CERTIFICATE OF UNEXPLODED ORDNANCE (UXO) CLEARANCE

PROJECT: KIR 58723 **–** Te Kai Office Site – UXO Remediation - Betio, Tarawa, Kiribati.

DATE OF CERTIFICATE: 20/05/2025

DATE OF WORKS: 5th – 10th Feb 2025 9th – 17th May 2025

ISSUED BY: Milsearch Pty Ltd, ABN 44 007 106 881, of Unit 1, Level 2, 8 Regent Street Wollongong NSW 2500, Australia (Milsearch)

ISSUED TO Tetra Tech International Development Pty Ltd, ABN 63 007 889 081, of 33 Richmond Road Keswick, SA 5035 (Client)

CERTIFICATION: This certificate is issued for the purpose of certifying the area, as defined herein, to be managed of UXO risk in accordance with industry practice to the point of 'So Far As Is Reasonably Practicable' (SFAIRP) subject to the stated limitations. This certificate does not reduce the UXO risk to zero. It is not a guarantee that the area is 100% free from UXO and therefore cannot be considered as a 'free from ordnance' certificate.

MINIMUM STANDARDS: UXO clearance has been carried out in accordance with the Australian Government, Department of Defence, Environment and Engineering Branch Directorate of Contamination Assessment, Remediation and Management, "Defence Unexploded Ordnance Management Manual (DUXOMM)", September 2022, Annex 6E UXO Remediation: Minimum Standards.

UXO CLEARANCE METHOD: Subsurface UXO clearance was performed by:

utilising the following primary search instrument:

- Analogue Instrument - Minelab F3C Pulse Induction Electromagnetic Detector (F3C).
- Analogue Instrument – SENSYS SBL 10 Magnetometer (SBL 10).

LIMITATIONS: Subsurface UXO clearance was subject to the following geophysical detection limitations:

- Detection of a UXO is dependent on a sufficient conductivity or magnetic susceptibility contrast between a UXO and its host materials. Significant degradation of the casing of such a device or highly magnetic soils may prevent detection under certain circumstances,
- The clearance task specifically targets the anticipated risk of ordnance (mortars, grenades, bombs and alike) within the limits of the equipment capability as stated herein,
- As with all UXO clearance tasks, 100% clearance is not guaranteed. Fragments of ordnance might still be present within the soil and the risk (albeit very low) of whole ordnance devices being found during future excavation works cannot be totally discounted.

The following site-specific physical limitations were noted:

- Site was significantly contaminated with modern waste, located in buried pits scattered across the clearance area. These were excavated to remove metal signatures possible of being UXO
- The clearance depth was limited by the water table on Betio island, which was found to be approximately 1.6m below the surface.
- Due to the presence of a large building West of the project area, a portion of the site could not be cleared. The metallic signature detected by handheld detectors interfered with identifying any deeper anomalies. The limitation is presented in Figure 2.
- Fenceline surrounds on the North, East and South sides of the area have been cleared to a distance of 300mm from the fence.

Several individual limitations were identified within the clearance area:

- IL-03 (water tank), IL-04 (water well)
- IL-05 (live power cable) depth 300mm, IL-06 (live power cable) depth 300mm
- AL-01 to AL-02 (Building), AL-03 to AL-04 (sewer pipe) depth 400mm

A list of limitations together with coordinates are set out in Table 1-3. Additional UXO clearance tasks may be required if stated herein.

UXO CLEARANCE DEPTH: The following clearance depths were achieved, expressed as the combination of the limitations of the primary search instrument and the potential common types of UXO present:

- (to be based on project specific contract/proposal) 2in mortar bomb equivalent to 0.2m
- 3in mortar bomb equivalent to 0.5m
- 25pdr artillery projectile equivalent to 1.0m

POTENTIAL UXO PENETRATION DEPTH: The common types of UXO present have the potential to be located at depths beyond that of the limitations of the primary search instrument. Based on the observed surface soil conditions additional UXO clearance tasks may be required if stated herein.

CLEARANCE AREA: Subsurface UXO clearance was carried out within the area defined by the coordinates, in the map projection WGS84/UTM Zone 59 North, and as depicted in the accompanying drawing and coordinates list.

- Conduct a surface metal pick up of the area to be remediated. Conduct a subsurface search utilising the SBL10 Magnetometer and F3C Minelab detector.
- A layer of asphalt approx. 250-300mm thick at a depth of approx. 200mm was located throughout the entire search area.
- A large amount of rubbish and metal debris was on top of and underneath the asphalt layer and was removed and subsequently a clearance underneath was completed.

