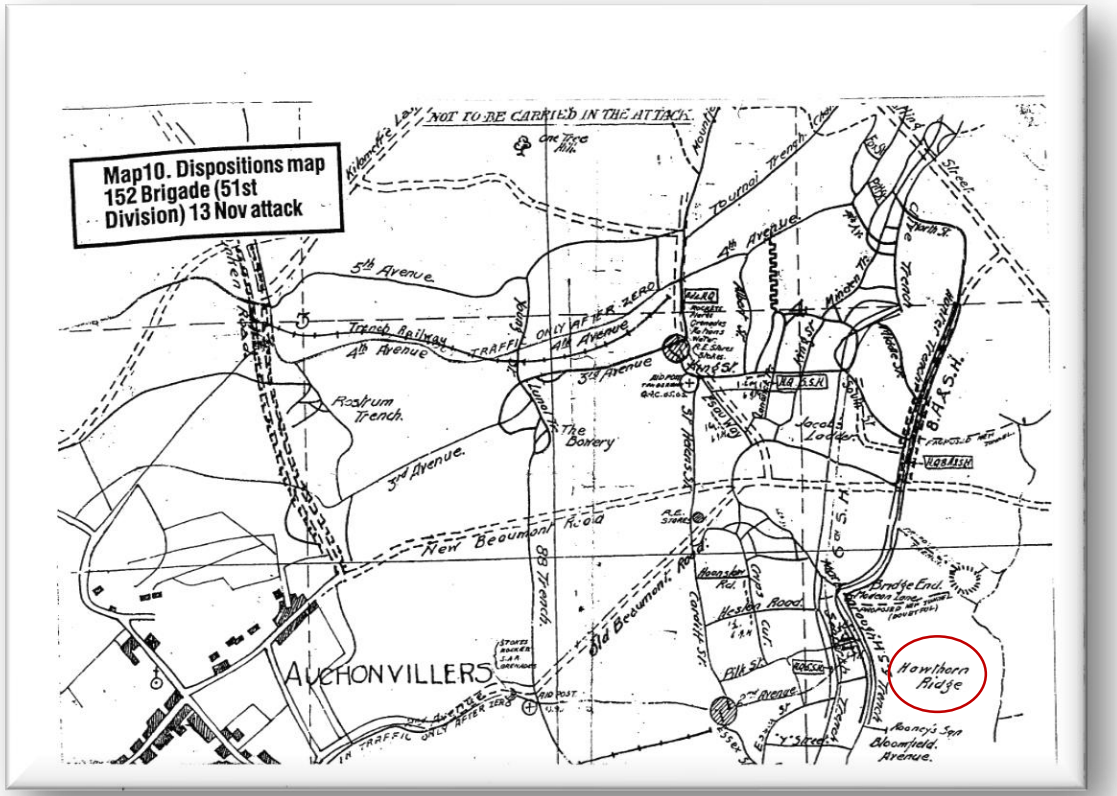
Infographic Summary of Work Conducted at the Hawthorn Craters During August 10-16th 2018



spheronvr

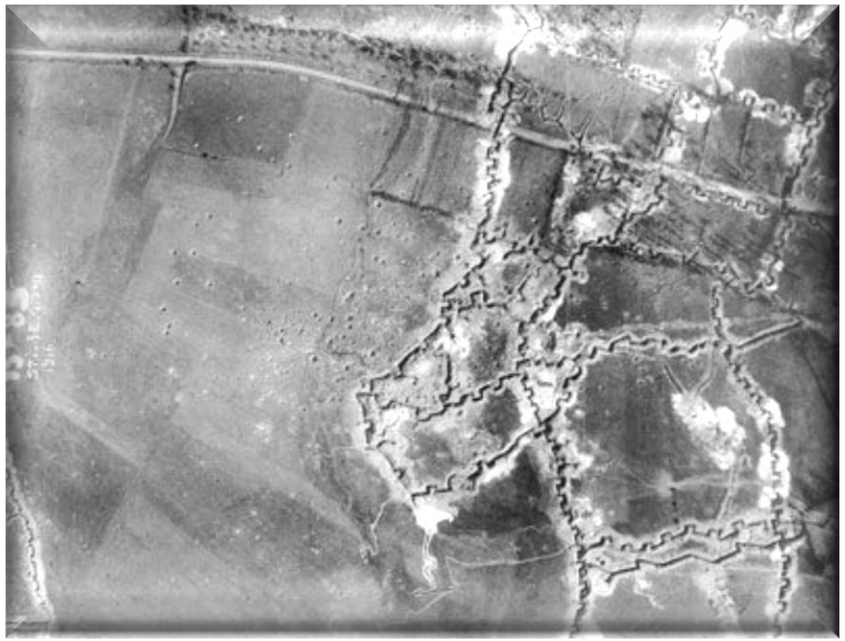
FARO

STAFFORDSHIRE UNIVERSITY

city of stoke on trent

UAV DYNAMIX

Keele University



Aerial map of trenches at Hawthorn Ridge Redoubt
24th April 1916

The Hawthorn Ridge Crater Association (HRCA) is pleased to announce its formation with the intention to support and develop the most intensive study of any Great War battlefield ever attempted.

"The association will be leasing the site from the owner, the local council, on a 99 year lease for 1 Euro symbolic. The objectives of the project are to improve the access for visitors, manage the upkeep, and protect the site for future generations whilst providing a detailed study of the area with partner organisations.

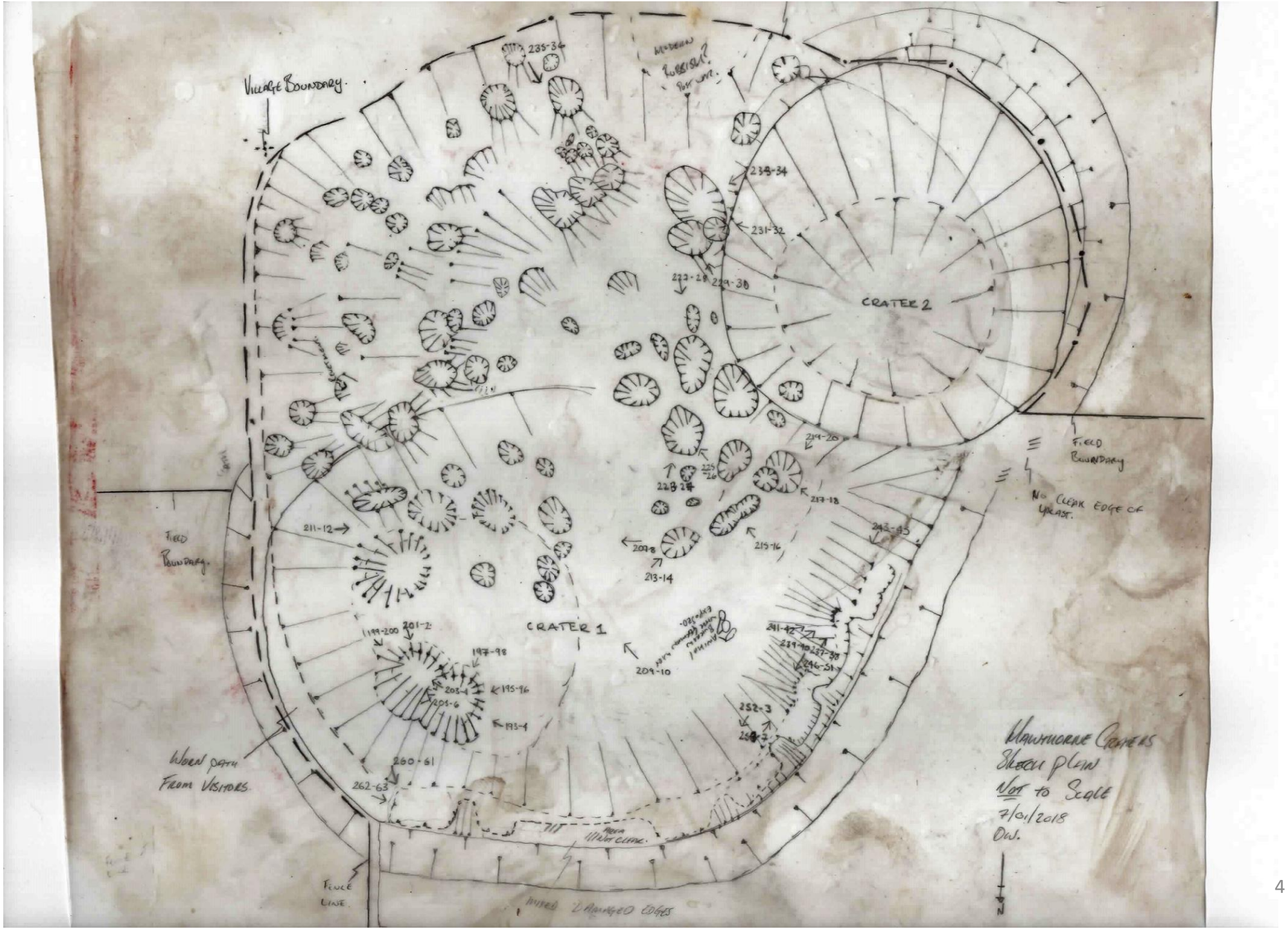
Working within a defined boundary of the Beaumont-Hamel area, an international team of experts and volunteers will conduct a programme of research using all sources of evidence to create an in-depth archive of material devoted the battlefield of 1914-18, post-war reconstruction, the impact of the Second World War and modern tourism.

The Hawthorn Ridge Crater Association is a Franco-British collaboration based in France and founded on the French law of an association 1901. It is supported by Keele and Staffordshire Universities in the U.K, and using the services of experienced Great War archaeologists and historians.

