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Remediation Action Plan

237 Wharf Road Newcastle

For and on behalf of JM Environments

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EXECUTIVE SUMMARY

This report presents a Remediation Action Plan (RAP) commissioned by EJE Architecture on behalf of Tamba Pty Ltd (the client) and undertaken by JM Environments (JME) for 237 Wharf Road, Newcastle NSW (the site). The site is identified as Lot 1 DP747803 and Lot 102 DP736173. The site is approximately 2,639m2 in area. The site location is shown in Figure 1.

It is proposed to demolish the existing building and build a multistorey residential building with basement carparking.

A preliminary contamination assessment (PCA) and detailed contamination assessment (DCA) were undertaken by JME. The PCA found the site was part of a coal loading wharf from at least 1831 until after 1911. From around 1912 the site was used for refrigeration machinery manufacture and cold storage. The building on site used for this purpose remained on site until around 1986. The DCA found that no bonded asbestos was identified during fieldwork. However, asbestos fines/friable asbestos were detected in two soil samples at two locations. The asbestos fines/friable asbestos (AF/FA), together with railway ballast, was possibly associated with the former coal loading trains' brake pads. The AF/FA poses a significant risk to construction workers and future maintenance workers.

JME recommends excavation and offsite disposal of contaminated soils. Specifically, the remedial strategy will comprise:

- The presence of an appropriately qualified and RAP-inducted remediation manager to oversee the remediation strategy, and to ensure that records are kept for future validation of the remediation;
- Removal of current building and hardstands;
- Excavation and stockpiling of impacted soils;
- Waste classifications and offsite disposal of impacted soils;
- Validation that the impacted soil has been removed from the excavation and
- Importation of 'clean' soil if necessary.

In order to validate the remediation excavation, sampling will be undertaken and a Validation Report will be produced which will:

- Be prepared in accordance with the NSW Environment Protection Authority (2020) Guidelines for Consultants reporting on contaminated land;
- Be written to comply with industry standards and relevant guidelines;
- Summarise results of the remediation and final validation of the site;
- Include records of material exported from or imported onto site;
- Include a photographic record of the remediation; and
- Provide a statement as to the suitability of the site for its proposed future land use.

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ACRONYMS

AEC	Area of Environmental Concern
AHD	Australian Height Datum
ASS	acid sulfate soils
COC	Contaminant of Concern
CSM	Conceptual Site Model
DP	Deposited Plan
DQI	Data Quality Indicator
EPA	Environment Protection Authority
ha	hectares
HSE	health, safety and the environment
JME	JM Environments
LEP	Local Environmental Plan
mbgl	metres below ground level
MCC	Maitland City Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
PPE	personal protective equipment
QA/QC	Quality Assurance/Quality Control
SAQP	Sampling and Analysis Quality Plan
SGRR	Signature Gardens Retirement Resorts
SWMS	Safe Work Method Statement

1 INTRODUCTION

This report presents a Remediation Action Plan (RAP) commissioned by EJE Architecture on behalf of Tamba Pty Ltd (the client) and undertaken by JM Environments (JME) for 237 Wharf Road, Newcastle NSW (the site). The site is identified as Lot 1 DP747803 and Lot 102 DP736173. The site is approximately 2,639m^2 in area. The site location is shown in Figure 1.

It is proposed to demolish the existing building and build a multistorey residential building with basement carparking. The purpose of the PCA is to respond to Newcastle City Council's request for further information with respect to the development application for the proposal.

A preliminary contamination assessment (PCA) and detailed contamination assessment (DCA) were undertaken by JME. The PCA found the site was part of a coal loading wharf from at least 1831 until after 1911. From around 1912 the site was used for refrigeration machinery manufacture and cold storage. The building on site used for this purpose remained on site until around 1986. The DCA found that no bonded asbestos was identified during fieldwork. However, asbestos fines/friable asbestos were detected in two soil samples at two locations. The asbestos fines/friable asbestos (AF/FA), together with railway ballast, was possibly associated with the former coal loading trains' brake pads. The AF/FA poses a significant risk to construction workers and future maintenance workers.

Based on the information presented above JME considered that the site could be made suitable for the proposed use with the implementation of a remediation action plan.

1.1 Objectives

The objectives of remediation, where contamination poses unacceptable risks to human health or the environment, are to render the site suitable for its proposed use, and to ensure that the environment is protected from contamination.

The objectives of the RAP are to:

- Identify areas of environmental concern (AECs) within the site that require remediation for contaminants of concern (COCs) associated with former land uses;
- Select a technically appropriate methodology that addresses the financial, timing and logistical constraints of the client;
- Outline procedures for the preferred remediation method; and
- Outline procedures for validation, site control and workplace health and safety (WHS), as required.

1.2 Scope of Works

In order to achieve the objectives of the RAP, the following works were completed:

- Review and summary of JME24064-2 Preliminary Contamination Assessment 237 Wharf Road Newcastle and JME24064-4 Preliminary Contamination Assessment 237 Wharf Road Newcastle;
- Summary of available suitable remediation technologies;
- Development of a suitable remediation strategy for the site;
- Development of remediation validation methodology, criteria and outcomes;
- Establishment of WHS measures to be undertaken during remedial works to protect the health and safety of the general public and the environment; and
- Preparation of a RAP (this document) for the proposed redevelopment.

2 SITE IDENTIFICATION

General site information is provided in Table 1. The site location is shown in Figure 1.