PHYSICAL MARKING OF CLEARED AREAS: The clearance areas have been demarcated utilising wooden stakes and flagging tape at each DGPS point (Figure 1 / Table 1)

PHYSICAL MARKING OF INDIVIDUAL LIMITATIONS: The Individual limitation locations have been demarcated utilising stakes and flagging tape at each DGPS point. (Figure 3 / Table 3)

ITEMS OF UXO OR EXPLOSIVE ORDNANCE (EO) FOUND: The following items of UXO and/or EO were found during the clearance task:

- No items of UXO/EO were found during the clearance task.

ASSOCIATED UXO NOTIFICATIONS: The following associated reporting forms of UXO found during the project were provided to the relevant organisations (Range Control/Police/JEOS):

NIL

DEMARCATION OF ITEMS OF UXO/EO: Items of UXO/EO yet to be disposed by the relevant organisations are demarcated by the following:

NIL

OBSERVED MILITARY ACTIVITY/EXPLOSIVE ORDNANCE MATERIAL (EOM): The following evidence of military activity was found during the clearance task:

- 24 items of EOM (In the form of Fragmentation from large ordnance)
- 6 items of small arms ammunition

This is consistent with all areas on Betio island due to the heavy fighting that took place during the Second World War

ASSOCIATED EOM FREE FROM EXPLOSIVES (FFE) AND DISPOSAL CERTIFICATION:

NIL – All Small arms ammunition was handed to KPS for storage in the bunker in vicinity of Betio police station.

ADDITIONAL UXO CLEARANCE TASKS: Due to the limitations, geophysical and/or physical, the potential UXO penetration depth, and the observed surface soil conditions the following additional remediation requirements are recommended:

NIL

FURTHER RECOMMENDATIONS: It is advised that earthworks and associated personnel are familiarised with potential types of UXO and chance find procedures.

CERTIFICATE AUTHORISATION: For and on behalf of Milsearch I certify that this is a true and accurate record:

Damien Potter
Project Manager/Unexploded Ordnance (UXO) Technician
Dated: 20 May 2025

David Moore
Project Manager/Unexploded Ordnance (UXO) Technician
Dated: 15 Feb 2025

and:

Alexander Carpenter
Project Director
Dated: 20 May 2025

RELIANCE: This Certificate is issued to and is for the benefit of the Client only. It may not be relied upon by any other person or entity. Milsearch will not be liable to any person for any findings or disclosures made in this Certificate other than the Client. This Certificate is valid on the date on which it is issued and will not be updated to take into account any geographical changes to affected terrain including subsidence, seismic activity, anticipated future land use or other factors or circumstances after the date of this Certificate.

CLEARANCE AREA:

Figure 1: Clearance area Te-Kai Office Site



CLEARANCE AREA DGPS COORDINATES:

Table 1: Clearance Area GPS Te-Kai Office Site

Point ID	Eastings	Northings
CA1	150007.8447	715165.9982
CA2	149997.1671	715162.321
CA3	149989.6901	715159.2641
CA4	149993.9741	715144.3815
CA5	149998.2567	715143.3305
CA6	150003.1707	715143.3414
CA7	150004.8025	715136.6165
CA8	150013.4543	715140.4661
CA9	150011.474	715147.0173
CA10	150013.5839	715149.3165
CA11	150009.7129	715159.8095

AREA LIMITATIONS:

Figure 2: Area Limitations Te-Kai Office Site



AREA LIMITATION DGPS COORDINATES :

Table 2 : Te-Kai Office Site Area Limitations

Point ID	Eastings	Northings
AL1	150004.3224	715135.1452
AL2	150014.5977	715138.4894
AL3	149992.1934	715156.5139
AL4	150010.0848	715143.1133

INDIVIDUAL LIMITATIONS GPS:

Figure 3 : Individual Limitations Te-Kai Office Site



INDIVIDUAL LIMITATIONS DGPS COORDINATES:

Table 3: Individual Limitations Te-Kai Office Site

Point ID	Eastings	Northings
IL3	150013.7689	715140.518
IL4	150012.6815	715144.1297
IL5	149993.5733	715151.8718
IL6	149990.6854	715154.5863



Individual Limitation – Electrical Cabling



Water Tank / Water Well – Individual limitation



Area Limitation - Building



Area Limitation Sewer line



Marking of the Electrical Cabling



Rubbish and debris removed



EOM and scrap metal removed