The explosion of the mine under Hawthorn Ridge was the very first action of The Battle of the Somme. It was recorded by Geoffrey Malins at 7.20am on the 1st July 1916 and is one of the best-known pieces of film of the Great War. The mine was blown for a second time on the 13th November when the 51st Highland Division captured the ridge and village. The project study is initially looking at the period between these events from both sides of No Man's Land, giving a German perspective to our understanding. The central hub of the project will be web based and form a virtual resource freely available via the Internet."

Work conducted during August 10-16th 2018

1. FARO laser scanning of craters.
2. Spheron 360^0 photogrammetric scanning of craters.
3. Fixed wing & Quadcopter Drone flights - multispectral and hyperspectral imaging.
4. Archaeological investigation of 2 potential fire-bays structures [see slide 6].
5. Factual production and digital archive of all work.
6. Soil collection for metals analysis from surrounding *West* field.
7. Previous visit by Keele University involved; resistivity, magnetic susceptibility, conductivity.
8. Creation of \ protype Website for dissemination of findings
9. Two *Erasmus funded students* – one working in the museum and one with the factual production and digital archive.
10. Developing community relations with local villagers and wider community involvement talking to the public.



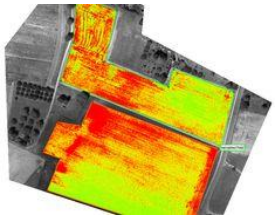
Created
by Dane Wright
January 2018

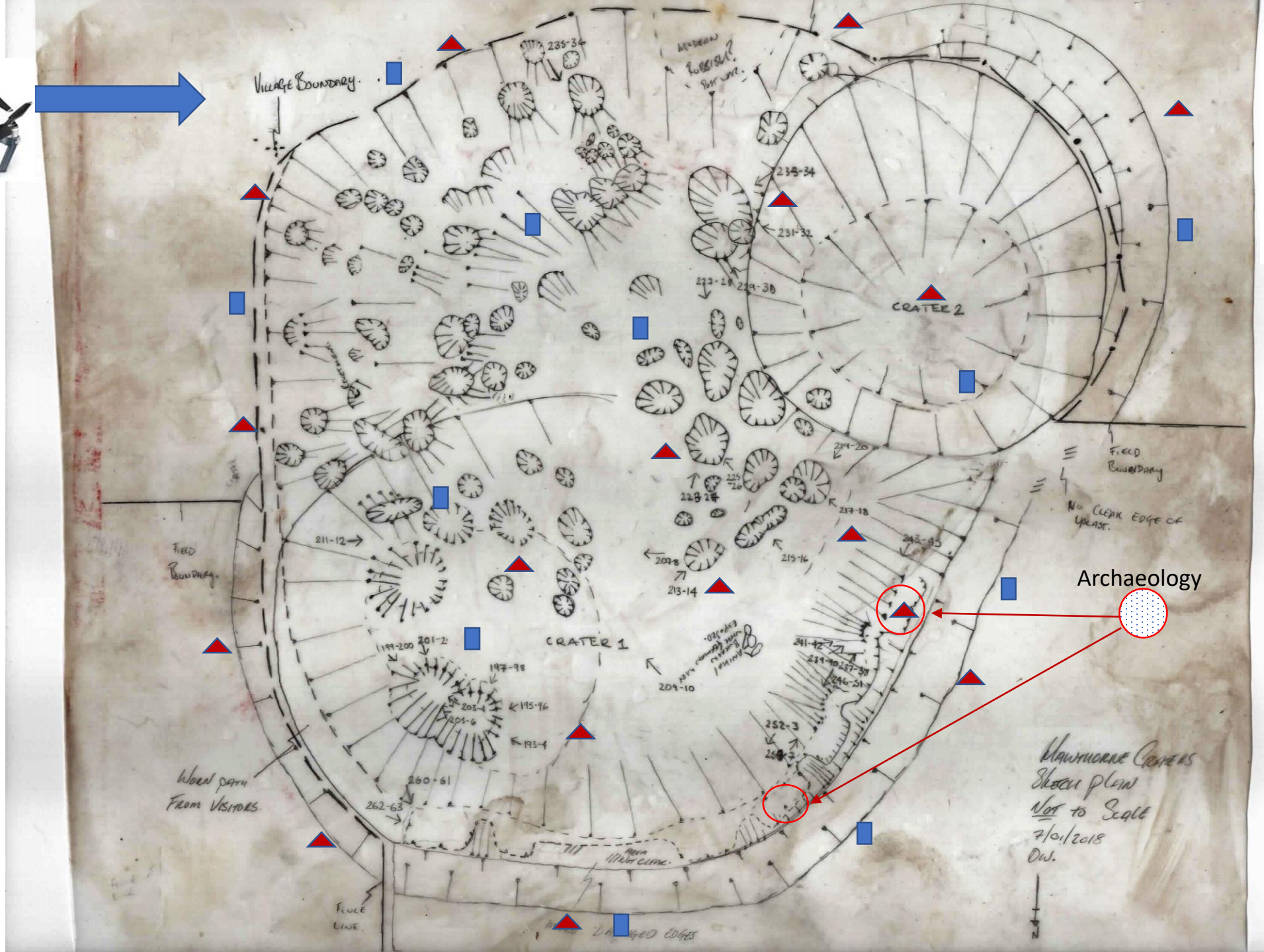
Drones

DJI Mavic Pro 4K Quadcopter

SenseFly eBee fully autonomous mapping drone

Drone Techniques





FARO laser Scanning
– approx. locations

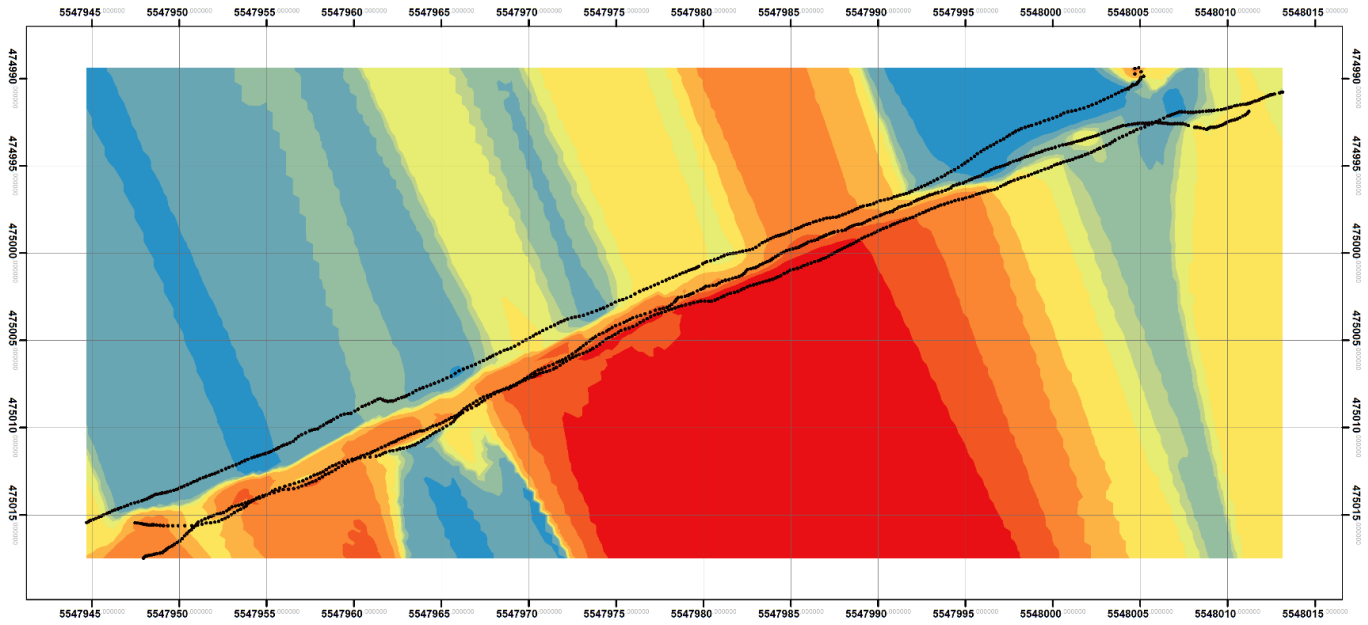
Spheron Scanning
– approx. locations

Also at:
Sunken Lane & at Malins viewpoint

Archaeology

- To be completed

Geophysics



- Please refer to Appendices for report

- Currently to be treated as ***Confidential and embargoed data*** as it forms part of a student assessment and is copyright to the student

We spent four days on site and opened two slots on the rim of the Crater. See attached plan by Dane from the January project.

