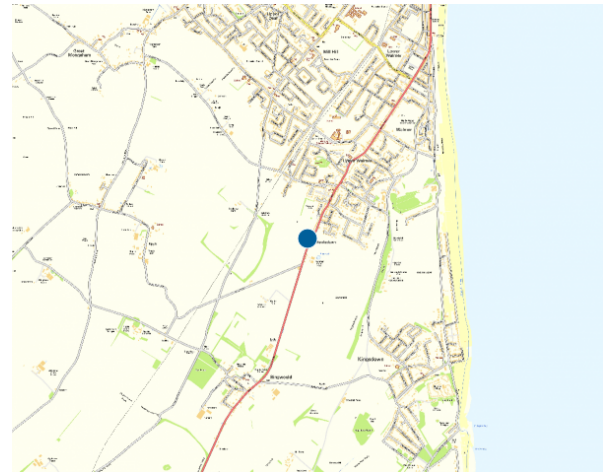
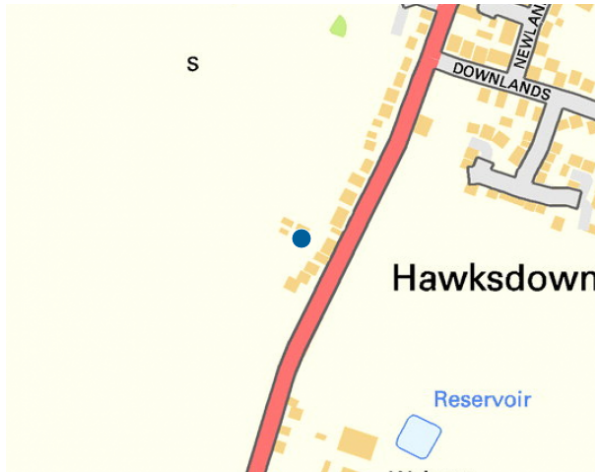


Preliminary Unexploded Ordnance Risk Assessment



Project: Land off Dover Road/Cross Road

Prepared for: RSK Environmental

Ref: Sophia Foschini

Report prepared by Dynasafe BACTEC Limited and FIND Mapping Limited

Report reference: 502074

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Preliminary Unexploded Ordnance Threat Assessment

Land off Dover Road/Cross Road

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1 Executive Summary

1 Has a potential unexploded ordnance (UXO) risk been identified at the site in question?

YES

Indicative British / Allied UXO Risk

LOW

Indicative German UXO Risk

MEDIUM

2 Does the site in question require further research to clarify the unexploded ordnance (UXO) risk to future ground works?

YES

3 Dynasafe BACTEC's recommendation:

A Stage 2 Detailed Unexploded Ordnance Desktop Threat Assessment of the site is carried out.

To request a quotation please call Dynasafe BACTEC Limited on 01322 284 550

If you order the recommended Stage 2 Detailed Desktop Threat Assessment, you will be refunded the fee for this BombRisk Preliminary Threat Assessment.

2 Introduction

About Dynasafe BACTEC Limited

Since 1991, Dynasafe BACTEC Limited has supported the UK construction industry by assessing the risk of encountering items of unexploded ordnance (UXO) during intrusive works. Dynasafe BACTEC's specialist advice provides essential information for threat assessments, improving safety and enhancing reputations, helping contractors avoid costly delays.

Dynasafe BACTEC holds the following accreditations: Occupational Health & Safety Management Systems (OHAS 18001:2007), Environmental Management Systems (ISO 14001:2004) and Quality Management Systems (ISO 9001:2008).

The risk of encountering UXO on most sites in the UK is low. However, where a site is at increased risk it is necessary to take measures to mitigate that risk. The factors affecting UXO threat assessment are based upon the history and previous usage of a site and its surroundings.

In 2009, the Construction Industry Research and Information Association (CIRIA) established a set of guidelines to assist industry professionals.

CIRIA recommends a four stage risk management process:

- **Preliminary threat assessment**
- **Detailed threat assessment**
- **Risk mitigation**
- **Implementation**

The preliminary threat assessment enables a non-UXO specialist to place a site in context and to identify whether a more detailed assessment is necessary. The assessment is based upon data obtained from desktop reviews of the site's history and its proximity to potential indicators of UXO contamination.

There are two principal groups of onshore UXO in the UK:

- **British / Allied Army, Air Force and Navy activities – domestic military activity**
- **Enemy bombing during WWI and WWII – aerial bombing and naval bombardment**

These two groups comprise many potential UXO risk contributing sources within the UK, the most significant of which are listed below. Georeferenced databases containing this information are used by BombRisk.com to identify areas of potentially elevated UXO risk.

