Title: Draeger 9510

1. Introduction

The Draeger 9510 is the device used for breath alcohol analysis by all Connecticut State and Local law enforcement. The Division of Scientific Services (DSS) has the responsibility to coordinate the maintenance and to verify working condition of the breath alcohol instruments prior to returning the devices to agencies for use in the field.

This procedure outlines the steps taken to evaluate Draeger 9510 instruments that have been returned to the laboratory from outside agencies or Draeger located in Texas.

2. Equipment/Materials/Reagents

2.1	Draeger 9510		
2.2	Methanol	A454	Fisher Scientific or equivalent
2.3	Ethanol	PM-0080-05	Guth Laboratories or equivalent
2.4	Mouth Pieces	95-000250	Central Equipment or equivalent
2.5	Simulator Apparatus	34C	Guth Laboratories or equivalent
2.6	Draeger provided USB Data Drive		
2.7	0.020 % Dry Gas	DG-U020-10	Calgaz or equivalent
2.8	0.080 % Dry Gas	DG-U080-10	Calgaz or equivalent
2.9	0.250 % Dry Gas	DG-U250-10	Calgaz or equivalent
2.10	Thermal Printer Paper	4415520	Guth Laboratories or equivalent

3. Preparation of Instrument Verification Solutions

3.1 Purchased Ethanol (0.08 BrAC) Solutions

3.1.1 This solution is placed into a simulator device and labeled with (Name), date prepared, date expires and with a safety diamond. The expiration date is determined by the manufacture of the purchased solution.

3.1.2 The solution is evaluated by running an 'Ethanol' test as listed below. The solution is deemed acceptable for use if ethanol is detected during simulator evaluation. Reagent log (excel worksheet and LIMS) is updated accordingly.

3.2 Prepared in-house solution (Methanol Simulator Solution) 'Methanol Interferent'

3.2.1 Prepared by adding 2mL of Methanol (Fisher) to 498 mL of DI water.

3.2.2 This solution is placed into a simulator device and labeled with (Name), date prepared, date expires and with a safety diamond. The expiration date is determined by the manufacture of the purchased solution.

3.2.3 The solution is evaluated by following the steps below for an 'Interferant Check;' The solution is deemed acceptable for use if "Interferent Detected" alert is detected during simulator evaluation.

3.2.4 Expiration date is determined by the manufacture of the purchased methanol solution.

3.2.5 Reagent log (excel worksheet and LIMS) is updated accordingly.

4. Procedure

Law enforcement agencies in Connecticut have Draeger instruments assigned to them. If issues arise these agencies contact the Breath Alcohol Unit of the DSS to assist with either correcting the issue or having the device sent out for repairs to the manufacturer. Some items such as correcting settings of date, time an IP address can be completed at the lab. For complex issues the BAU coordinates the shipping of the device to Draeger. Additionally the unit assesses the instruments prior to retuning them for use in the field.

4.1 Updating Date, Time and IP Address

There are three major technical components that need to be regularly checked on the Draeger; Date, Time and IP address. Police Departments (PD) requiring corrections to these fields will be instructed to schedule an appointment to have this addressed at the DSS.

4.2 Updating Date and Time

4.2.1 Plug a Draeger USB drive into the machine to access the needed settings.

4.2.2 On the bottom left side of the touch screen open the '**Menu**'.

4.2.3 Open '**Settings**'

4.2.4 Double click on '**Set date and time**'.

4.2.5 Update the needed fields and hit '**Save**' button at the bottom of the screen.

4.2.6 When both the time and date are corrected hit '**Save**' again

4.3 Updating IP Address

4.3.1 Plug a Draeger USB drive into the machine to access the needed settings.

4.3.2 On the bottom left side of the touch screen open the '**Menu**'.

4.3.3 Open '**Settings**'

4.3.4 Two options need to be checked.

4.3.5 Double click on the '**TraCS Configuration**' option. Codes must be in this order.

Server IP/Hostname: 10.51.111.8

Automatic Transfer: 90 Sec.