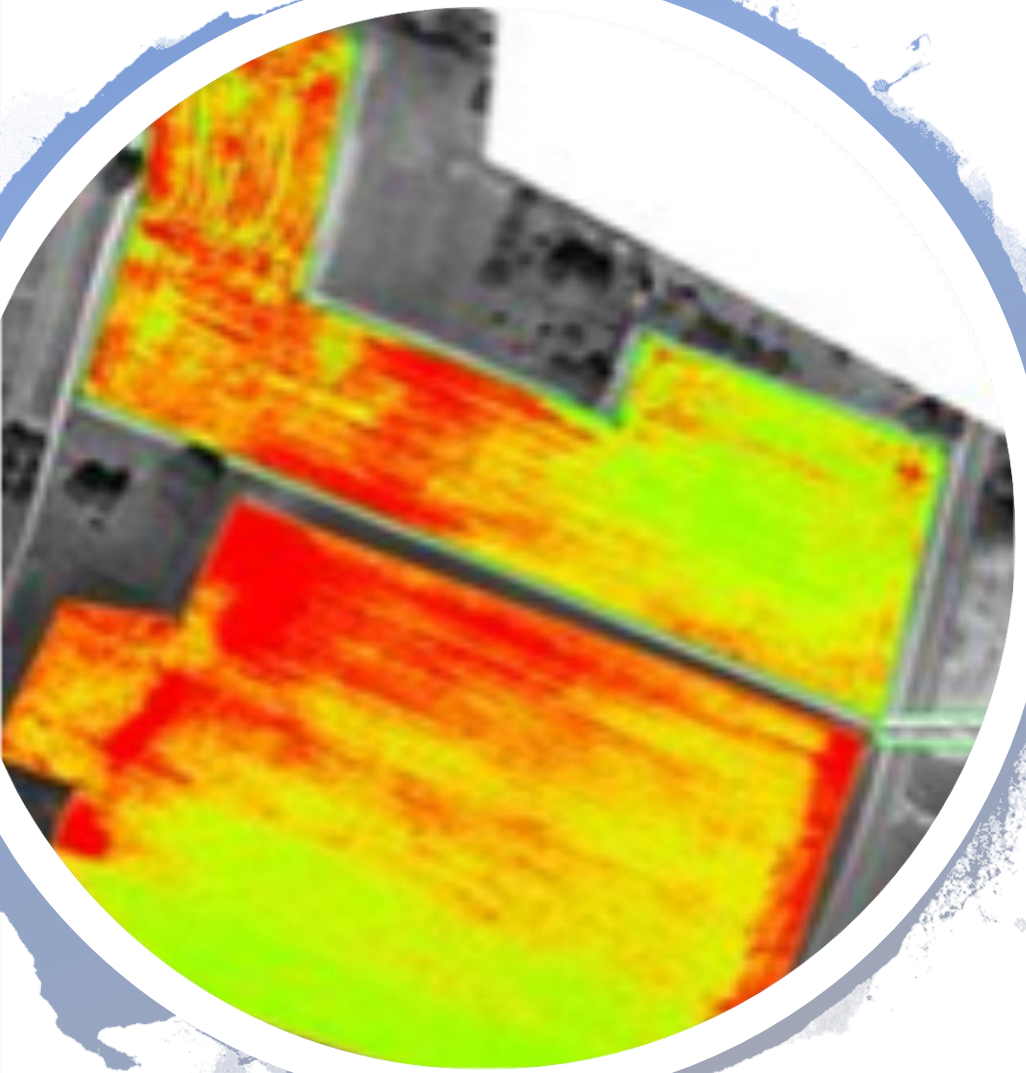
The first exploration was over what looked to be a German fire trench built after the 1st July 1916 to reinforce the position against future attack. This turned out to be the case and although there were few finds the use of German tactical doctrine is clear. Location was Eastern quadrant. 243.45

The second was place on the North East quadrant and we hoped to find the junction of the Crater edge with the British communication trench dug subsequent to the 13th November attack. This was found and although not bottomed it was remarkable bit of judgement/luck to find this position. 252.3. See November 1916 map. Labelled as 'Proposed trench'.

Both areas are not back filled to discourage metal detectorists.
We are planning to return before Christmas and in the New Year.

Full report follows.

Andy Robertshaw August 18th 2018

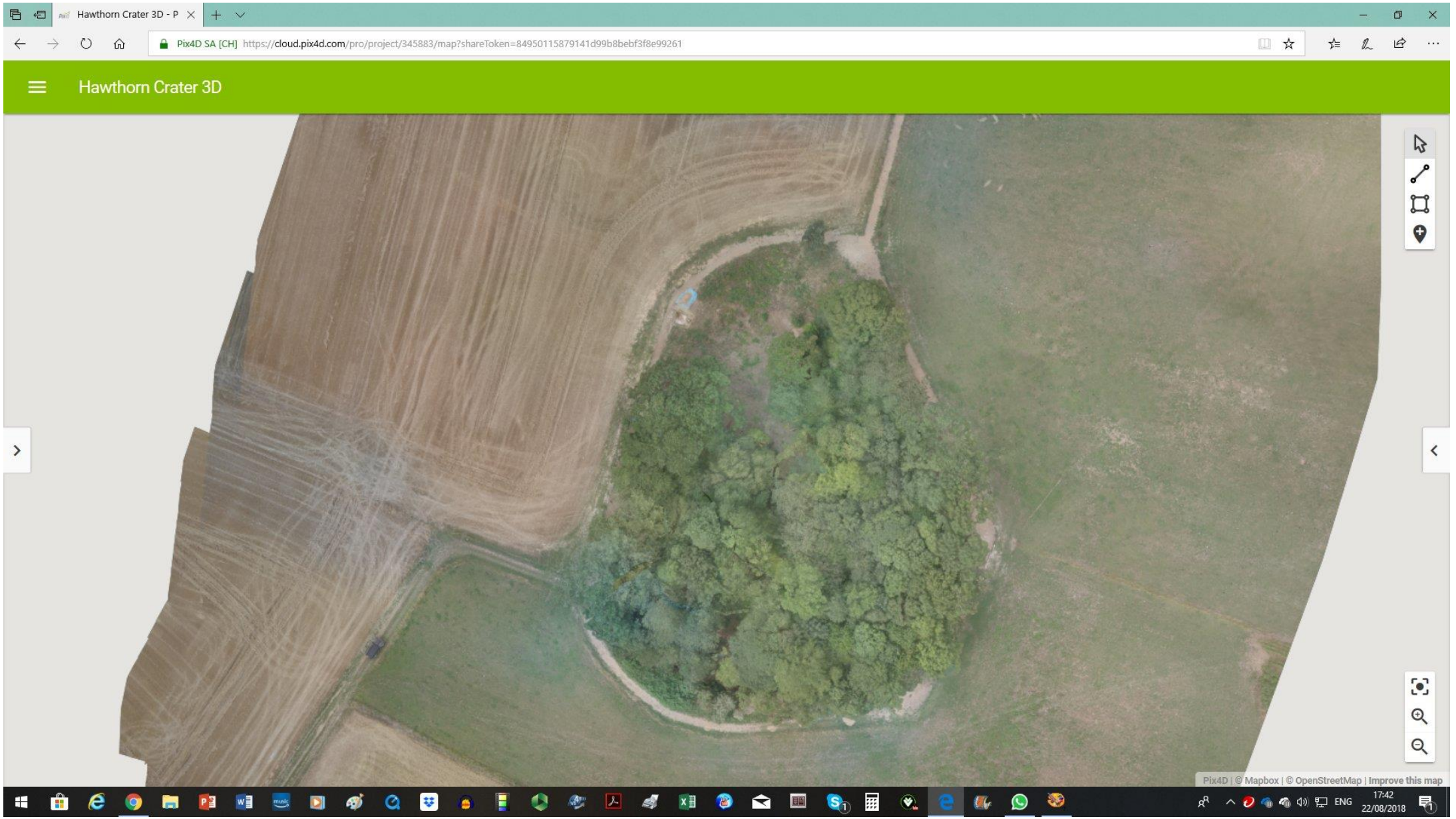


Multispectral Imaging –

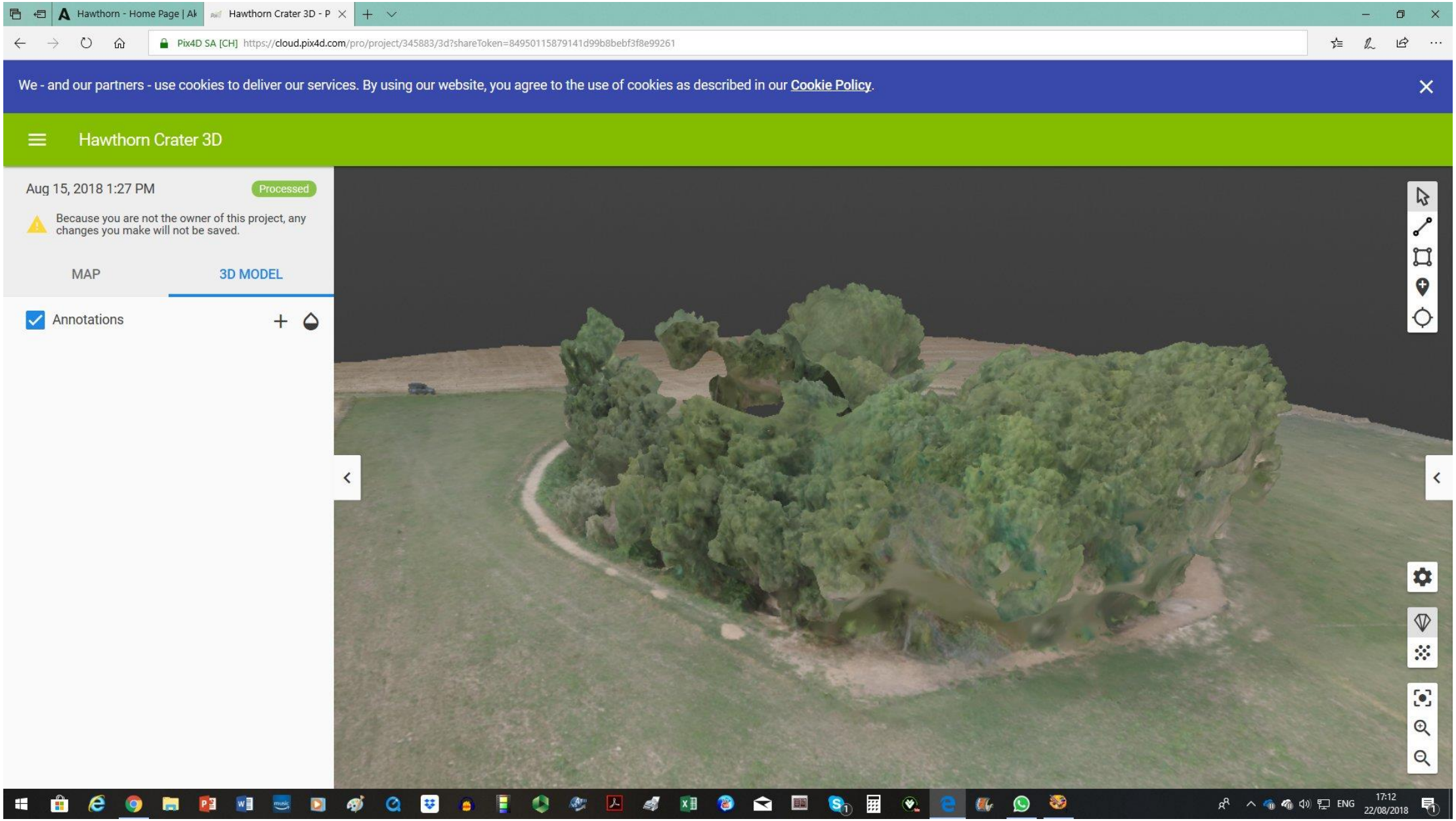
data currently being processed in Switzerland by a colleague of Adrian Heili