- **Historic army, navy and air-force facilities**
- **Explosives / ammunition factories**
- **Munitions storage depots**
- **Historic military training areas and firing ranges**

- **British army explosive ordnance clearance tasks / recces**
- **WWII heavy anti-aircraft batteries**
- **WWII anti-invasion defensive fortifications**
- **Miscellaneous WWII pipe mined locations**
- **WWII prisoner of war camps**
- **WWII German bombing density statistics**
- **WWII bombing decoy sites**
- **Press articles regarding UXO finds**
- **Locations of Dynasafe BACTEC UXO finds**
- **Locations of Dynasafe BACTEC desktop threat assessments**
- **Locations of Dynasafe BACTEC on-site support services**

About FIND Mapping Limited

Established in 2006, FIND Mapping Limited is a pioneering web mapping and spatial data technology company offering online mapping and consultancy services. FIND technology powers the generation of this report.

www.findmaps.co.uk provides detailed mapping and a wealth of data sets to hundreds of the UK's top property, environmental and design/build companies.

FIND's consultancy services provide bespoke internet mapping solutions to a range of businesses enabling them to manage their spatial data more effectively.

While working closely with a wide range of reputable data providers including Ordnance Survey and the Environment Agency, FIND works independently of these organisations. A similar arm's-length relationship is maintained in terms of software and hardware providers. This enables the team at FIND to offer truly independent advice.

3 Methodology

Dynasafe BACTEC Limited and FIND have compiled a geo-referenced database of potential sources of UXO risk within the UK. From this information a range of risk zones have been defined.

The weighting of these zones is based upon the influence of all relevant factors. A WWII-era RAF airfield, for example, has a far greater zone of influence than a single WWII-era Anti-Aircraft Battery, as it would have covered a larger area, housed a much greater quantity / variety of munitions, seen more domestic troop training activities and would have been a more likely target for enemy bombers.

An online Preliminary Automated UXO Threat Assessment will determine an indicative level of UXO risk relating to a site. Note that these risk levels could be subject to change following the completion of any Detailed Desktop Threat Assessment for the same site.

The assessment will list all factors contributing to this weighting and will also give appropriate recommendations for further action, if considered necessary.

4 Search Results

Dynasafe BACTEC Limited's UXO Source Database

Within 10km of the site the following potential sources of explosive ordnance have been recorded:

| Source | Number within 10km |
|---|---------------------------|
| Military Airfield Sites | 5 |
| Bombing Decoy Sites | 3 |
| Abandoned Bombs | 3 |
| Press Articles regarding UXO Finds | 5 |
| WWII Defence Related Positions & Pillboxes | 318 |
| Historic Army Camps | 6 |
| Military Training Areas and Firing Ranges | 4 |
| Heavy Anti-Aircraft Batteries | 22 |
| Army Explosive Ordnance Clearance Tasks/Recces | 33 |
| Dynasafe BACTEC Desk-top Threat Assessments | 10 |
| Prisoner of War Camps | None recorded |
| Pipe Mined WWII Airfields | None recorded |
| Miscellaneous WWII Pipe Mined Locations | None recorded |
| Sites Related to the Manufacture of Explosives and Explosive Ordnance | None recorded |
| Dynasafe BACTEC Unexploded Ordnance Finds | None recorded |
| Dynasafe BACTEC On-Site Support Services | None recorded |

Of these sources, the following are deemed the most significant:

