Campden BRI group:
Campden BRI (registered no. 510618)
Campden BRI (Chipping Campden) Limited (registered no. 3836922)
Campden BRI (Nutfield) (registered no. 2690377)

Registered office:
Station Road ◆ Chipping Campden ◆ Gloucestershire ◆ GL55 6LD ◆ UK

Confidential report for:

Campden BRI
FAO: Microscopy Section
Station Road
Chipping Campden
Gloucestershire
GL55 6LD

Report on:

Examination of Suspected Glass Reported from Bulgar Wheat

Work performed by Campden BRI (Chipping Campden) Limited
Report number: MI/REP/181356-02565/1 ◆ Issue date: 1st March 2018

Contact details:

K. Hope ◆ Chemistry & Biochemistry ◆ Campden BRI (Chipping Campden) Limited
Kathryn.Hope@campdenbri.co.uk◆ Tel: +44(0)1386 842017

Report issued and authorised by:

Campden BRI (Chipping Campden) Limited

K.A. Hope (Microscopy Section Manager) ☐ Z. Larkins (Packaging Group Leader) ☐

G.E. Dale (Special Projects Group Leader) ☐

Our ref: Silicate Mineral Report
Page count: 8

[DC: R-AC-9-5-15: 09/13 (14) : R/MCE]

SAMPLE DETAILS

Initial Complaint Date:	21st January 2018
Batch No.:	25652313
Purchase Order No.:	25456253692

SAMPLE INFORMATION

Date sample(s) received	:	25th February 2018
Packaging	:	In a sample pot
Storage conditions	:	Ambient temperature
Date(s) sample(s) examined	:	28th February 2018

METHODS AND REFERENCES

Analyst reference	:	AJB	
Method reference(s)	:	TES-AC-192 :	Light Stereomicroscopy
		TES-AC-198 :	Scanning Electron Microscopy and X-ray Microanalysis
Deviations from the method reference(s)	:	None	

RESULTS

The complaint sample consisted of five very small pieces of clear, colourless material suspected by the client to be glass, which were photographed as received and can be referred to in Plate 1. The pieces had an organic appearance, with all surfaces appearing naturally formed.

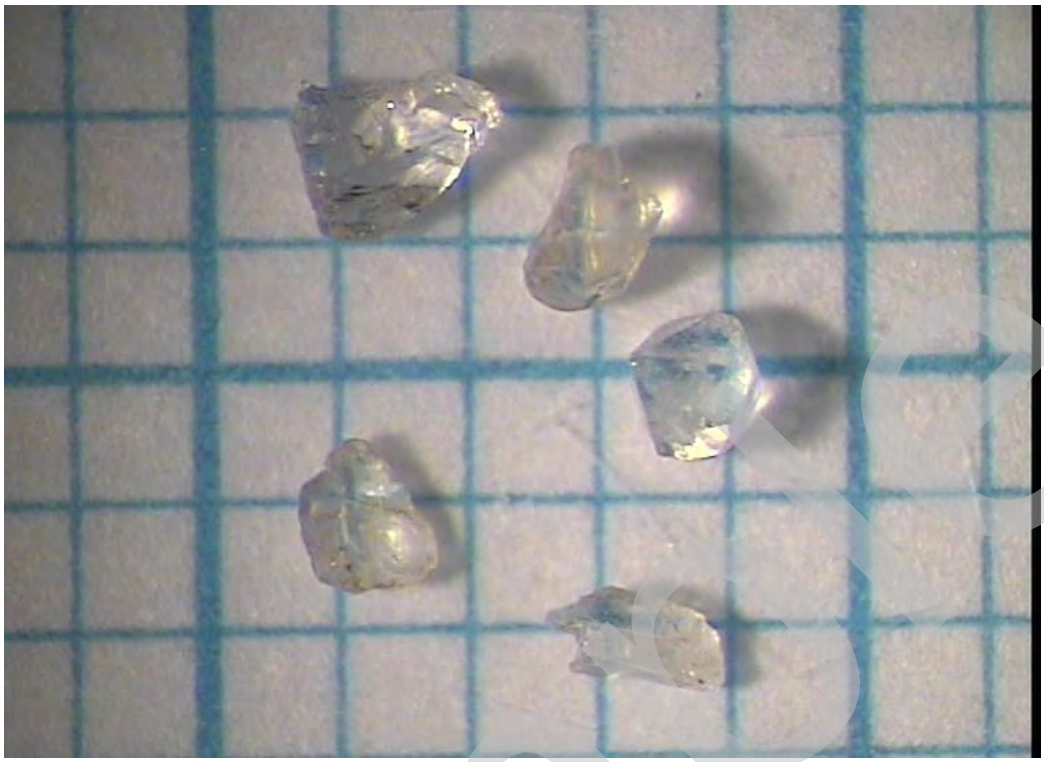
A small amount of cream-coloured surface deposit was seen adhered to the complaint sample, which was removed and examined under a compound microscope. Here it was possible to see ungelatinised wheat starch granules (Plate 2), cross cells (Plate 3) and aleurone cells (Plate 4), all of which are consistent with wheat.