- A multispectral image is one that captures image data within specific wavelength ranges across the electromagnetic spectrum. The wavelengths may be separated by filters or by the use of instruments that are sensitive to particular wavelengths, including light from frequencies beyond the visible light range, i.e. infrared and ultra-violet. Spectral imaging can allow extraction of additional information the human eye fails to capture with its receptors for red, green and blue

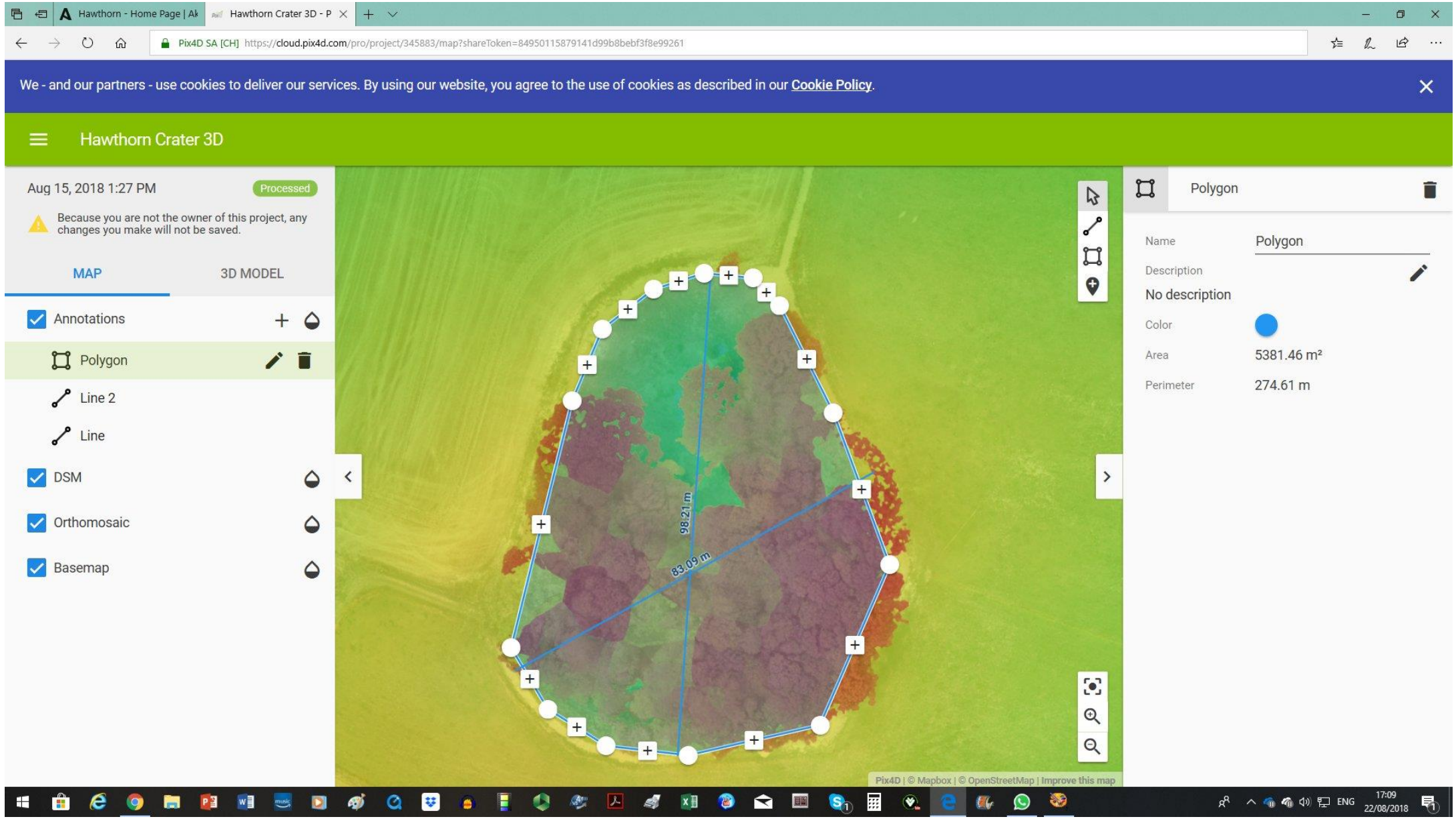
Provisional Drone Data #1