TABLE 1: SUMMARY OF SITE DETAILS

Site Address:	237 Wharf Road Newcastle NSW
Site Area:	Approximately 2,639m^2
Site Identification	1 DP747803 and Lot 102 DP736173. Local Government Area of Newcastle Parish of Newcastle County of Northumberland
Current Land Use:	Commercial office building
Previous Land Use:	Railway corridor, coal loader, refrigeration manufcturer
Proposed Land Use:	Multi storey residential
Adjoining Site Uses:	Commercial offices to the west Open space and Newcastle Harbour to the north Car park to the east Former rail corridor to the south
Site Corners (approximate)	32°55'32.60"S, 151°46'38.79"E 32°55'32.61"S, 151°46'39.27"E 32°55'32.95"S, 151°46'41.73"E 32°55'33.85"S, 151°46'41.49"E 32°55'33.99"S, 151°46'38.78"E
Site Coordinates (GDA2020 MGA56)	385730 mE, 6356264 mN (centre of site)
Current Zoning:	Zone MU1 Mixed Use
Current Owners	Tamba Pty Ltd
Local Government Authority	City Of Newcastle

3 PREVIOUS CONTAMINATION ASSESSMENTS

3.1 Preliminary Contamination Assessment

JME undertook the Preliminary Contamination Assessment for the site, *JME24064-2 Preliminary Contamination Assessment 237 Wharf Road Newcastle,* dated 24 October 2024.

The scope of work was:

- Review of published information related to soils, acid sulfate soils, geology and hydrogeology;
- Review of previous site ownership (land titles search);
- Review of Councils records for the site;
- Review of historical aerial photography over the past 50 to 60 years;
- Review of the site's Section 10.7 certificate (Lot 231 DP791815);
- Search of SafeWork NSW dangerous goods storage database;
- Review of NSW EPA notices under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997;
- Search of WaterNSW groundwater database for records of nearby registered groundwater bores;

- Review and collation of the above information and identification of potential AECs and COCs;
- Site walkover; and
- Prepare the PCA

The PCA reported that the site lies on the Newcastle foreshore and was likely been used for commercial/industrial purposes for more than 200 hundred years. Given the proximity to the Harbour, it was possible the site was filled to stabilise the bank and provide depth for coal ships to be loaded.

It appeared that the site was part of a coal loading wharf from at least 1831 until after 1911. From around 1912 the site was used for refrigeration machinery manufacture and cold storage. The building on site used for this purpose remained until around 1986.

The PCA considered that the site had a medium to risk of contamination. Sampling and analysis of soils was recommended to assess the site's suitability for future residential land use.

3.2 Detailed Contamination Assessment

JME undertook the Preliminary Contamination Assessment for the site, *JME24064-4 Preliminary Contamination Assessment 237 Wharf Road Newcastle*, dated 6 February 2025.

The scope of work for the DCA was:

- Review of published information related to soils, acid sulfate soils, geology and hydrogeology;
- Preparation of a Sampling and Analysis Quality Plan (SAQP);
- Fieldwork including the collection soil samples;
- Laboratory analysis of selected samples; and
- Preparation of the DCA.

Nine sampling locations were selected to provide site coverage and satisfied the NSW EPA sampling design guidelines. Four boreholes were terminated in natural alluvium SAND at around 0.5m below the concrete in the underground carpark. The fill in the underground carpark appeared to contain increasing amounts of building material rubble, moving east to west. The spoil from BH9 included ash, coal, railway ballast and other materials. Although no bonded asbestos was identified during fieldwork, asbestos fines/friable asbestos were detected in two soil samples. The asbestos fines/friable asbestos (AF/FA), together with the railway ballast, was possibly associated with the former coal loading trains' brake pads. The AF/FA poses a significant risk to construction workers and future maintenance workers.

Elevated levels of copper were present in four locations which were below the concrete of the underground carpark and are planned to be below the proposed development. As such, the ecological guidelines were not relevant. Thus, copper was not considered to be a significant risk to the environment.

Based on the information presented in this report, JME considered that the site was not suitable for the proposed development from a contamination point of view due to the presence of AF/FA in soil.

4 CONCEPTUAL SITE MODEL

A CSM was prepared, with reference to the Consultants' Guidelines, to identify potential contaminant sources and contaminants of concern (COCs), contaminant release mechanisms,

exposure pathways and potential receptors. The CSM is summarised in Table 3 (below) and illustrated in Plate 1.

4.1 Site Condition

The site was located in Newcastle. It is developed with approximately 15% of the site is accessible soils. AF/FA asbestos was located at two locations beneath the existing concrete carpark which will be disturbed during the construction of the proposal.

The nearest sensitive environmental receptor is thew Hunter River, approximately 40m north of the site. The nearest human health sensitive receptors ae the current site users. The contamination status of the site soils is unknown.

4.2 Source Zone Characteristics

4.2.1 Primary Contaminant Sources

The primary sources of potential contamination were:

- Fill from unknown origins beneath the site building.
- Site use as a railway and coal loader.

4.2.2 Identified Contaminants of Concern

The primary Contaminants of Concern (COC) on the site are considered to be a broad range of contaminants due to the unknown origins of the fill together with the railway and manufacturing land use. The COC was AF/FA Asbestos;

4.2.3 Areas of Environmental Concern

The primary Area of Environmental Concern (AEC) was located around BH7 and BH8 as shown in Figure 2.

4.3 Contaminant Transport Mechanisms

The existing building prevents access to the impacted soils. Following demolition of the building and removal of the basement carpark concrete slab, AF/FA asbestos can be mobilised by the wind or become imbedded in clothing causing a risk to the worker and others they come it contact with whilst wearing site clothing.