Communication Port: 9513

4.3.6 Hit '**Save**'. It will take a few minutes to save and close the window.

4.3.7 Go into the '**Network**' setting.

4.3.8 On the right hand side of the display 'IP' should be chosen (not DHCP).

4.3.9 Verify that the IP Address displayed is that written on the instrument or compare it to the IP list.

IP – Address:	123.456.789.123
Subnet – Mask:	255.255.255.000
Gateway:	123.456.789.001

4.3.10 Leave the DNS blank unless otherwise specified by the agency

4.3.11 Press the '**Save**' button at the bottom. A message will be displayed asking that the instrument be restarted to save the changes. Press 'Okay' and the instrument will restart.

4.4 **Loaner Instructions**

Loaners are issued when an agencies device requires calibration or repair. When the agencies device is calibrated/repaired the loaner is returned.

4.5 **Issuing a Loaner**

4.5.1 Loaners available to be assigned are maintained in the Breath Analysis Section.

4.5.2 Log-in to LIMS and go to the '**Request**' tab for the loaner.

4.5.3 In the request tab there will be two different requests. One request will be canceled (red) and the other will be active (blue).

Loaner – Out in field

Loaner – Available for use

Cancel the "Loaner – Available for use" and then un-cancel the "Loaner – Out in field".

4.5.4 Transfer the loaner instrument to Draeger Outgoing or directly to the officer.

From: Breath Analysis Section
To: (BA staff)
Then to: Draeger – Outgoing **OR** Agency + Officers picking up

4.5.5 Under the '**Case Info**' tab add an entry into the Synopsis.

'Date: Loaned to (Agency name). [INITIALS]'

4.5.6 Evidence Receiving may assist by performing transfers directly to the PDs. In these cases the device must be transferred to 'Dreager Outgoing' before the scheduled appointment.

4.6 **Loaner Returned from Police Department**

4.6.1 Scan the instrument to the Breath Analysis Section.

From: Draeger Outgoing **OR** Agency + Officer
To: (BA Staff)
Then to: Breath Analysis Section

4.6.2 Under the '**Request**' tab update the request status.

Cancel the "Loaner – Out in field" and then un-cancel the "Loaner – Available for use".

4.6.3 Under '**Case Info**' add an entry into the '**Synopsis'**:

"Date: Loaner returned from (Agency). Will check out. [INITIALS]"

4.6.4 Add a new request.

Go to the request tab and click the green 'Add' button at the top left side of the screen

Under '**Agency**' choose 'Chemical Analysis Section – DSS lab (DESPP)'

Under '**Agency Rep**' choose Toxicology Assistant Director or higher.

Click "**Select**" and a '**Select- Service**' window will open.

Under '**Lab**' select 'DESPP – Division of Scientific Services'

Under '**Section**' select 'Draeger'

Under '**Service**' select 'Service: Instrument Evaluation – Lab Eval'

Click '**Select**' and a 'New Request' window will open.

In the '**Notes**' section under 'Requester' add the same information as from the case synopsis: "Date: Loaner returned from (Agency). Will check out. [INITIALS]"

Uncheck the '**Request barcode**' checkbox.

Click '**Save**' a 'related Entries for Request' window will open.

Select the correct evidence, use the down arrow to relate the evidence.

Click '**Save**'

Complete same steps for additional tabs (offense and individual)

4.7 **Performing a Functionality Test**:

Functionality tests are performed on all Draeger instruments returned to the DSS after being loaned out.

