



1ST LINE DEFENCE

Case Study

Thetford, Norfolk



Challenge

In December 2015, 1st Line Defence were commissioned by Norfolk Wildlife Trust to provide UXO Support at a site near Thetford in Norfolk to determine whether any UXO contamination may be present prior to construction work commencing to develop a new culvert.

The client was aware that previous UXO finds had been made in the area, and wanted to make sure that their ground works could proceed safely for all of the workers on-site.

Process

Stage 1 – Risk Mitigation Strategy

Preliminary research was undertaken by our in-house Research team which showed the site area was part of a WWII-era practice bombing range. Therefore, there was a potential risk of UXO contamination from Land Service Ammunition (LSA), Practice Bombs, and other types of explosive ordnance that may have been used during training exercises.

Because of previous use and history of the main works area, the site was assessed to be at a 'High-Risk' of UXO contamination being present, and additional UXO risk mitigation was recommended.

As the site was 'greenfield' and previously undeveloped, and taking into consideration the risk and the proposed scope of works – the client was advised that a Non-intrusive UXO Survey should be undertaken to minimise the risk of UXO contamination to as low as reasonably practicable (ALARP).

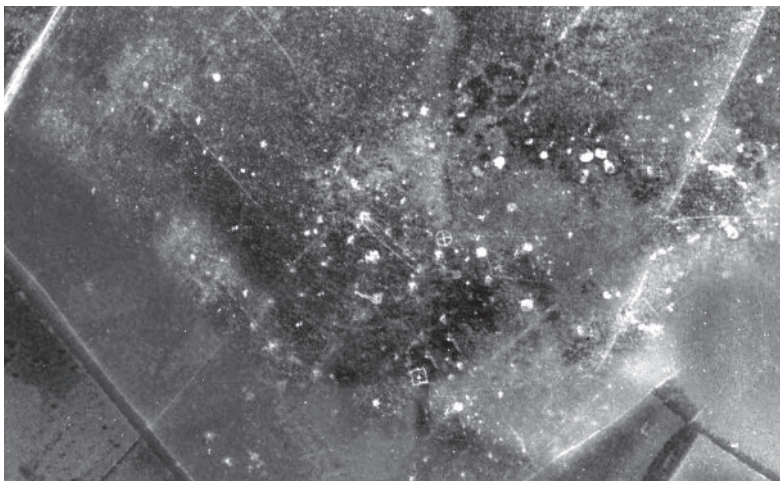


Image showing aerial photography of the Thetford area in 1945, with obvious signs that a bombing range was previously active in the main works area.

Case Study Overview

Client

Norfolk Wildlife Trust

Location

Thetford, Norfolk

Industry

Land Management

Project Duration

December 2015 – December 2016

Services

Non-intrusive UXO Survey

UXO Support

Target Investigation

34 Hectares

Surveyed & Investigated

60+

Items of UXO discovered

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Process (cont.)

Stage 2 – Non-intrusive UXO Survey

A two-man team surveyed the main works area and the data was sent to our in-house Geophysical team for processing and interpretation. A false-colour map was produced which showed a number of sub-surface ferrous anomalies which were recommended for further investigation.

A number of targets were identified and modelled, and a selection were inspected by our Target Investigation team.

Stage 3 – UXO Support

The Target Investigation team relocated each target using GPS, utilising modelled masses and depths – to excavate each anomaly.

During the investigation phase all of the anomalies were found to be ordnance or ordnance-related, all understood to be related to the nearby historic firing range.

Due to the high amount of UXO recovered from the first investigation phase, the target list was amended to inspect 100% of all anomalies.

At the end of the operation a total of 63 UXO-related items were recovered, these included 'live' 3-inch HE mortar rounds and a 'live' British 500lb unexploded bomb.

The 'live' 500lb unexploded bomb and Mortar rounds were destroyed in-situ by the Ministry of Defence (MoD) and any Free From Explosives (FFE) or ordnance related scrap materials were safely disposed of by 1st Line Defence.

Outcome

Following several months of surveys and ground investigations, the risk from UXO was reduced to ALARP status – no further suspicious items were discovered and the development was completed by December 2016.

The presence of UXO did cause a small delay to the project, but through careful communication with the clients' site manager – the project was completed on-schedule and most importantly, the safety of all workers on-site was maintained at all times.

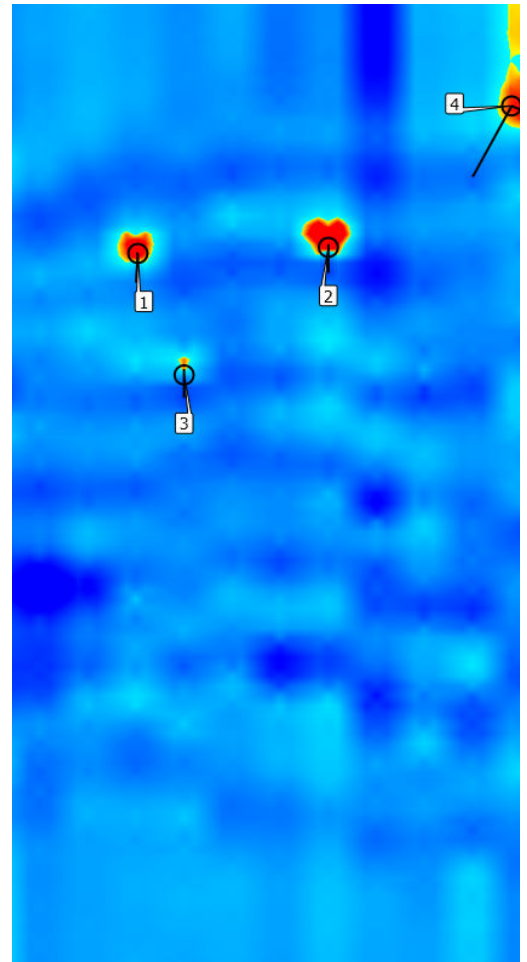


Image showing the results from a Non-intrusive Survey which was completed at Thetford in Norfolk.



Image showing a British 500lb HE unexploded bomb during excavation operations at a site in Thetford, Norfolk.



Close-up image of a British 500lb HE unexploded bomb found during Target Investigation at a site in Thetford, Norfolk.