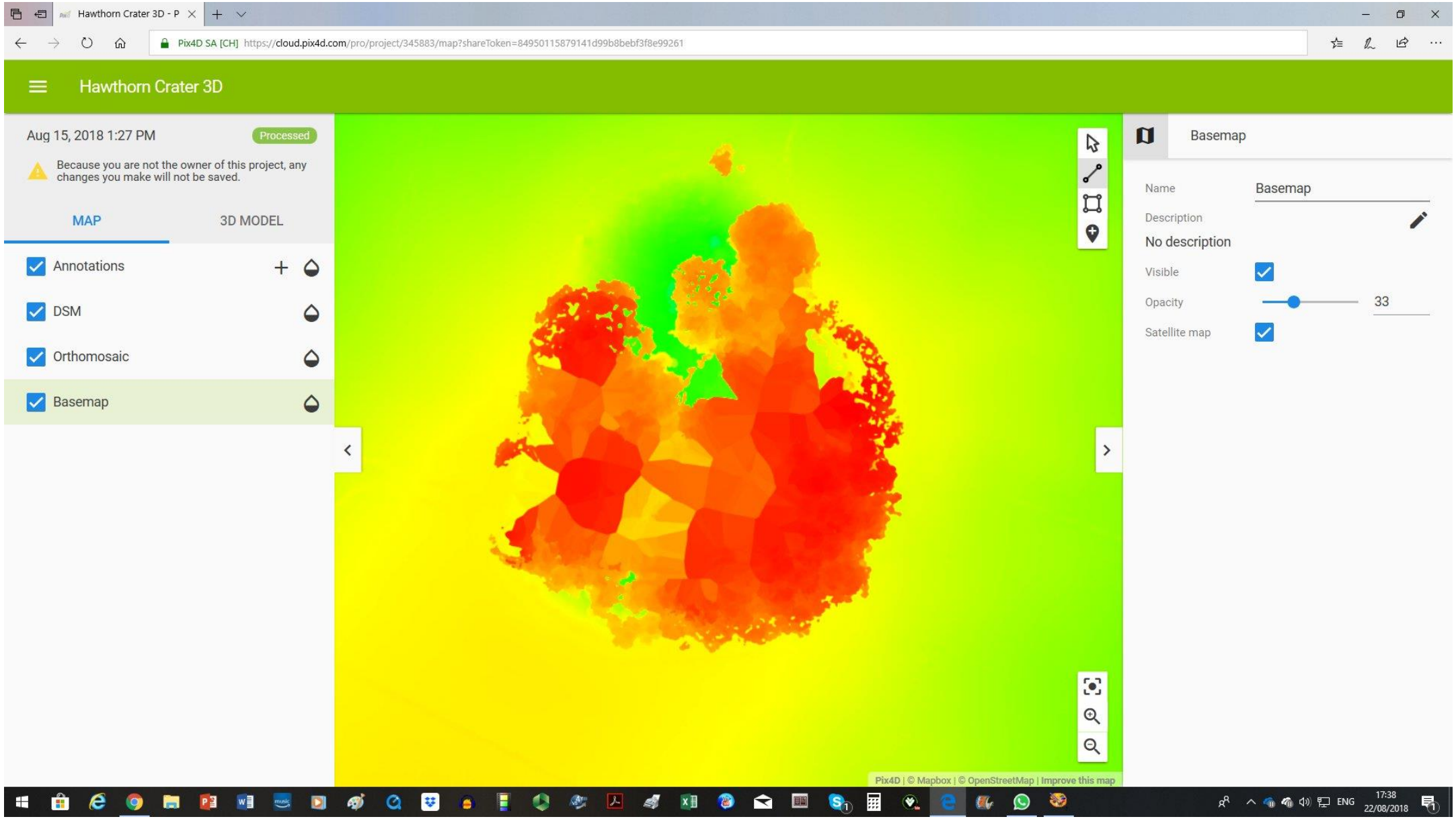
Provisional Drone Data #2



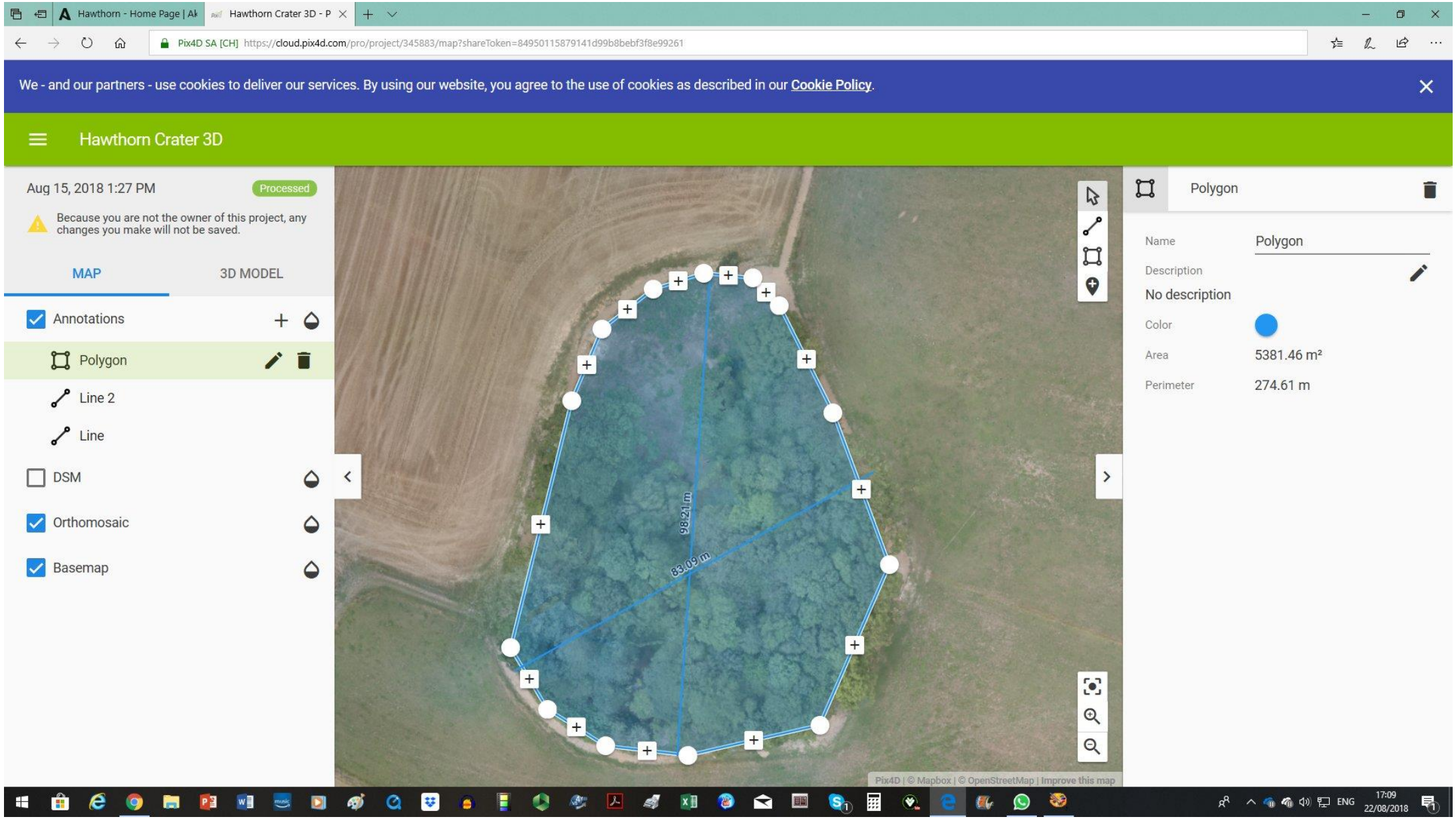
Provisional Drone Data #3

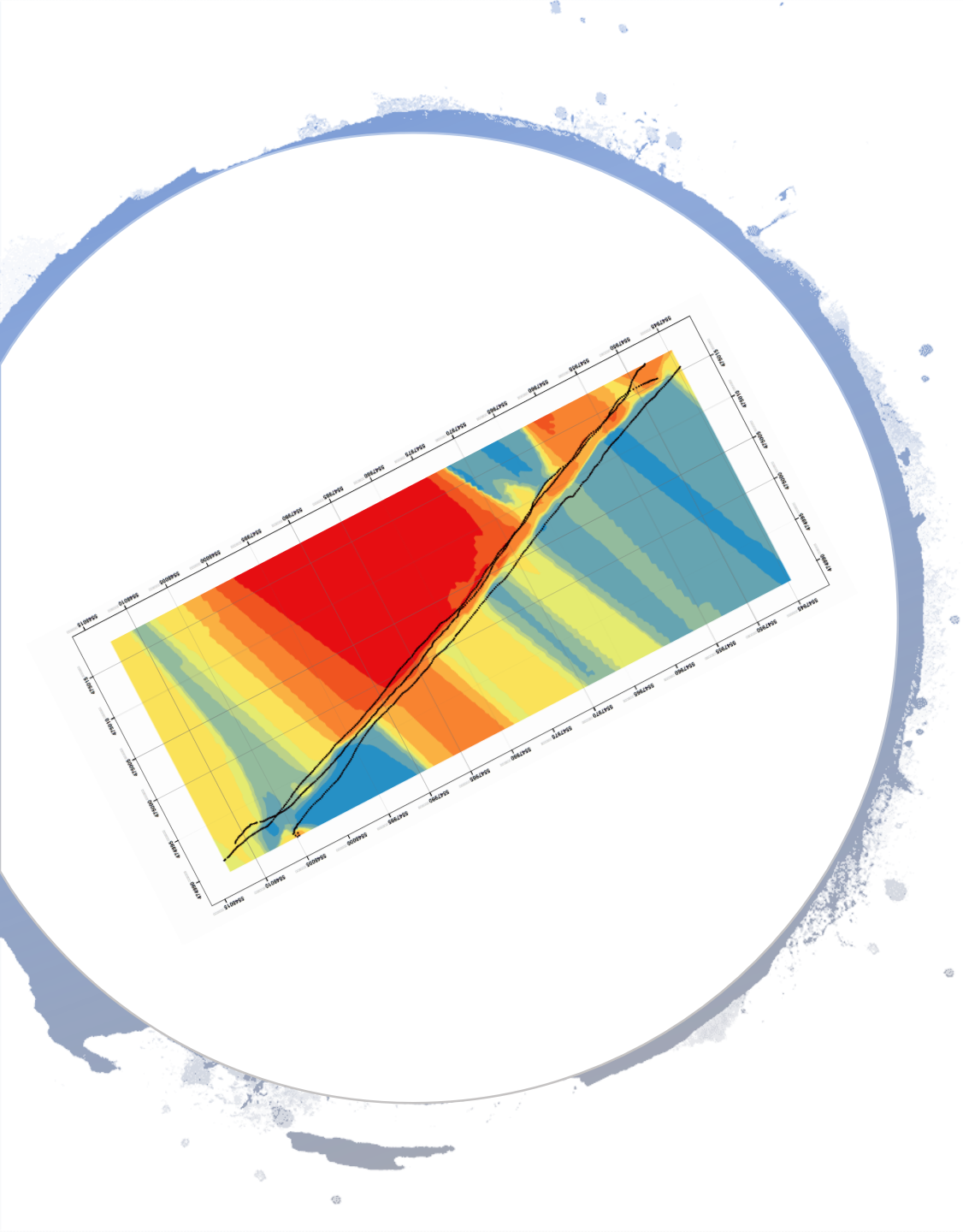


Provisional Drone Data #4



Provisional Drone Data #5

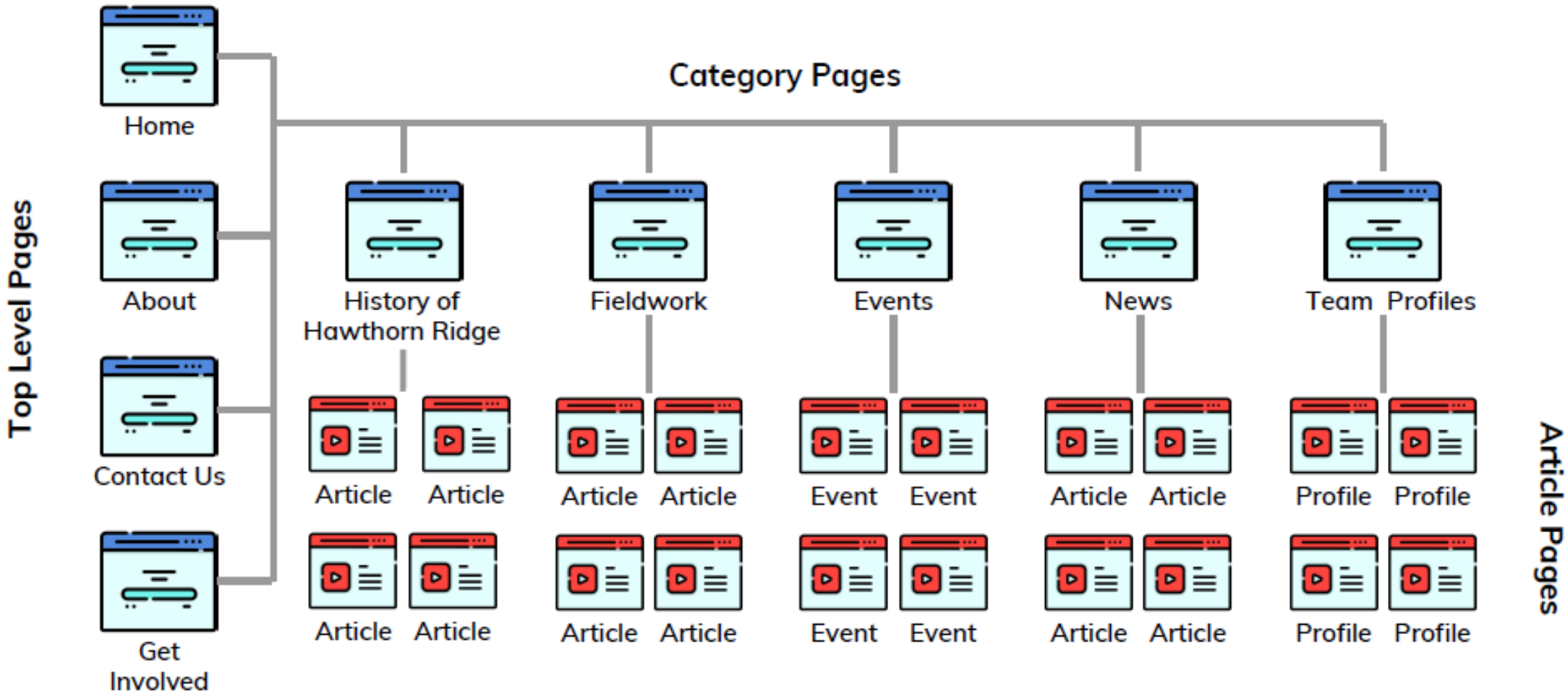




Data from *all* techniques is currently being processed and collated

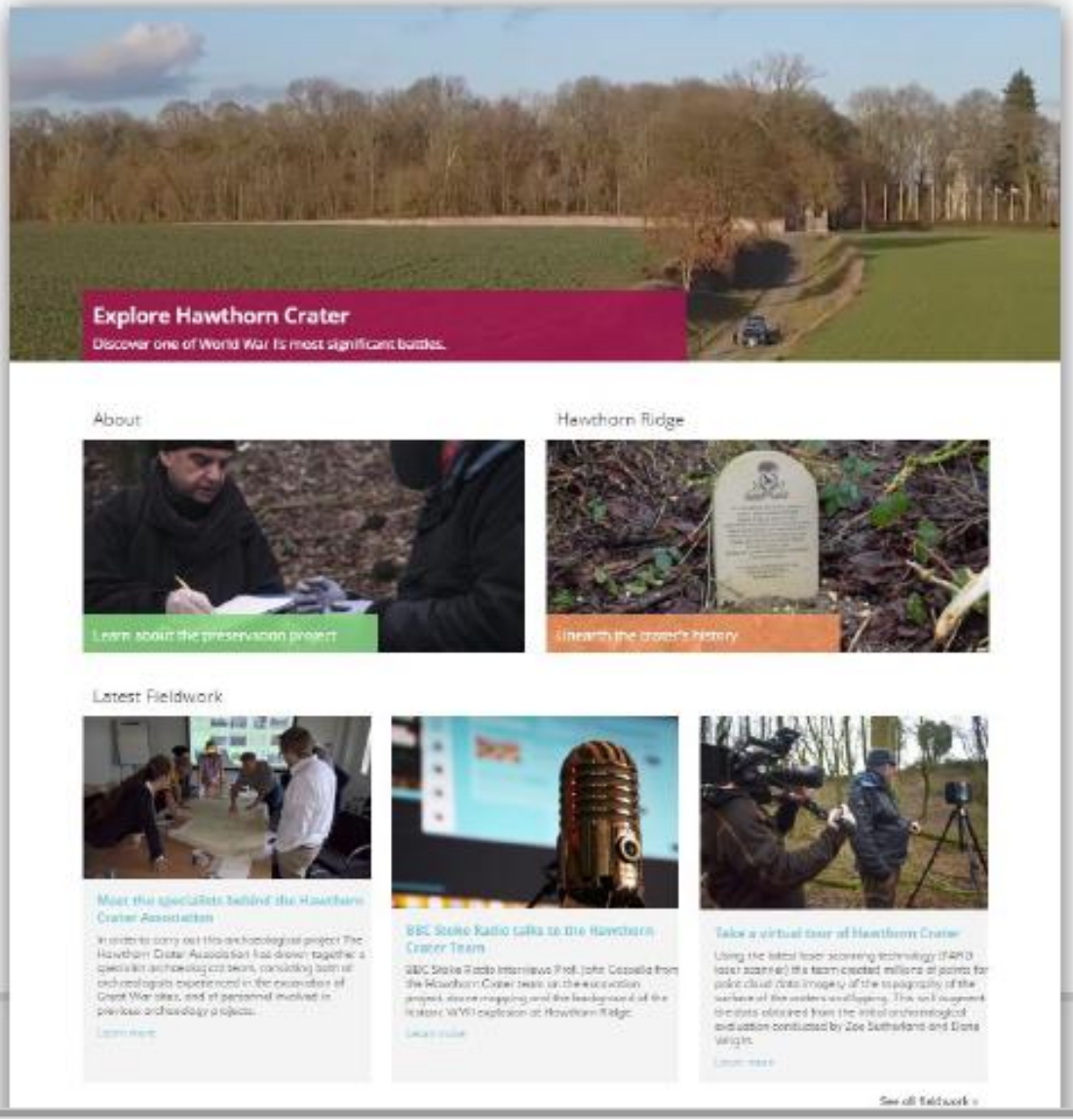
Website for the Beaumont Hammel Project

Proposed Site Structure



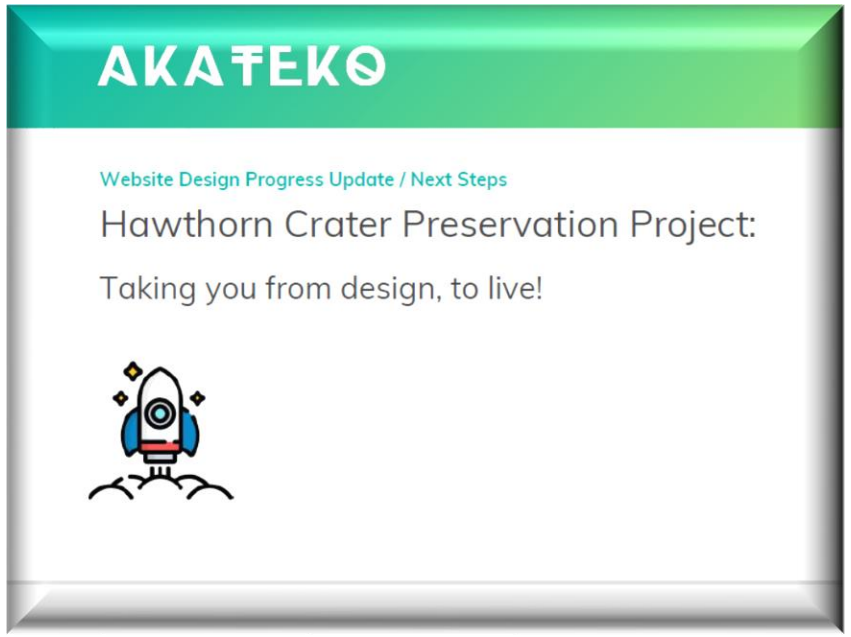
Website for the Beaumont Hammel Project