4.4 Contaminant Exposure Pathways

For contaminated soil to pose a risk to a receptor, a complete exposure pathway must exist between the source of the impact and the receptor. A complete exposure pathway consists of the following elements:

- A source and mechanism for release;
- A storage and/or transport medium (e.g. contaminants stored in fine soil types and transported into the atmosphere as dust);
- An exposure point, where the receptor comes in contact with the contamination; and
- An exposure route (e.g. inhalation).

4.5 Potential Exposure Pathways and Potential Receptors at Risk

- Demolition, construction, future sub surface maintenance workers and those who come into the close vicinity of dirty site clothing have an inhalation of asbestos fibres risk ;

5 REMEDIATION OPTIONS

5.1 Remedial Objective

The objectives of remediation, where contamination poses unacceptable risks to human health or the environment, are to render the site suitable for its proposed use, and to ensure that the environment is protected.

The objective of the RAP is to determine the most technically appropriate management or remediation strategy that addresses the financial, timing and logistical constraints of the client.

5.2 Extent of Remediation Required

Based on results of assessments as described in Sections 3 and 4, it is considered that the lateral extent of remediation required is shown in Figure 2. The lateral extent is an estimation at this stage and can be better visually assessed when the concrete slab is removed. The depth of remediation is the depth of the fill which was generally less than 0.5m.

AF/FA asbestos contamination has been detected in fill in this area.

Groundwater-specific remediation was not considered necessary for the site.

5.3 Soil Remediation Hierarchy

The NEPM provides a preferred hierarchy of options for site clean-up and/or management, which is outlined as follows:

- On-site treatment of contamination so that it is destroyed, or the associated risk is reduced to an acceptable level; and
- Off-site treatment of excavated soil, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to the site; or

If the above are not practical:

- Consolidation and isolation of the soil on site by containment with a properly designed barrier; and
- Removal of contaminated material to an approved site or facility followed, where necessary, by replacement with appropriate material; or
- Where assessment indicates remediation would have no net environmental benefit, or would have a net adverse environmental effect:
    - Implementation of an appropriate management strategy.

5.4 Review of Soil Remediation Options

JME has not considered a 'do nothing' strategy because of the proposal to develop the site.

5.4.1 Treatment of Contamination

(On-site or off site) treatment of contaminated material was deemed not to be a practically feasible option, from a financial point of view, to destroy asbestos contamination on the site.

5.4.2 Isolation and Containment

On-site capping is used to isolate areas in the subsurface from the surrounding uncontaminated environment. A physical barrier such as a layer of clean soil, synthetic material liners, asphalt, and/or concrete layers may be installed to cap the contaminated material.

Where there is potential for contaminants within the soil to leach to groundwater as a result of surface water infiltration, the cap should be constructed in a manner which reduces the infiltration of surface water while providing a physical barrier between contaminated soils and the surface of the site.

The potential exposure pathway between human and ecological populations and contaminated fill material would be removed.

A Long Term Environmental Management Plan (LTEMP) is required with any capping strategy. The LTEMP:

- Identifies the party responsible for adhering to the plan;
- Includes commitments for ongoing monitoring and maintenance of the cap; and
- Controls future excavations, which must be minimised, or if required, must be subject to appropriate environmental controls which are to be adopted before work is carried out.
- Thus, there would be an ongoing legacy of commitment to manage the contamination.

This option is considered technically feasible on the site. However, the AF/FA is likely to be excavated during the construction process, exposing construction workers to asbestos fibres and it is planned to lower the site surface.

5.4.3 Excavation and Off-Site Disposal

This method involves the excavation of the area(s) of contaminated material identified as requiring remediation, and disposal of the material off-site to an appropriately licensed landfill.

Following the off-site disposal of contaminated soil, appropriately assessed and validated material may need to be imported to the site in order to achieve required design levels.

This option is considered technically and financially feasible for the site, and there is no ongoing legacy of commitment to manage the contamination.

6 RECOMMENDED REMEDIAL ACTION PLAN

JME recommends excavation and offsite disposal of contaminated soils. Specifically, the remedial strategy will comprise:

- The presence of an appropriately qualified and RAP-inducted remediation manager to oversee the remediation strategy, and to ensure that records are kept for future validation of the remediation;
- Removal of current building and hardstands;
- Excavation and stockpiling of impacted soils;
- Waste classifications and offsite disposal of impacted soils;
- Validation that the impacted soil has been removed from the excavation and
- Importation of 'clean' soil if necessary.

These steps are expanded upon below.

6.1 Rationale

This remediation strategy has been chosen for the following reasons:

(On-site or off-site) treatment of contaminated material was not deemed to be a technically feasible option to destroy heavy metal contamination on the site;

Cap and contain was considered to be a suitable strategy for apartment development. Newcastle City Council require a contaminated land auditor be appointed to audit the cap and contain remediations which adds additional consultancy fees and time. The area requiring remediation and the volume of soil requiring offsite disposal is relatively small and it is planned to lower the sites surface for a basement car park.

6.2 Excavation of Impacted Material

Civil remediation works mut be undertaken by a Class A Asbestos Removalists contractor.

After the hard stand has been removed, the impacted soils will be excavated to the base of fill. The excavated material will be stockpiled on 200µm thick plastic. The stockpile will be shaped and compacted using an excavator. The stockpile and excavation will be made moist. A sediment fence will be placed around the stockpile. The stockpile will be covered with weighted down 200µm thick plastic.

6.3 Waste Disposal

The stockpile will be waste classified according to the NSW Environment Protection Authority (2014) Waste Classification Guidelines Part 1: Classifying Waste, and disposed of off-site at a suitably licensed landfill facility (or facilities). The receiving landfill may require the soil to be double wrapped in 200µm thick plastic.