X-ray microanalysis was performed on all five pieces of the complaint sample. Three produced spectra consistent with silicate minerals and two produced spectra consistent with alumino-silicate minerals. A representative spectrum of the silicate mineral and alumino-silicate mineral can be referred to in Figures 1 and 2 respectively.

CONCLUSIONS

It was concluded that the complaint material was not glass, but five very small pieces of silicate mineral and alumino-silicate mineral. Silicate minerals are very hard and abundant materials present in soil, which can become inadvertently associated with products through the harvesting process. Similarly, they can be accidently brought into homes/buildings from driveways/paths via footwear. The ubiquitous nature of stones meant that an exact source for the sample could not be determined. The surface deposit seen adhered to the complaint sample was consistent with the reported product.

PLATE 1 **Shows the complaint sample photographed as received against a millimetre-squared background**



Campden BRI (Chipping Campden) Limited – part of the Campden BRI group
Station Road◆Chipping Campden◆Gloucestershire◆GL55 6LD◆UK
Providing services under an ISO 9001 registered quality management system

PLATE 2 **Shows examples of the ungelatinised wheat starch granules under bright field light (top image) and under polarised light (bottom image), seen within the surface deposit adhered to the complaint sample. Magnification x 220**

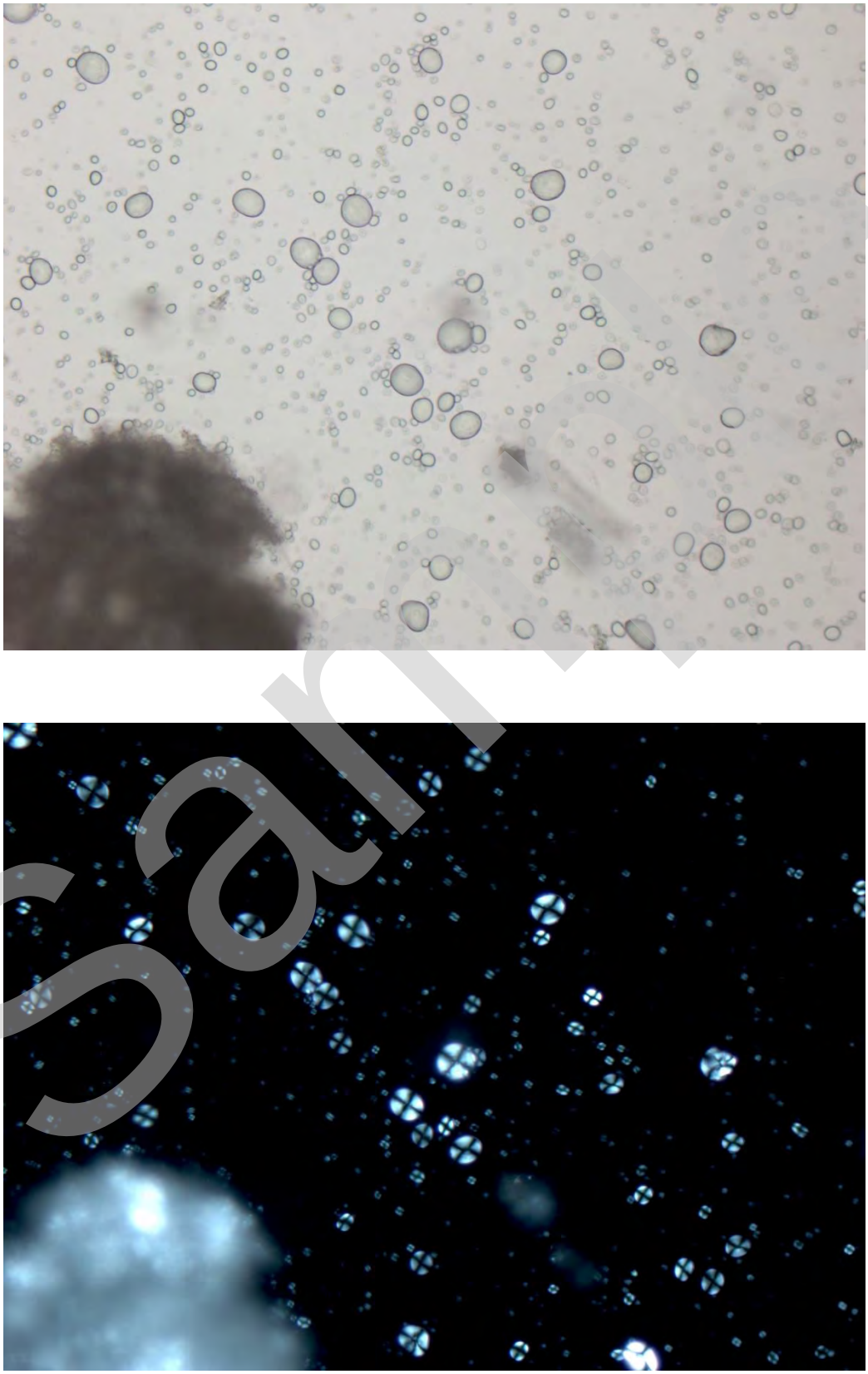


PLATE 3 **Shows an example of the cross cells, with characteristic beaded cell walls, seen within the surface deposit adhered to the complaint sample. Magnification x 435**

