



Idaho State Police

Service Since 1939



Colonel Bill Gardiner
Director

Brad Little
Governor

To: Idaho Law Enforcement Agencies and Prosecutors
From: Matthew Gamette, ISP Forensic Services Laboratory System Director
Subject: Draeger Instrument Supplemental Validation Work
Date: December 13, 2024

Dear Colleagues:

ISPFS recently investigated a situation that occurred on a breath testing case using the Draeger Alcotest 9510 where there appeared to be an issue with the instrument software. Upon further research and investigation with the instrument manufacturer and at ISPFS, it has been determined that the situation was caused by a specific manipulation of the breath testing sample delivery. The issue has been investigated thoroughly and replicated in the laboratory setting by using a specific tactic. Instructions have been provided to the officers administering the tests (BTO and BTS) to remind them of their training on this topic, and to help prevent this occurrence in future cases. BTO and BTS officers continue to be provided with the instructions below as part of their training on the Draeger Alcotest 9510.

ISPFS has recently conducted extensive and documented testing (available on our website https://isp.idaho.gov/wp-content/uploads/Forensics/accordionDocs/Validation_Summaries//Draeger-Supplemental-Performance-Verification-1.pdf) in order to further demonstrate the robust nature of the safeguards in place for the Draeger Alcotest 9510 instrument. ISPFS did a thorough evaluation and validation of this instrument platform before it was first used in Idaho, and now ISPFS has done further research to ensure the evidential integrity of the breath samples that are collected when the Draeger Alcotest 9510 is utilized in its evidential capacity. The Draeger Alcotest 9510 is a sophisticated device designed to ensure accurate and reliable breath alcohol measurements. It operates by simultaneously monitoring multiple factors, including breath pressure, temperature, and flow rate, during the testing process. This robust approach ensures the validity of the breath sample and minimizes errors.

This comprehensive approach makes the Draeger Alcotest 9510 a reliable tool for evidential breath testing, ensuring accuracy in a wide range of conditions. The full executive summary of our research on this issue and associated data can be found on the ISPFS website. ISPFS continues to support this instrument platform for use in Idaho and will continue to provide expert testimony about the functionality of the instrument. ISPFS Regional Breath Testing Coordinators have been extensively trained regarding the operation of this instrument platform and will continue to provide testimony support as needed regarding this instrument performance.

Instructions/Reminders to BTO/BTS Officers:

If BTO/BTS officers notice that the subject is attempting to alter their breathing pattern by blocking the mouthpiece in any way (with their tongue, or not making a complete seal, etc.), the officer should not continue attempting to collect a breath sample and consider the breath attempt to be a refusal under the conditions that the subject was refusing to follow the instructions that were given. The officer should then obtain a blood sample (through permission, warrant, or warrantless if the situation falls under the exigent circumstances clause). These continue to be the instructions that we provide in our officer training, and it remains under their discretion to allow the subject to continue testing if the officer believes they could re-instruct the subject in order to obtain cooperation.

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Technical Details:

Central to the instrument's functionality are three "logic loops" within the software that govern the data collection and analysis phases. The process begins with **Logic Loop #1**, which is activated when the subject starts blowing with a flow rate of at least 8 liters per minute. During this phase, the device collects data at 250-millisecond intervals, generating both graphical feedback on the screen and audio cues for the operator. These data points are also analyzed to validate the sample by detecting mouth alcohol or checking for sufficient exhalation time and volume.

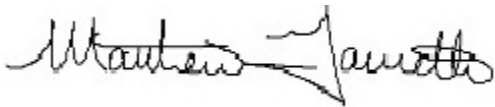
If the breath flow temporarily drops below 4.5 liters per minute (creating a single data point) and then rises above 5.5 liters per minute, the device transitions into **Logic Loop #2**. At this stage, the graphical display (found on page 2 of the subject's test report) and audio signals stop, but numeric data collection continues (found on page 1 of the subject's test report), ensuring that critical validations, such as mouth alcohol detection, remain active. This feature allows the device to maintain accuracy even when visual feedback is interrupted.

Finally, **Logic Loop #3** occurs when the breath flow remains below 4.5 liters per minute for a sustained period or if the subject stops blowing entirely. At this point, data collection ceases, and the device shifts to analyzing the static sample using infrared and electrochemical mechanisms to determine the alcohol concentration.

The Draeger 9510 incorporates several safeguards to ensure accurate readings and prevent contamination. These measures detect external alcohol sources or manipulations that might otherwise compromise the test's integrity.

Again, rigorous testing under controlled conditions has confirmed the reliability of the instrument, even in scenarios where breath flow is restricted or other variables are manipulated. The results demonstrate that the exception-handling algorithms remain effective, consistently producing valid and accurate alcohol concentration measurements.

Sincerely,

A handwritten signature in black ink that reads "Matthew Gamette". The signature is written in a cursive style with a large, stylized initial "M".

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