6.4 Importation of Soil

If required, the excavation will be backfilled with imported material. Imported soil material must satisfy:

- The NSW EPA ENM exemption/order; or
- The definition of virgin excavated natural material (VENM) as per the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste; or
- A current appropriate specific or general NSW EPA exemption/order for other material; or
- The requirements of Australian Standard AS4419-2003-Soils for Landscaping and Garden Use (in outdoor landscaped areas only).

Imported material must be classified at the point of origin, and be delivered to site directly from the point of origin. A copy of the classification letter must be reviewed and approved by an appropriately qualified and RAP-inducted project manager prior to delivery of the material.

7 VALIDATION OF REMEDIATION

7.1 Validation of Remediation Excavations

In order to validate the remediation excavation, sampling will be undertaken according to the following protocols:

- The excavation will be visually assessed to confirm that potentially contaminated soil has been removed to the extent practical. The visual assessment will be based on the removal of railway ballast;

- Validation soil samples will be taken at a ratio of 1 sample per 64m^2. Where applicable, soil samples will be collected from the batter of the excavation at a rate of 1 sample per 10 lineal metres;
- Samples will be collected using hand tools or an excavator.
- A clean pair of disposable gloves will be worn when collecting each sample; and
- Samples will be sent to the laboratory under chain of custody conditions.

The excavation will be considered remediated if validation analytical results for:

- AF/FA are less than 0.001%w/w; and
- There is no visible asbestos on the site surface;

Upon completion of the remedial works, a Validation Report will be produced which will:

- Be prepared in accordance with the NSW Environment Protection Authority (2020) Guidelines for Consultants reporting on contaminated land;
- Be written to comply with industry standards and relevant guidelines;
- Summarise results of the remediation and final validation of the site;
- Include records of material exported from or imported onto site;
- Include a photographic record of the remediation; and
- Provide a statement as to the suitability of the site for its proposed future land use.

8 SITE MANAGEMENT PLAN DURING REMEDIATION

The remediation works have the potential to cause environmental or human health issues.

8.1 Site Access

The site is fenced, and adequate fences or barriers will be placed around excavations and stockpiles to prevent access of unauthorised personnel to areas where contaminated material is exposed, and also to isolate the public from the hazards associated with excavations. Adequate warning signs will also be placed around the area.

8.2 Hours of Operations

Remediation hours of operations will be limited to the hours of general site works as stipulated in the DA consent.

8.3 Stormwater and Soil Management

Adequate stormwater runoff, run-on and sediment control measures will be put in place for the remedial works.

The following recommendations are provided to manage stockpiled material:

- Stockpiles should be managed in such a way as to prevent harm to the environment and general public from potentially contaminated soils within the stockpiles;
- Access to stockpiles of potentially contaminated material should be limited by keeping stockpiles within site fences;
- Stockpiles should be placed on level ground. If this is not possible, stockpiles should not be placed on slopes greater than 5°;

- Material should be placed on strong impermeable plastic sheeting to prevent the contamination of underlying soils. Material should not be stockpiled more than 2m high;
- Once the soils have been stockpiled, the stockpiles should be covered by polythene sheets or tarpaulins to prevent erosion of stockpiled materials. Heavy objects without sharp edges should be placed on the sheets to prevent them from being blown by wind;
- Adequate straw bales and/or silt fences should be placed around the perimeter of the stockpile areas to filter runoff from the stockpiles and prevent overland stormwater flow from affecting the base of the stockpile; and
- If needed, a diversion trench should be excavated, or tightly packed sand bags placed, up-gradient of the stockpile to prevent stormwater from running into the stockpile.

8.4 Noise

To mitigate noise impacts which may arise as a result of remedial works, the civil contractor will undertake the works in accordance with state and local noise regulations applicable to the site.

8.5 Dust Control

Dust control is required to prevent airborne dust being inhaled by human receptors. Airborne dust may be generated by wind action from loose earth left on the ground. This could cause migration of contaminated dust, as well as causing a nuisance for the surrounding area, and must be controlled.

Therefore, the following dust control measures are proposed:

- Dust levels will be monitored visually during site work; and
- Soil will be kept adequately moist to reduce the generation of dust.

8.6 Air Monitoring

According to Safe Work Australia *How to safely remove asbestos - Code of Practice* (2011), air monitoring involves sampling airborne asbestos fibres to assist in assessing exposure to asbestos and the effectiveness of implemented control measures, and should be considered where the asbestos removal work is being undertaken in or next to a public location, or where there has been uncontrolled disturbance of asbestos at the workplace. The risk to site workers and the public necessitates air monitoring at 4 locations.

Four asbestos fibre in air monitoring pumps will be set up and operated in accordance with the *Guidance Note On The Membrane Filter Method For Estimating Airborne Asbestos Fibres,* 2nd Edition [NOHSC:3003(2005)]. The pumps will be set up before the start of works each day (6:45am-700am). The pump filters will be collected at the end of the day (no later than 3:30pm to ensure delivery to the laboratory). Results should be requested next working day from the laboratory. The 4 monitoring locations will be established at the beginning of each day, subject to the weather forecast and local conditions.

If respirable asbestos fibre levels are recorded at the asbestos removal area boundaries at 0.01 fibres/ml or more, but not more than 0.02 fibres/ml the competent person or asbestos assessor will inform the project manager and site manager as soon as practicable and the the following procedures will be implemented as soon as practicable:

(i) investigate the cause of the respirable asbestos fibre level,

(ii) implement controls to prevent exposure of anyone to asbestos, and

(iii) prevent the further release of respirable asbestos fibres,

If respirable asbestos fibre levels are recorded at the asbestos removal area at more than 0.02 fibres/ml the competent person or asbestos assessor shall instruct the project manager and the site manager to:

(i) order the excavation work to stop, and

(ii) notify the regulator,

(iii) investigate the cause of the respirable asbestos fibre level, and

(iv) implement controls to prevent exposure of anyone to asbestos, and

(v) prevent the further release of respirable asbestos fibre by dampening the soil surface.