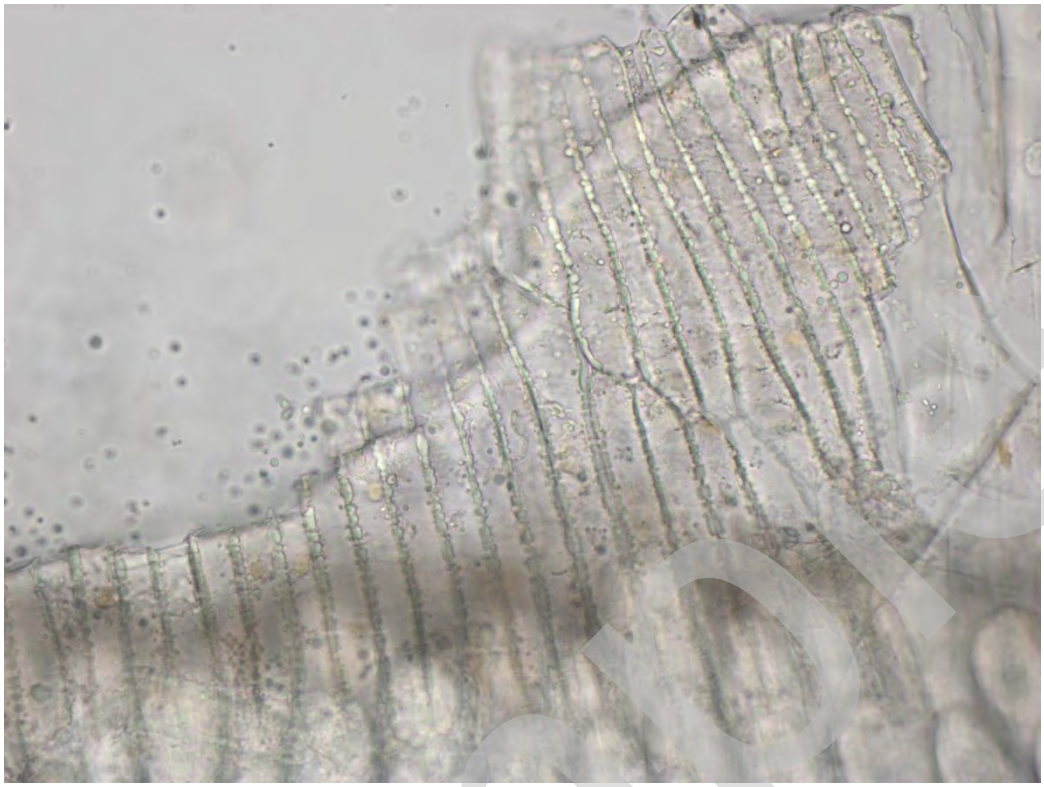
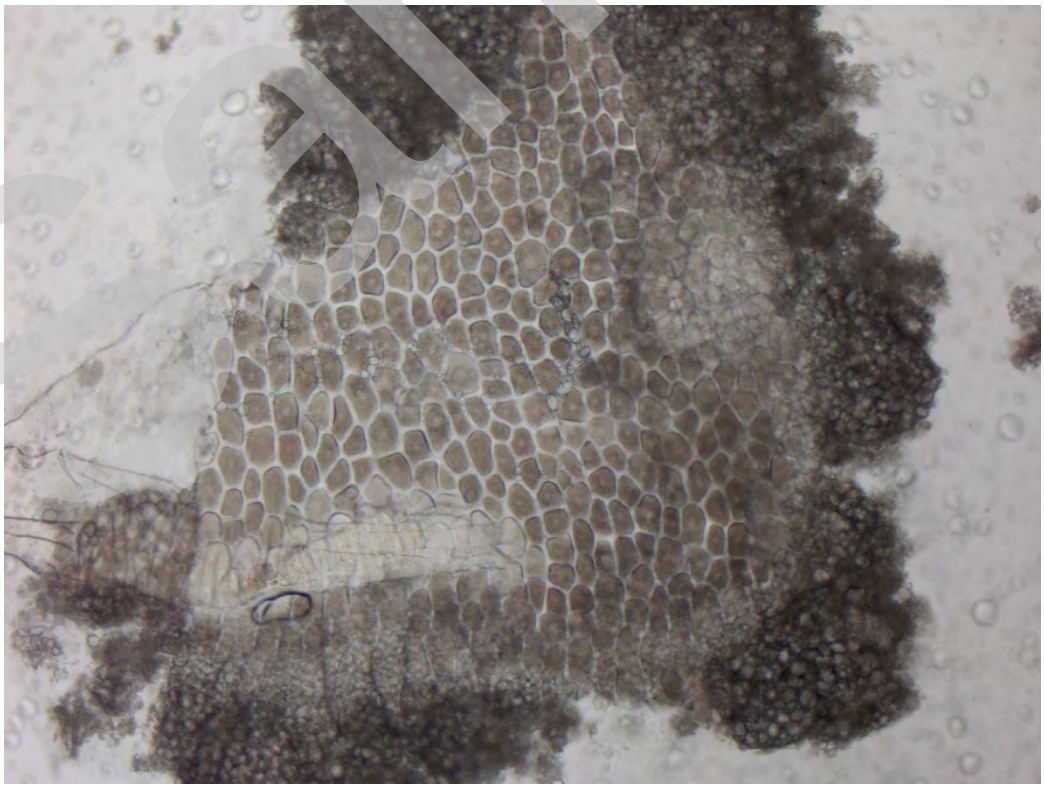


PLATE 4 **Shows an example of the aleurone cells seen within the surface deposit adhered to the complaint sample. Magnification x 109**



Campden BRI (Chipping Campden) Limited – part of the Campden BRI group
Station Road◆Chipping Campden◆Gloucestershire◆GL55 6LD◆UK
Providing services under an ISO 9001 registered quality management system

