plan that identifies the specific control measures the contractor will use to ensure workers and other persons are not exposed to risks during asbestos removal work. The Licensed Asbestos Removal Contractor must notify the WHS regulatory authority in writing at least five days prior to licensed asbestos removal work (Class A or B works) being undertaken. An exclusion zone must be established for all licensed asbestos removal works, including physical barricades and signage to prevent unauthorised entry. When carrying out licensed asbestos removal work,

decontamination facilities must be provided for any plant used in that area and workers carrying out the asbestos removal work. Air monitoring must be undertaken in accordance with the Manage Asbestos Procedure. On completion of any asbestos removal works and prior to any other works or workers gaining access to the nominated area, a qualified occupational hygienist (and licensed asbestos assessor where required by the Regulator) must issue a Clearance Certificate. Potential asbestos containing material must be tested in a NATA accredited laboratory to determine type and concentration of asbestos and disposed of at a licensed landfill facility.

2.2 Hazardous Substances Management

The WHSMP addresses the requirements of hazardous substances management insofar as it relates to human health and workplace health and safety. It covers:

- Key risks associated with hazardous substances, which include:
  - A hazardous substance comes into contact with a person's skin or eyes
  - A harmful substance is consumed or accumulates
  - Fumes are inhaled
  - A hazardous substance combusts in an uncontrolled environment
  - A harmful substance leaches into the local environment
- Associated mitigations/controls:
  - Hazardous Chemicals Procedure, which:
    - Provides a framework for the management of hazardous substances to minimise any risk to personnel or the environment and to ensure compliance with legislative requirements
    - Details the process to identify hazards and ensure the risk is managed as low as reasonably practicable
    - Covers the approval, use, labelling, transport, storage, handling and disposal of hazardous chemicals used or intended for use on the project
    - Requires that:
      - The risks associated with the use of any chemical will be documented in the SWMS using the Safety Data Sheet (SDS), including any specific personal protective equipment requirements
      - SDSs are available to workers using the chemical
      - Chemicals are stored in accordance with the SDS and Australian Standards; incompatible hazardous chemicals will not be stored together
      - Spills and chemical disposal are managed in accordance with the C-EMP
  - Maintenance of a Chemalert subscription and project-specific hazardous chemical register.

2.3 UXO Management

Unexploded ordnance (UXO) is ammunition such as artillery shells, mortar bombs and grenades that did not explode when used. UXO is a potential safety risk because it may detonate if disturbed. It may also release chemicals that pose a risk to human health and the environment.

In Queensland, most UXO is found on land formerly used by Australian and Allied Defence Forces for the live firing of explosive ordnance, particularly during World War II.

While explosive ordnance that has been found on land used for the temporary storage and disposal of ammunition has not normally been fired, it is also treated the same as UXO.

Unity has undertaken a review of the Commonwealth's Department of Defence website which lists all land in Queensland that has been identified and assessed as having been used by the military in a way that may result in residual UXO on the land.

The search did not identify any land parcel within the Alliance Footprint mapped on the Department of Defence database. Excerpt of the search are presented below.

In the unlikely event that an UXO or a suspicious item is uncovered during the works the following action plan will be implemented:

- If a suspect UXO item is found - **DO NOT TOUCH**, disturb or tamper with the item in any way. This includes making any attempt to move the item to a 'safe' location.
- Carefully note the appearance of the item and the location. Take a photograph if it is possible to do so without further approaching or disturbing the item.
- If possible, mark the location so that it can be found later. Coloured tape or paint make easily recognised marker material. Note the route to the item.
- Inform the property owner, environmental team, site foreman or supervisor of the find.
- Inform the Police that a possible ammunition item has been found. They will instigate a request for Defence personnel to attend and dispose of the item.