(vi) Excavation works will be suspended until the recorded respirable asbestos fibre level is below 0.01 fibres/ml.

8.7 Odour

The remediation works are not expected to generate any significant odours.

8.8 Workplace Health and Safety

A health, safety, security and environmental (HSSE) plan should be prepared by the remediation contractor, in accordance with relevant NSW legislation.

The HSSE plan should include, but not be limited to, the following.

- Hazard identification and control;
- Dust and odour monitoring during excavation and stockpiling works;
- Chemical hazard control;
- Handling procedures;
- Personal protective equipment (PPE);
- Work zones;
- Decontamination procedures;
- Contingency plans; and
- Incident reporting.

The HSSE plan should be periodically reviewed and updated prior to the various project tasks being conducted.

The contractor, supporting sub-contractors, and third party observers to the site will be required to work strictly to the plan. During site activities, only approved personnel should be allowed access to the remediation work area.

The HSSE plan will identify hazards, assess the risks posed by the hazards, and recommend measures to control the hazards.

8.8.1 Summary of Contamination and Exposure Pathways

Exposure of site users to contaminants could occur through:

- Dermal contact with contaminated soil;
- Ingestion of contaminated soil;
- Inhalation of hydrocarbon vapours; and
- Inhalation of contaminated dust.

8.8.2 Health and Safety Control Measures for Contamination Hazards

The following section presents some control measures that should be adopted to manage health and safety hazards posed by contamination during the remediation. These control measures include:

- Site access restrictions;
- PPE; and
- Safe work practices.

It is important to note that these procedures will need to be evaluated for effectiveness, and where necessary revised and/or improved during site work.

Personal Protective Equipment

To minimise short and long term health risks associated with working on a construction site, and with potential exposure to contaminants, the minimum level of PPE required for persons undertaking the excavations includes:

- Hard hats;
- High visibility clothing;
- Long sleeve shirts and trousers;
- Steel capped work boots;
- Safety glasses;
- Chemical resistant rubber gloves (for persons coming in contact with soil); and
- Dust resistant disposable overalls and P2 full face (minimum) dust masks (when handling potentially asbestos contaminated soil).

Safe Working Practices

Chemical resistant gloves should be changed after handling each sample, and disposed of appropriately.

The contractor should ensure that adequate signage is present across the remediation area to warn unauthorised persons from entering the area.

Eating, drinking, chewing gum or tobacco, smoking, or practices that involve hand to mouth transfer increase the probability of ingestion of contaminated soil or dust into the body. With respect to remediation activities, hands must be thoroughly washed after coming into contact with soil or groundwater on the site before eating, drinking or smoking.

Smoking will be prohibited in the remediation areas.

8.9 Remediation Schedule

The remediation will take around three weeks to complete.

A validation report will be submitted two weeks thereafter.

9 LEGISLATIVE AND REGULATORY FRAMEWORK

This section provides a summary of current legislation and regulations applicable to the RAP.

9.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 ('EP&A Act') regulates development in NSW, and incorporates the principles of ecologically sustainable development through the EP&A Regulation 2000.

9.1.1 Changes to the Act

Part 3A of the EP&A Act was repealed and replaced by the Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011. The complementary planning policy has also been revised to the State Environmental Planning Policy (State and Regional Development) 2011.

In accordance with Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011, Remediation of Contaminated Land is considered State Significant Development if it is classified as Category 1 Remediation Work on 'significantly contaminated land' and remediation is required under the Contaminated Land Management Act ('CLM Act').

9.1.2 State Environmental Planning Policy (SEPP) 55 – Remediation of Land

State Environmental Planning Policy – Remediation of Land (SEPP 55) under the EP&A Act provides a framework for contaminated land remediation. Remediation work which requires development consent is known as Category 1 work. Category 1 refers to work:

- Designated development; or
- Carried out or to be carried out on land declared to be a critical habitat; or
- Likely to have a significant effect on a critical habitat or a threatened species, population or ecological community; or
- Development for which another State environmental planning policy or a regional environmental plan requires development consent; or
- Carried out or to be carried out in an area or zone to which any classifications to the following effect apply under an environmental planning instrument:
  (i) coastal protection;
  (ii) conservation or heritage conservation;
  (iii) habitat area, habitat protection area, habitat or wildlife corridor;
  (iv) environment protection;
  (v) escarpment, escarpment protection or escarpment preservation;
  (vi) floodway;
  (vii) littoral rainforest;
  (viii) nature reserve;
  (ix) scenic area or scenic protection;
  (x) wetland; or
  (xi) carried out or to be carried out on any land in a manner that does not comply with a policy made under the contaminated land planning guidelines by the council for any local government area in which the land is situated (or if the land is within the unincorporated area, the Western Lands Commissioner).

All other remediation work is classified as Category 2 work and may be carried out without development consent. The local council must be notified at least 30 days prior to the commencement of Category 2 remedial works.

As the site is not affected by items (i)-(xi), the process described in this RAP is considered to be Category 2 remediation.

9.2 Protection of the Environment Operations Act 1997

Under Section 48 of the Protection of the Environment Operations Act 1997 ('POEO Act'), an Environment Protection Licence (EPL) is required if the activity undertaken is listed in Schedule 1. The POEO Act also defines 'waste' for regulatory purposes.