Home Page



1. Links to all category pages
2. Showcase highlights within each category
3. Potential to embed live Twitter and Instagram feed

>> Visit Home Page



Test (non-live) web page links [click to acces]

https://akatekohq.com/hawthorn-home

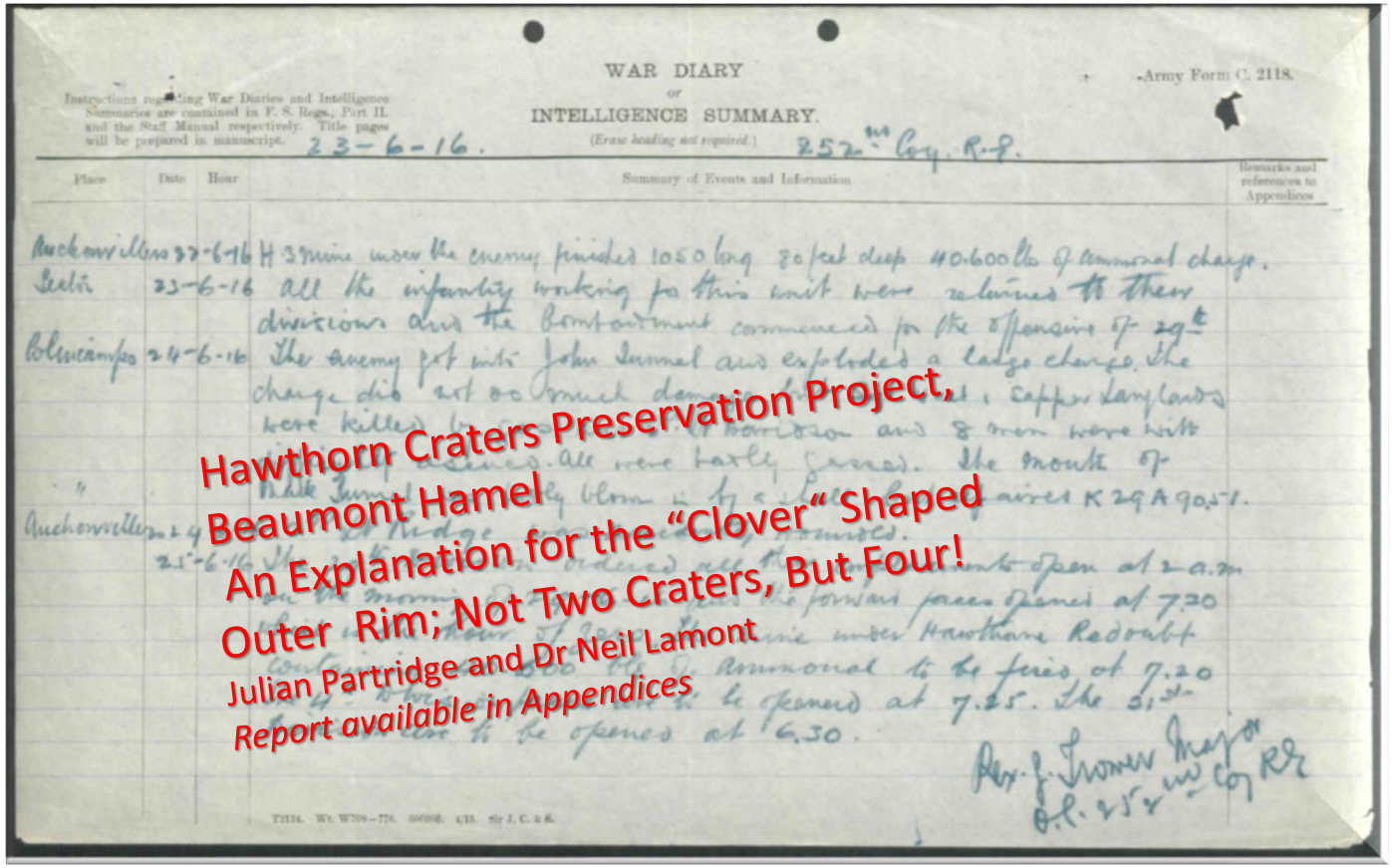
https://akatekohq.com/hawthorn-category-landing-page

https://akatekohq.com/hawthorn-article-page

https://akatekohq.com/hawthorn-article-page-2

https://akatekohq.com/hawthorn-article-page-3

Ongoing Theories/Aspects to consider….