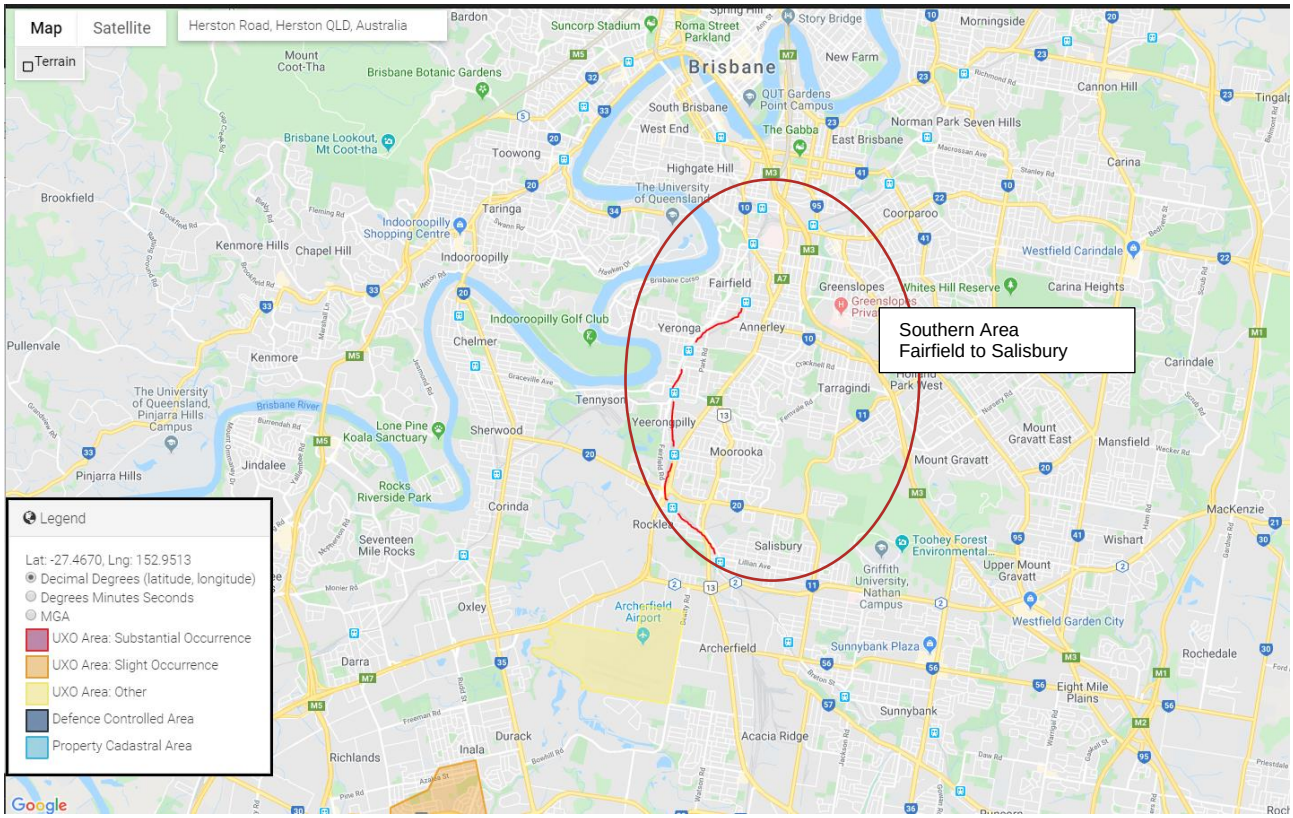

Figure 1: Southern Area and F2S - Department of Defence UXO Database Search Results

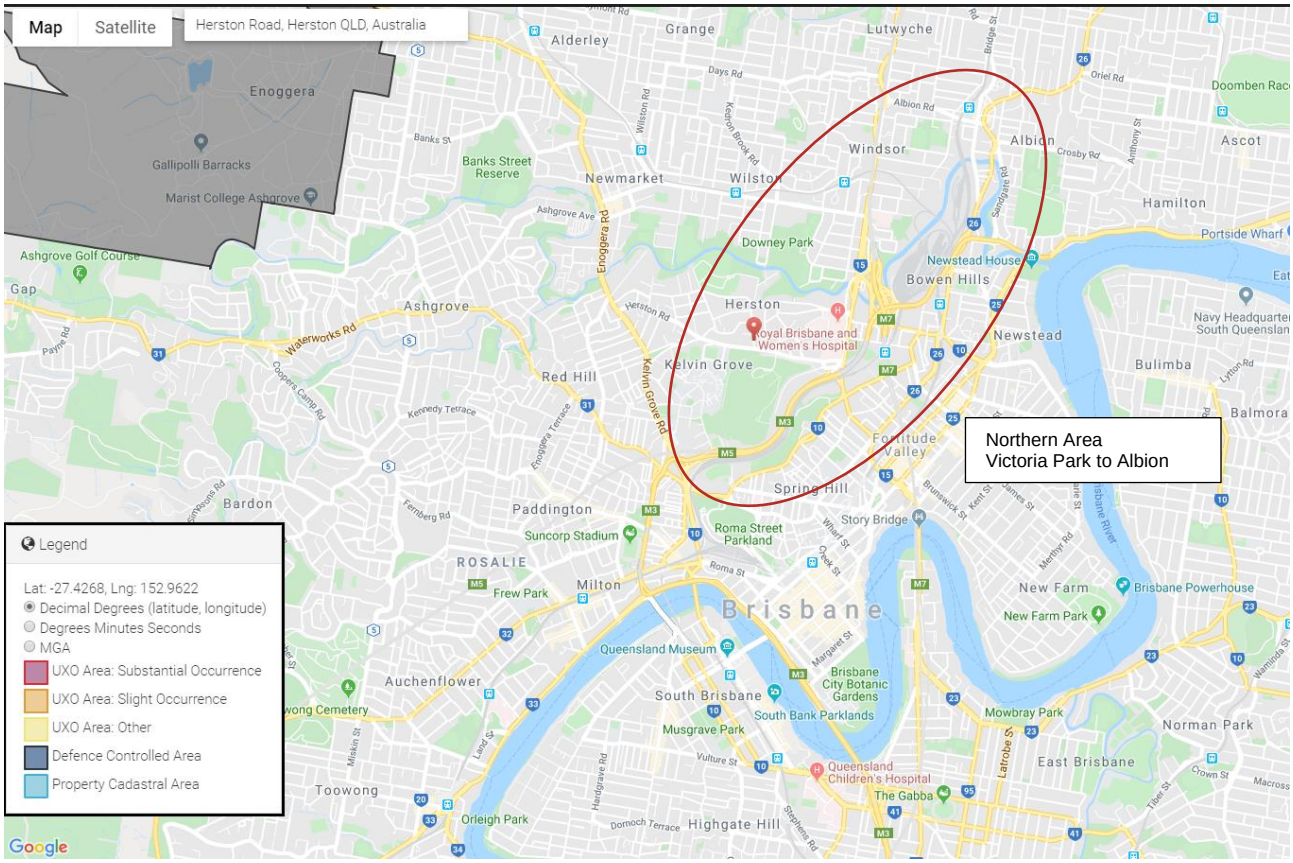

Figure 2: Northern - Department of Defence UXO Database Search Results (accessed 27 October 2019)