9.2.1 Contaminated Soil Treatment

Contaminated soil treatment is declared to be a scheduled activity requiring a licence if:

- In any case, it has the capacity to treat more than 1,000 cubic metres per year of contaminated soil received from off-site; or
- Where it treats contaminated soil originating exclusively on-site, it has a capacity:
  (i) to incinerate more than 1,000 cubic metres per year of contaminated soil; or
  (ii) to treat (otherwise than by incineration) and store more than 30,000 cubic metres of contaminated soil; or
  (iii) to disturb more than an aggregate area of 3 hectares of contaminated soil.

As no contaminated soil is proposed to be received from off-site, less than 30,000m^3 of contaminated soil is proposed to be stored at the site, and less than 3 hectares of contaminated soil will be disturbed, the remedial works are not considered to be a scheduled activity under the Act, and do not require a licence.

9.3 Work Health and Safety Regulation 2017

AF/FA asbestos was encountered on site, the presence of a person holding a Class A asbestos removal licence and air monitoring by a licensed asbestos assessor will be required.

9.4 Contaminated Land Management Act 1997

The CLM Act establishes a process for the investigation and remediation of land that is contaminated, where the contamination is considered significant enough to warrant regulation.

Under Section 60 of the CLM Act, a person whose activities have contaminated land, or a landowner whose land has been contaminated, is required to notify the NSW EPA when they become aware of the contamination. Notification is required when soil concentration triggers are exceeded and a person either has been, or foreseeably will be, exposed to the contaminant or any by-product of the contaminant.

JME considers that there is no duty to report the site to the NSW EPA.

9.5 Waste Classification Guidelines/Resource Recovery Exemptions

Classification of excavated material will be undertaken according to the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014) or the relevant current resource recovery order. The following considerations should be reviewed prior to the re-instatement or disposal of stockpiled material:

- Is the waste special (asbestos) waste?
- Does the waste classify as:
  - General solid waste (GSW)?
  - Restricted solid waste? or
  - Hazardous waste?

If necessary, the waste should be disposed of at an appropriately licensed landfill facility. Material entering/leaving the site will be tracked and documented. Documentation will be included in the site validation report.

10 CONTACTS

The following provisional contact numbers for project personnel are given for the duration of the project. The contact names will be displayed on a sign during the remediation process.

In the event that project personnel change, relevant parties will be notified.

TABLE 3: PROJECT PERSONNEL CONTACT NUMBERS

Environmental Consultant James McMahon JM Environments Mobile: 0427 893 668 email: james@jmenvironments.com
Client Contact TBA

11 ROLES AND RESPONSIBILITIES

Roles and responsibilities for the planed remediation works are set out in Table 4.

TABLE 4: ROLES and RESPONSIBILITIES

Action	Responsible Party
Site Access	Site owner
Excavation and disposal of impacted soil	Class A Asbestos Removalists
Air monitoring	JME
Waste classification	JME
Compliance with RAP	Class A Asbestos Removalists
Validation of compliance	JME

12 CONTINGENCY PLAN

A contingency plan is outlined in Table 8, listing potential events that may arise during the field work and actions that may be undertaken if unexpected conditions occur.

TABLE 8: CONTINGENCY PLAN

Unexpected Condition	Action
Identification of unexpected contaminated materials during excavations.	Stop work in that area. Demarcate an exclusion zone around the area. Contact JME as soon as practicable. Stockpile material on a bunded, plastic-lined pad. Excavation of the material should continue until it has been visually removed. Waste classify and remove from site. Additional samples and analytes may be required to be collected, and different analytes analysed for (depending on the nature of the material).
Further ACM observed during excavation/construction works.	Stop work in the area. Demarcate an exclusion zone around the area. Contact JME as soon as practicable. Implement an Asbestos Management Plan (to be developed in response to the discovery of ACM).
Remediation is unsuccessful (ie following validation works (as discussed in Section 7) it is not considered that contamination remaining on site has been effectively isolated from potential sensitive receptors).	Discussion with the client regarding additional remedial measures. These may include: • Additional sampling and analysis to better understand the nature and extent of contamination; • The excavation and appropriate disposal of contaminated material; • The importation/construction of additional barrier layers between contaminated material and the environment; or • The installation of a passive vapour barrier and sub-slab depressurisation system.

REFERENCES

JME24064-2 Preliminary Contamination Assessment 237 Wharf Road Newcastle NSW, 24 October 2024.

JME24064-4 Detailed Contamination Assessment 237 Wharf Road Newcastle NSW, 6 February 2025.

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) Schedule B1, Guideline on Investigation Levels for Soil and Groundwater

National Environment Protection (Assessment of Site Contamination) Measure (1999, updated 2013) Schedule B5c, Guideline on Ecological Investigation Level for Arsenic, Chromium (III), Copper, DDT, Lead, Naphthalene, Nickel & Zinc

Newcastle Local Environmental Plan (2012)

NSW Contaminated Land Management Act (1997)

NSW Department of Environment and Conservation (2017) Guidelines for the NSW Site Auditor Scheme (3rd Edition) Contaminated Sites

NSW Department of Land and Water Conservation (1995) Newcastle Soil Landscape Series (sheet 9232)

Australian Standard AS4419-2003-Soils for Landscaping and Garden Use

NSW Department of Mines (1966) Newcastle 1:250,000 Geological Sheet (S1/56-2)

NSW Environment Protection Authority (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land management Act (1997)

NSW Environment Protection Authority (1995) Sampling Design Guidelines

NSW Environment Protection Authority (2014) the excavated natural material exemption

NSW Environment Protection Authority (2014) the excavated natural material order

NSW Environment Protection Authority (2014) Waste Classification Guidelines Part 1: Classifying Waste

NSW Environment Protection Authority (2020) Guidelines for Consultants reporting on contaminated land

NSW Environmental Planning and Assessment Act (1979)

NSW Environmental Planning and Assessment Amendment (Part 3A Repeal) Act (2011)

NSW Occupational Health & Safety Act 2000

NSW Occupational Health & Safety Regulation 2001

NSW Protection of the Environment Operations Act (1997)

NSW Protection of the Environment Operations (Waste) Regulation 2005

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LIMITATIONS

The contents of this RAP are the result of discrete/specific sampling practices, used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general conditions of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely, and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of data.