Army Explosive Ordnance Clearance Tasks/Recess

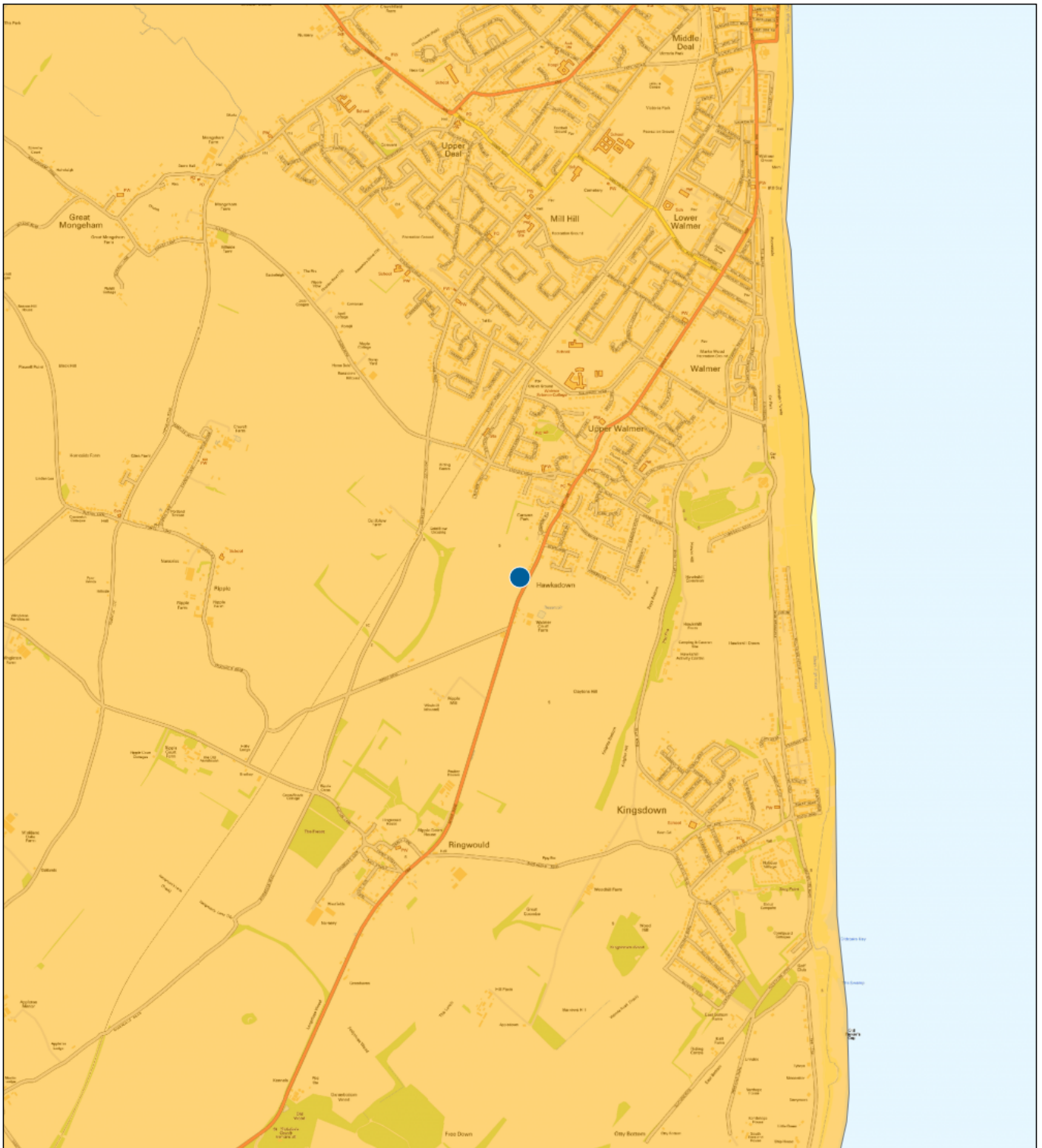
| Location | Approximate distance (km) from site |
|--|--|
| Walmer Social Education Centre, Walmer | 1.1 |

The site lies within or close to an area where a military clearance operation has been recorded. A clearance operation can describe anything from the recovery of a single item of ordnance found by a member of the public to large scale tasks involving detailed surveys.

Specific research is recommended in order to ascertain the scale of the clearance operation. This would include the type and quantity of ordnance recovered.

Records of a clearance task may indicate a history of military presence in an area. This history increases the risk that further munitions may be present.

5 Risk of UXO based on WWII German bombing density







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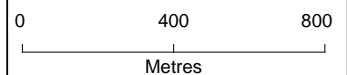
BombRisk.com

Dynasafe BACTEC Limited



-  NEGLIGIBLE
-  LOW
-  MEDIUM
-  HIGH

1:20000



6 Conclusions

Risk Levels and Recommendation

Indicative British / Allied UXO Risk

LOW

There are potential sources of British / Allied UXO recorded in Dynasafe BACTEC's historical database in the general area surrounding the site. However, they are not considered close enough to the site or significant enough to warrant further research. If there is any empirical evidence of actual or potential contamination, Dynasafe BACTEC should be contacted for advice. Otherwise, the risk on site from UXO is considered to be Low.

Indicative German UXO Risk

MEDIUM

Historical records indicate a medium level of bombing density across the borough in which the site was situated during WWII.

More research should be undertaken to identify whether the site itself was bombed or damaged during WWII.

This preliminary assessment has identified a Medium risk from German unexploded bombs at this site.

Conclusion

This preliminary assessment has resulted in an overall Medium risk from UXO. Dynasafe BACTEC would recommend that a Detailed UXO Threat Assessment Desk Top Study is undertaken for this site.

Detailed assessments are conducted offline by Dynasafe BACTEC's researchers and use information such as historical mapping, WWII-era aerial photography, written air-raid precaution records and where necessary local archive research to fully qualify the risk on site. Land use, changes to building layout during WWII and post war redevelopment will also have an impact on any remaining level of risk from UXO. It is often possible to 'zone' sites into different risk categories. The lead time for a detailed assessment will vary between 3-10 working days dependent upon the complexity of the site and the additional site specific information required.

For a quotation, or more information, please contact Dynasafe BACTEC on 01322 284 550.

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Dynasafe BACTEC Limited
9, Waterside Court, Galleon Boulevard
Crossways Business Park
Dartford, Kent, DA2 6NX
United Kingdom
Tel: +44 (0) 1322 284 550
Email: support@bombrisk.com

www.bactecuxo.com | www.dynasafe.com