WAR DIARY
or
INTELLIGENCE SUMMARY.

Army Form C. 2118.

Instructions regarding War Diaries and Intelligence Summaries are contained in F. S. Regs., Part II. and the Staff Manual respectively. Title pages will be prepared in manuscript.

(Erase heading not required.)

23-6-16. 252nd Coy. R.E.

Place	Date	Hour	Summary of Events and Information	Remarks and references to Appendices
Auchonvillers	23-6-16		H 3 mine under the enemy finished 1050 long 80 feet deep 40,600 lbs of ammonal charge.	
Beth	23-6-16		all the infantry working for this unit were relieved by their divisions and the bombardment commenced for the offensive of 29th	
Bolweampes	24-6-16		The enemy got into John Sunnal and exploded a large charge. The charge did not do much damage [illegible] Sapper Langlands were killed [illegible] morrow and 8 men were with [illegible] all were badly gassed. the mouth of [illegible] K 29 A 90.5-1.	
Auchonvillers	24-6-16		[illegible] to be opened at 2 a.m. [illegible] forward faces opened at 7.20 [illegible] under Hawthorn Redoubt [illegible] Ammonal to be fired at 7.20 [illegible] to be opened at 7.25. The 51st [illegible] to be opened at 6.30.	

Maj. J. Glover Major
O.C. 252nd Coy RE

T2134. Wt. W708—776. 500m. 4/15. Sir J. C. & S.

Hawthorn Craters Preservation Project,
Beaumont Hamel
An Explanation for the "Clover" Shaped
Outer Rim; Not Two Craters, But Four!
Julian Partridge and Dr Neil Lamont
Report available in Appendices

252nd Tunnelling Company, Royal Engineers war diary, purchased from the National Archives, WO-95-406-3, and contain relevant information concerning the North and South Craters at Hawthorn ridge.

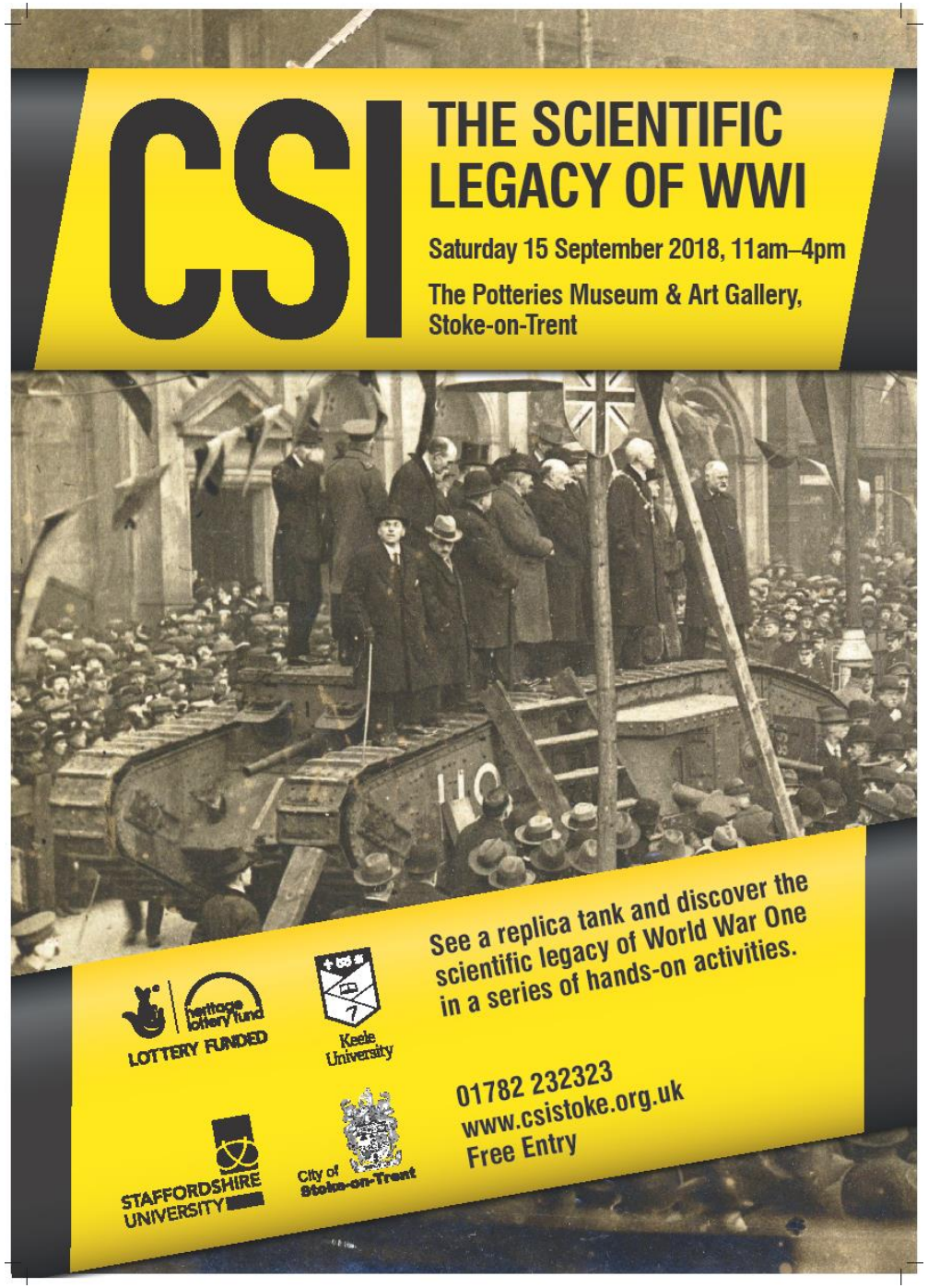
An initial evaluation of surface soil samples obtained from the Hawthorn Craters in January 2018

By Neil Lamont and Julian Partridge

Report available in Appendices

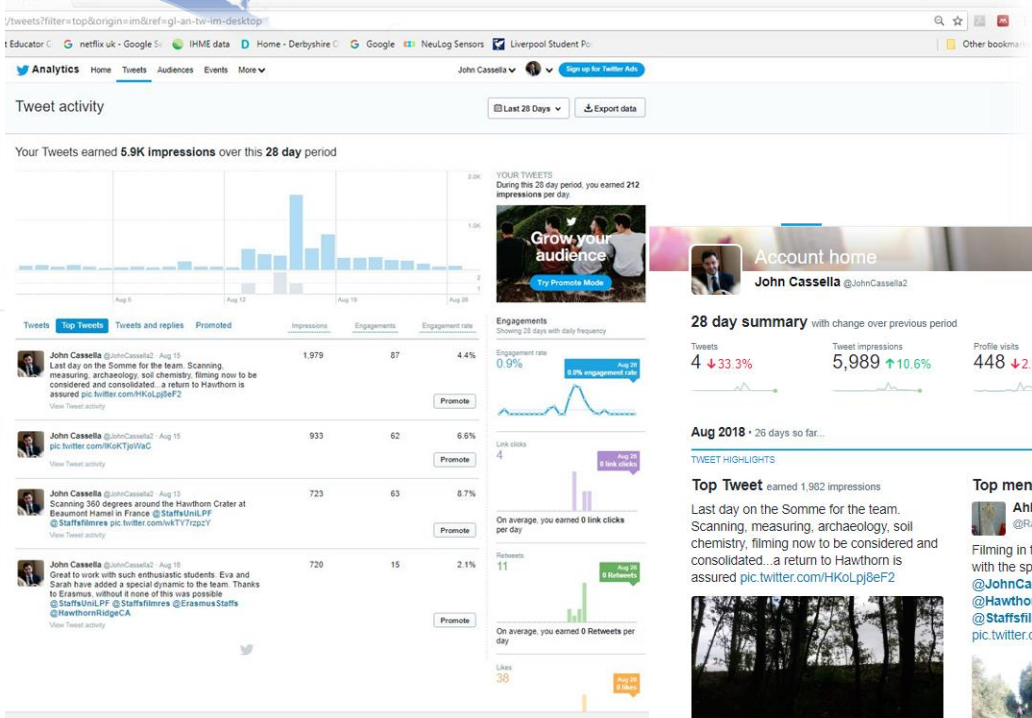
'Aluminium concentrations within the crater ranged between 8,342 to 19,555 mg/Kg and for lead 16.85 mg/Kg to 87.72 mg/Kg meaning that further assessment of the site is warranted'