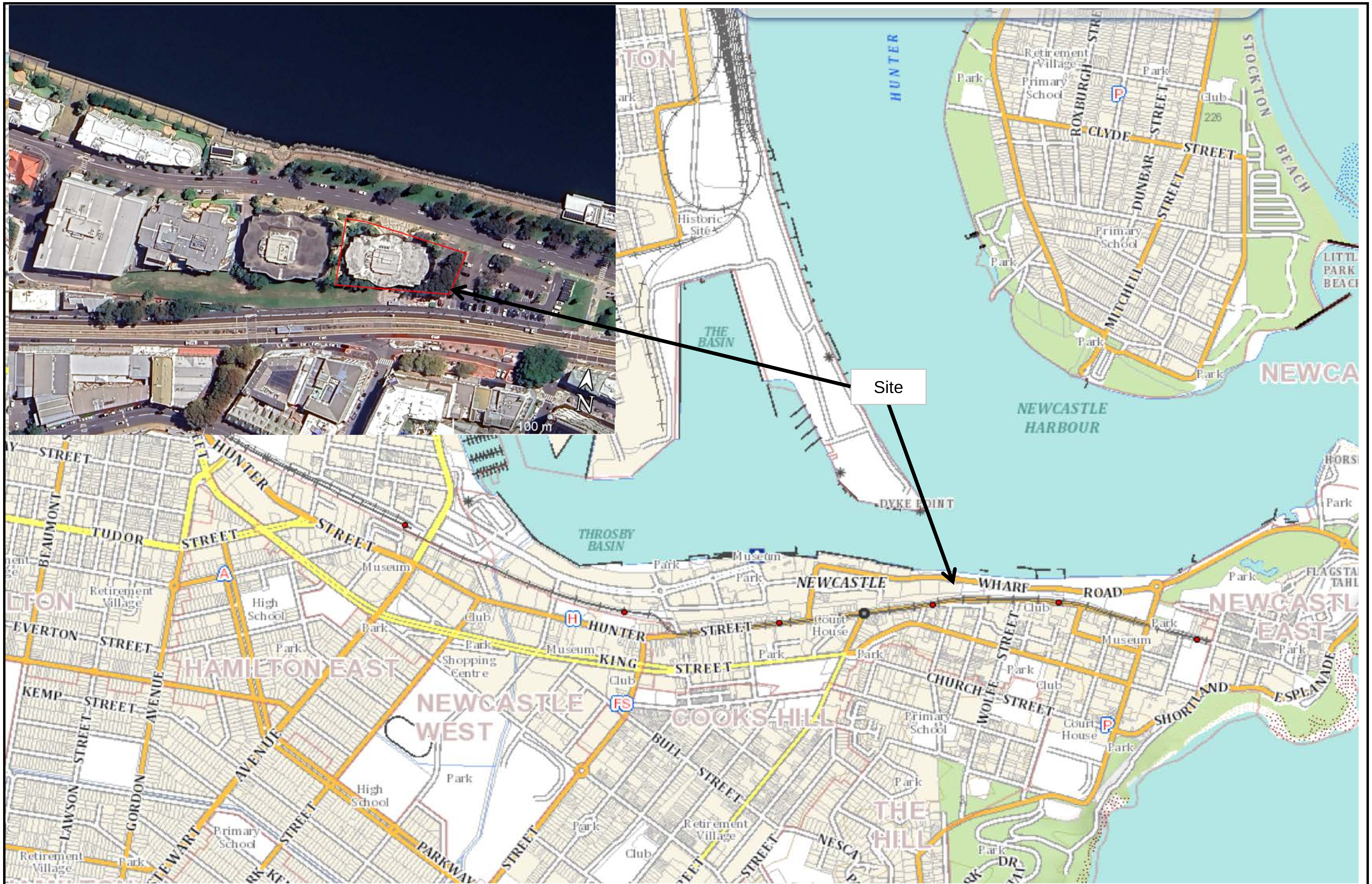
In preparing this RAP, current guidelines for assessment and management of contaminated land were followed. This work has been conducted in good faith, in accordance with JME's understanding of the client's brief, and general accepted practice for environmental consulting.

This RAP was prepared for Tamba Pty Ltd, with the objective of remediating the presence of contamination on the site that could potentially impact on the development of the property for multi-storey residential use. No warranty, expressed or implied, is made as to the information and professional advice included in this report. This RAP is not intended for other parties or other uses, with the exception of NCC for the purpose of assessing the DA. Anyone using this document does so at their own risk, and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation at the time.

This RAP is only applicable for the site's proposed redevelopment as multi-storey residential use. If the proposed redevelopment is altered, the RAP will have to be altered accordingly.

This report does not comprise a geotechnical assessment and should not be used for geotechnical purposes.

