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DEVIATING SAMPLE COMMENTS SWABS AND WATER SAMPLES

Clarification on the deviating sample comments applied to swab and water samples on certificate of analysis

We have received a number of queries relating to the deviating sample comments applied to swab and water samples and as a result the information below should give you further clarification.

It is a requirement of our quality management system (based upon the requirements of ISO 17025 - which underpins our UKAS accreditation), that samples identified as deviating must be highlighted on the certificate of analysis. UKAS guidance document TP63 clarifies that samples outside the accepted stability or maximum holding time are classified as deviating samples and that potentially results obtained from the analysis performed on these samples could be invalid.

Which swab and water samples are being marked as deviating?

Swab and water samples will be marked as deviating under two different sets of circumstances:

1. When swabs/water samples have been received by the laboratory more than 24 hours after being sampled. Or if the samples have been recieved within 24 hours but the testing commenced after 24 hours
2. If the sampling time/date information is unknown.

Why are swab samples being marked as deviating?

The International Standard method (ISO 18593:2018 Methods for surface sampling) used as the reference source states that *"swab samples should preferably be examined within 24 hours of sampling. If testing is delayed after receipt in the laboratory, the samples shall be stored at 3 °C ± 2 °C for a maximum of 48 hours from sampling."* ALS will be basing the deviating comments on the "preferable" 24 hours.

This time is based on scientific research data which demonstrates that the relative proportions of microorganisms can change over time. When swabs are not processed within 24 hours after being sampled some strains of microorganisms may die while others may grow.

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Why are Water samples being marked as deviating?

The Microbiology of Drinking Water (2010) - Part 2 – Practices and procedures for sampling

States the following;
"The microbiological characteristics of a sample can change significantly when stored, even for relatively short periods of time. Samples should, therefore, be analysed as soon as practicable on the day of collection. Once taken, microbiological samples should, at all times, be stored in the dark in the temperature range of 5 ± 3 °C. In any event, the analysis should commence within 24 hours of the sample being taken."

Legionella testing is undertaken according to ISO 11731:1998 which references ISO 19458 Water Quality – Sampling for Microbiological Analysis of water samples. Annex B states that for Legionella testing, it is recommended to hold samples at ambient and to test samples within 48 hours.

Retailer Supplementary Audit (RSA) suppliers please note:

The recently launched RSA scheme requirements document section 8.5.3 states *"Environmental samples should ideally be tested within 4 hours of being taken at source, or within a maximum of 24 hours of being taken at source. If environmental samples are over 24 hours old at the time of receipt/testing at the laboratory, the Retailer associated customer shall be contacted to discuss whether to proceed with testing. If the samples are subsequently tested, a suitable disclaimer shall be included in reports to indicate the sample was over 24 hours old at the time of analysis and the validity of results could be affected."*

It is a mandatory requirement of the RSA scheme that the sampling information (time and date) are provided and where the 24 hours is exceeded or the sampling information is not provided a deviating sample comment is applied to the certificate of analysis.

Wherever possible, swab/water samples will be prioritised to facilitate analysis within the 24 hour timeframe particularly where the sampling information is provided and the receiving laboratory identifies the swab/water samples have been received close to this time.

What does this mean for the results generated from such deviating samples?

Changes in the relative proportions of microorganisms could mean the results reported are no longer fully representative of the levels at the time of sampling. This is why a deviating sample comment is added to the certificate of analysis (*"Sample submitted outside of permitted test holding times"*).

What tests are affected by these requirements?

The ISO 18593 reference method for surface samples applies to any test performed on a swab sample and not just the pathogens covered by the RSA scheme.

Can I request for the comment to be removed?

Unfortunately this is not possible, for the reasons explained above, the certificate of analysis must contain the deviating sample comment to highlight the potential effect that the prolonged storage, prior to analysis may have had upon the results and as such it cannot be removed

Are the results for swab and water samples marked as deviating sample still UKAS accredited?

Analyses performed to obtain the results are not affected and therefore are still covered by the scope of UKAS accreditation.

The comment made in the report is meant to highlight that as the samples have been tested outside testing time parameter of 24 hours, the results may not be comparable to other samples that have been tested within the specified time scale or fully reflective of the number of organisms present in the sample at the time of sampling.

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Are my results which have a deviating comment applied still valid?

The actual impact upon each swab and water sample and test result cannot be predicted as multiple factors including the presence or absence of organic debris, the storage temperature and the presence of other non-target microorganisms could influence the test result. It is possible that in some instances the test result(s) could be affected and therefore not be valid.

However, most clients will be trending their Environmental Monitoring results (swabs and waters). As nothing has changed in how the samples are processed, the results can still be utilised / trended in the normal way.

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