



Quality Division Use Only

Quality Tracking #:	<input type="text" value="2023-017"/>	Classification:	<input type="text" value="Incident"/>
Non-Conformance Level:	<input type="text" value="N/A"/>	Section:	<input type="text" value="Biology/DNA"/>
Date of Discovery:	<input type="text" value="04/27/23"/>	Date of Incident:	<input type="text" value="04/27/23"/>

Forensic Case Number(s), if applicable:	Agency Case Number(s), if applicable:
N/A	N/A

Description of Non-conformance:

The Forensic Biology screening supervisor noted that the bleach dispenser used to make a 10% bleach solution was dispensing inconsistent volumes which were lower than expected. The Biology SOP requires a 10% bleach solution to be used to decontaminate utensils and work benches. Although the concentration of the bleach solution used to decontaminate was inconsistent, the routine monthly deep cleanings and swipe tests that monitor DNA activity for these deep cleanings showed that this did not have an effect on the decontamination of work surfaces.

Additional Information/Follow-Up:

On April 27, 2023, the screening supervisor noticed the bleach level in the dispensing tube was not at the top signaling that there could be a volume discrepancy. The liquid level was approximately half-way up the tube when the level should be at the top since that amount of liquid will be dispensed once someone presses on the pump. Upon noticing, the screening supervisor immediately alerted the section via email not to use the bleach dispensing tube to measure the appropriate volume of bleach and provided a conical tube for accurate measurement in the meantime.

Although the Biology SOP requires the use of 10% bleach to decontaminate utensils and workbenches, literature such as DNA contamination minimization – finding an effective cleaning method, Australian Journal of Forensic Sciences, Ballantyne et. Al (2015) has shown that a 1% bleach solution is effective at decontaminating surfaces from DNA. Following discovery of the insufficient dispensing volume the screening supervisor measured three volumes of bleach, volumes of 5.5 ml, 6.5 ml and 7 ml were obtained.

Since the volume of bleach is brought up to 100 ml with water the lowest bleach solution would have been 5.5%. In addition to screening analysts decontaminating their working surfaces before use and in between evidence samples, the section also undergoes routine monthly deep cleanings and conducts swipe tests, which involves using sterile cotton swab applicators to swipe different areas of the laboratory that have undergone deep cleaning



and sending that through the DNA process to assess for DNA activity. Results for monthly swipe tests of screening areas for 2023 showed less DNA obtained from post cleaning swabs for all months with the exception of February 2023. The data was reviewed by the Assistant Technical Leader, and this was considered to be an outlier.

These results are concordant with previous year's results. Therefore, the data shows that the inconsistent dispensed bleach volumes did not affect the decontamination of work surfaces.

Summary of Root Cause Analysis:

Note: Incidents are documented for tracking purposes and trend analysis. Root Cause Analysis is not required for incidents.

N/A

Actions Taken:

A new dispenser was purchased and ready for analysts to use on May 19, 2023. The screening supervisor instructed screening analysts to continue using a conical vial to measure the amount of bleach dispensed before pouring into their bleach bottle.

Section Manager: Courtney Head

Date: 10/23/23

Division Director: Amy Castillo

Date: 10/31/23

Incidents or Corrective Actions that involve the Biology/DNA section are reviewed by the Technical Leader and CODIS Administrator.



Houston Forensic Science Center
Incident/Corrective Action Report
Quality Division

Technical Leader: Cheron Maxwell

Date: 10/18/2023

CODIS Administrator: Jennifer Clay

Date: 10/22/2023

Quality Director: Jackeline Moral

Date Closed: 10/31/23