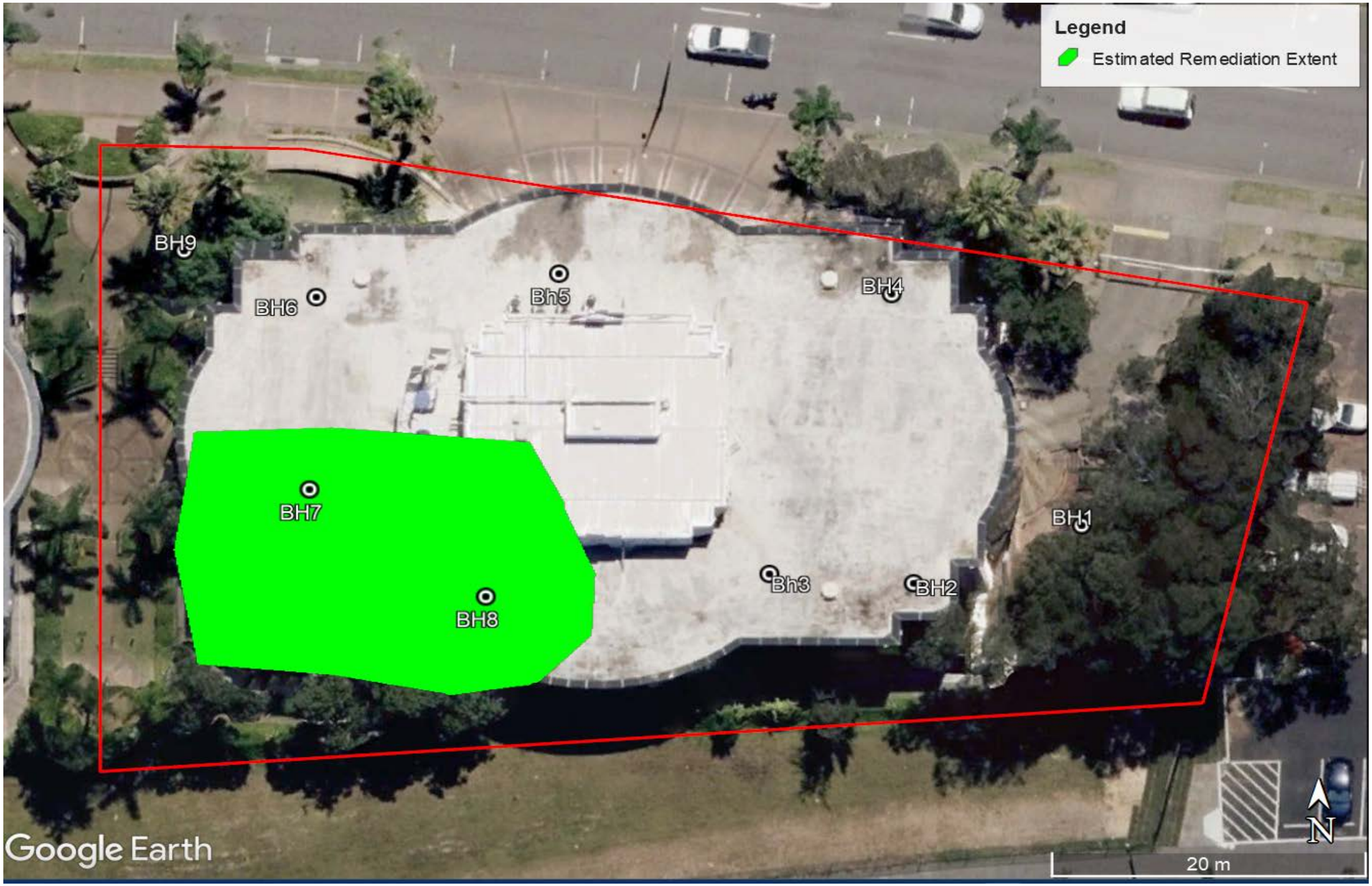
Figures



Site
100 m
N
HUNTER
NEWCASTLE HARBOUR
THE BASIN
THROSBY BASIN
DYKE POINT
Historic Site
Park
Retirement Village
Primary School
Club
ROXBURGH STREET
CLYDE STREET
DUNBAR STREET
MITCHELL STREET
STOCKTON BEACH
LITTLE PARK BEACH
NEWCASTLE
WHARF ROAD
HUNTER STREET
KING STREET
TUDOR STREET
HUNTER STREET
BEAUMONT
EVERTON STREET
KEMP STREET
LAWSON STREET
GORDON
STEWART AVENUE
PARKWAY
HAMILTON EAST
NEWCASTLE WEST
COOKS HILL
THE HILL
NEWCASTLE EAST
Museum
High School
Shopping Centre
Court House
CHURCH STREET
WOLFE STREET
BULL STREET
NESCA
SHORTLAND
ESPLANADE
FLAGSTAFF
HORSE

CLIENT: **Tamba Pty Ltd**	PROJECT:	JME24064	DESIGNED:	JMc	FIGURE TITLE:
c/- EJE Architecture	DWG #:	1	DRAWN:	JMc	**Site Location Plan**
	REVISION:	1			
PROJECT TITLE: **237 Wharf Road Newcastle**	SCALE:	As shown	STATUS:	NFC	
	DATE:	11/09/2024			FIGURE NUMBER: **1**

ENVIRONMENTS



ENVIRONMENTS	CLIENT: **Tamba Pty Ltd**	PROJECT:	JME24064	DESIGNED:	JMc	FIGURE TITLE:
	c/- EJE Architecture	DWG #:	1	DRAWN:	JMc	**Estimated Lateral Extent of Remediation**
		REVISION:	1	STATUS:	NFC	
	PROJECT TITLE: **237 Wharf Road Newcastle**	SCALE:	As shown			
		DATE:	7/02/2025			FIGURE NUMBER: **2**