FIGURE 1

Foreign Body Analysis for Campden BRI

LIMS Project Number : 181356-02565
Spectrum of Silicate Mineral

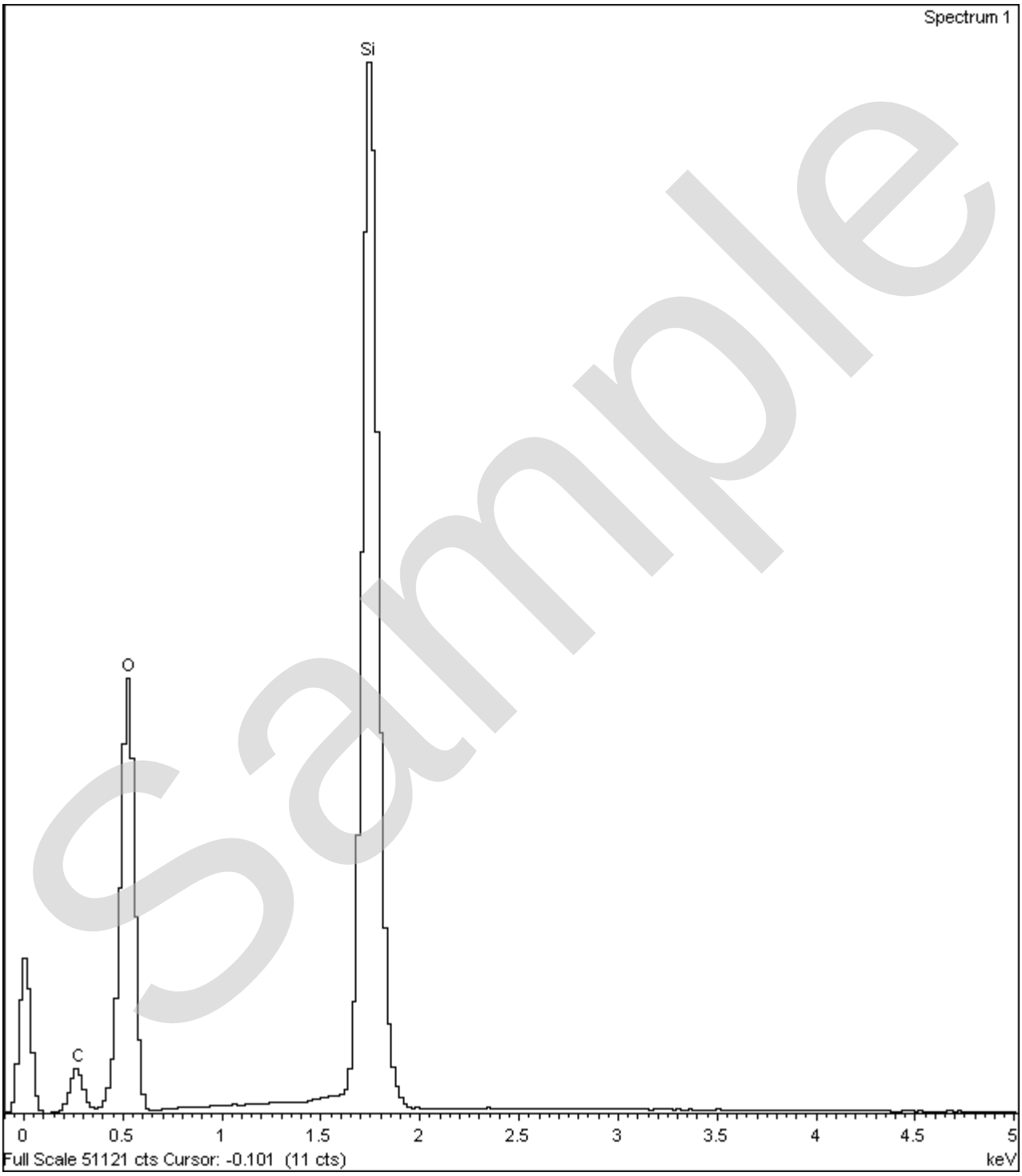


FIGURE 2

Foreign Body Analysis for Campden BRI

LIMS Project Number : 181356-02565
Spectrum of Alumino-silicate Mineral