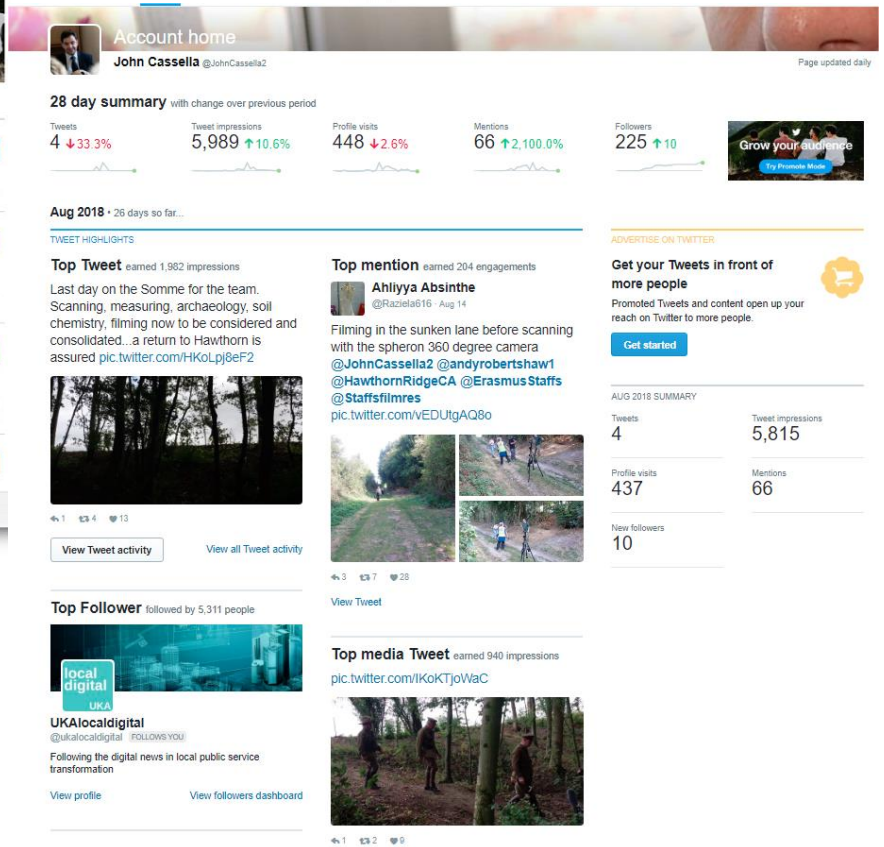

Public Lecture
Hawthorn: A Tale of Two Craters, Battle of the Somme
A multi-disciplinary investigation
By The Hawthorn Crater Preservation Project team
This unique environment marks the only site to have been blown up on two separate occasions marking the beginning and the end of the Battle of the Somme. The first mine explosion in July 1916, is the only one ever filmed. 100 years after the First World War, this world first is only now being investigated by a multi-disciplinary team of historians and scientists.
Wednesday 2 May
5 - 6:30pm
Science Centre, Lecture Theatre R001,
Leek Road, University Quarter,
Stoke-on-Trent, ST4 2DF
WINNER THE AWARDS 2017
Most Improved Student Experience
Staffordshire University
TEF
Silver
STAFFORDSHIRE UNIVERSITY
THE CONNECTED UNIVERSITY
For more details and to reserve your place: e: J.P.Cassella@staffs.ac.uk

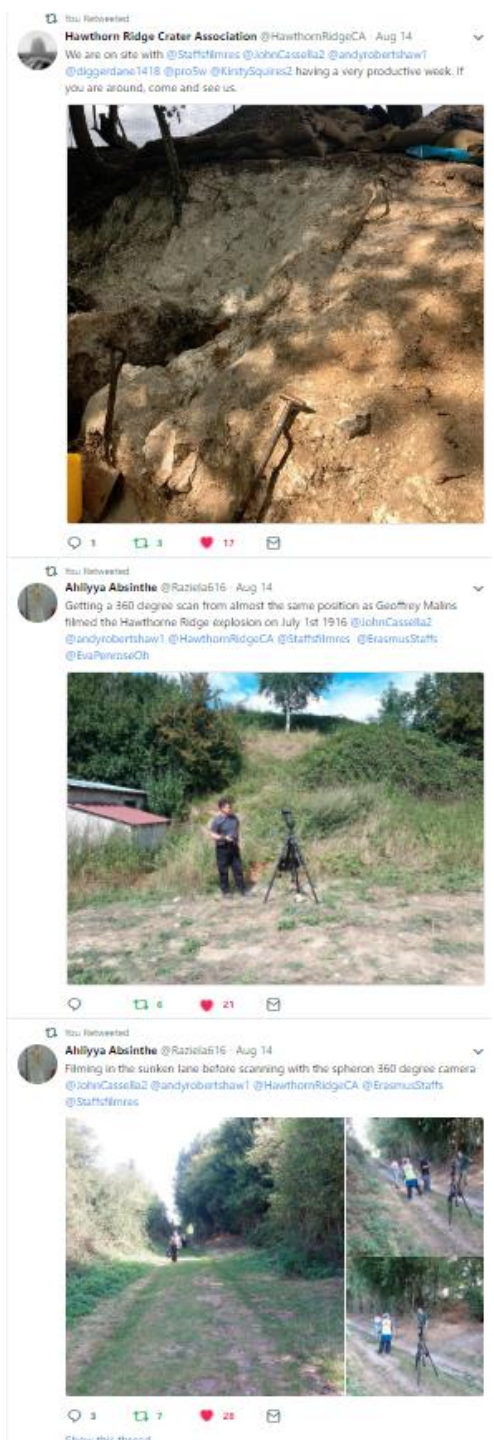


Public lecture given at the Potteries Art Museum and Gallery, Hanley,
Stoke on Trent, UK
15th September 2018

Social Media – metrics

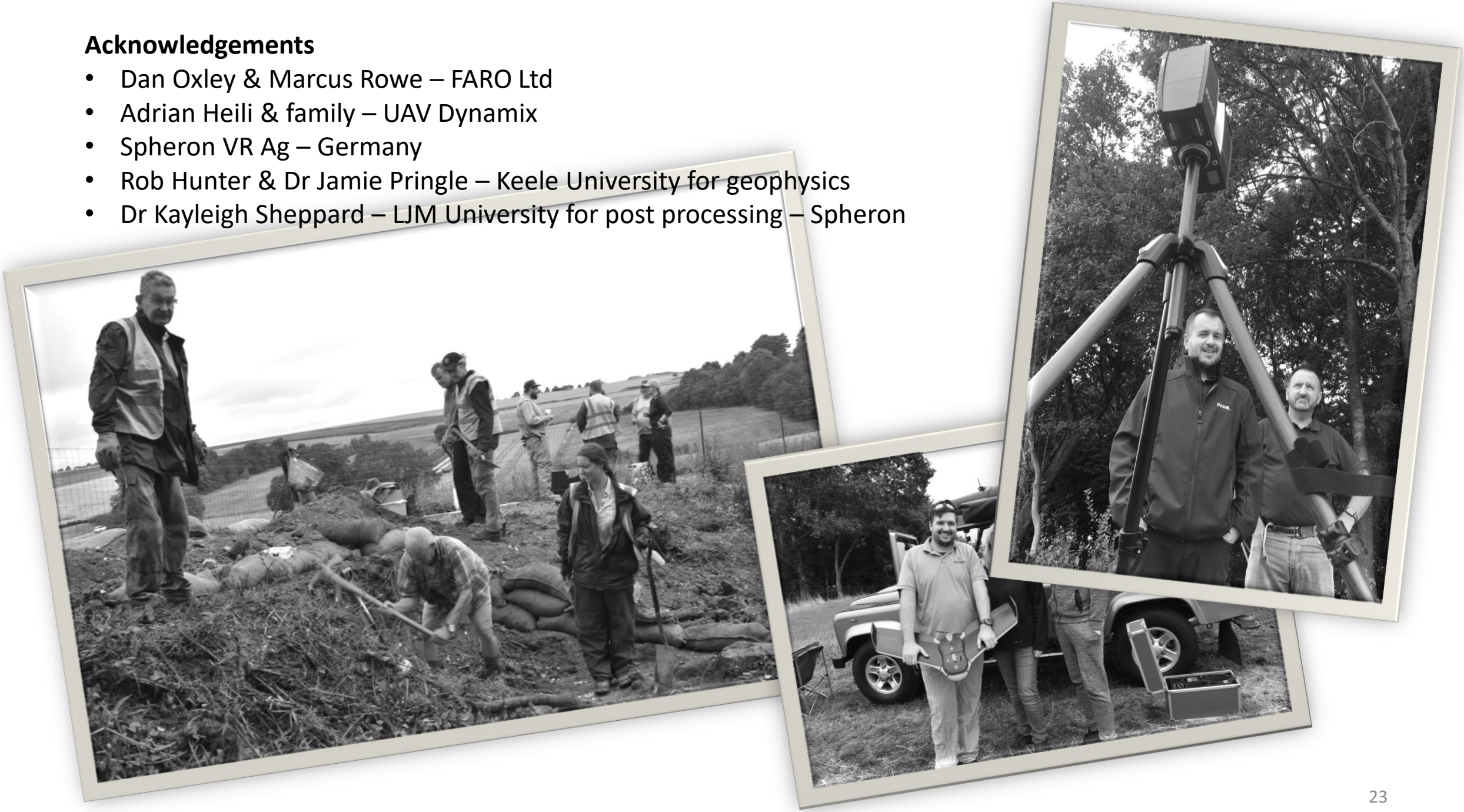






Acknowledgements

- Dan Oxley & Marcus Rowe – FARO Ltd
- Adrian Heili & family – UAV Dynamix
- Spheron VR Ag – Germany
- Rob Hunter & Dr Jamie Pringle – Keele University for geophysics
- Dr Kayleigh Sheppard – LJM University for post processing – Spheron



Appendices

- SceneCenter_forensic_2.0 brochure
- Spheron SceneCam_2.0 brochure
- FARO X-330 brochure
- eBeePlus_EN brochure
- MSc report from Rob Hunter – Dr Jamie Pringles student
- An initial evaluation of surface soil samples obtained from the Hawthorn Craters in January 2018 - Neil Lamont and Julian Partridge
- Hawthorn Craters Preservation Project, Beaumont Hamel

An Explanation for the “Clover“ Shaped Outer Rim; Not Two Craters, But Four!

Julian Partridge and Neil Lamont