4.7.1 To perform a blank test and an ethanol test, first press the green button to warm up the machine.

4.7.2 Turn on and warm the Ethanol Breath Simulator.

4.7.3 Hook up a 0.08% reference gas tank.

4.7.4 Press the green button after the machine has warmed up.

4.7.5 Run the blank test first.

1. From the display pick 'Evidentiary test: Part 2' only (this is the 2nd option down).
2. Fill out the following information hitting '**Next**' between each choice.
   - Officer INITIALS: Operators INITIALS
   - Officer First Name: Operators first name
   - Badge Number: Test
   - Case Number: Test
   - Suspect INITIALS: 0.000
   - Suspect First Name: BLANK
   - Suspect Middle Name: (Leave blank)
3. Select '**Summary**' and then '**Save**'.
4. Next the operator will be prompted to choose the test type:
   - Pick '**Breath**'
   - Then '**Summary**'
   - Then '**Save**'
5. The test will start.
   - The instrument will run through the program and prompt the operator when to blow into the device.
   - The device will provide a printout. The operator will save a single slip from each test and sign the bottom of it.

4.7.6 Run an ethanol test:

1. Follow the same steps as for the blank test except update the 2 field below:
   - Suspect INITIALS: Detection
   - Suspect First Name: Ethanol
2. When the device prompts the operator to 'blow' attach the appropriate simulator before blowing. Promptly detach it when finished blowing.

*To avoid damage to the Draeger NO NOT attach a simulator before being prompted to "blow". Additionally the simulator must be removed immediately after the blowing step is completed. If the instrument goes to the purge step prior to the simulator being removed damage can occur.

3. The device will provide a print out of the test results. Initial the bottom of the test strips and complete the Draeger 9510 Checkout Form.

4.7.7 Update the request in LIMS:

1. Open the "case" related to the instrument in LIMS.
2. Go to the '**Requests**' tab and right click on the request you want and choose '**edit findings**'.
3. Highlight the Draeger, right click and '**add result**'. In the top drop down menu pick '**results**' as the '**result type**'.
4. At the bottom type in "The breathalyzer instrument was evaluated within this laboratory and was verified as being acceptable for use."
   - If failed type in: "The breathalyzer instrument was evaluated within this laboratory and was verified as not being acceptable for use. Will send for repair."
5. Click Save and make sure to scan all documents.
   - This will include: Filled Checkout Form and Draeger strips.
   - These will be scanned and uploaded into the images folder with the label "*DSS Verify_(MM-DD-YY)_ARHJ-00XX*".
6. After the technical and administrative reviews are complete, the final report is printed. The report is placed into an envelope that is labeled with the Draeger number and attached to the Draeger.

4.8 **Sending Draeger Instrument for Repair**

The Breath Alcohol Unit (BAU) facilitates the shipping of Draeger instruments to the manufacturer when they are in need of repair. Agencies deliver devices to the DSS via ERU. BAU staff retrieve the devices from the ERU, updating the Chain of Custody in LIMS to prepare them for shipment.

4.8.1 The submitting agency should complete a Draeger Alcotest 9510 sheet when submitting the device for repair.

1. The top portion should be completed by the agency.
   - serial number
   - department
   - point of contact
   - issues with the instrument
2. Transport the Draeger instrument to the BAU lab and update LIMS. Transfer the device to the breath analysis section in LIMS:
   - Draeger Incoming **OR** Agency + Officers dropping off
   - Yourself
   - Breath Analysis Section
3. Under 'Case Synopsis' enter a new line with the date and the reason the device was brought in.
4. Next go to the **'**Requests' tab and to click the 'Add' button to add a request.
   - The 'Agency' and 'Rep' fields will automatically be filled. This will be the agency the device belongs to and the agent that submitted the device.
   - Click "Select" and a 'Select- Service' window will open.
   - Under '**Lab**' select "DESPP" and select "Draeger" as the '**Section**'.
   - Under '**Service**' select "Service: Instrument Evaluation – Draeger Return."
   - Click 'Select' and a 'New Request' window will open.
   - In the 'Notes' section under 'Requester' add the date and the agency name. Uncheck the "Request barcode" checkbox.
   - Click 'Save' a 'related Entries for Request' window will open.

- Select the correct evidence, use the down arrow to relate the evidence.
- Click "Save"

5. Adding Findings:

- In the '**requests'** tab right click on the request and select '**edit findings'**.
- Right click on the Draeger's name and select '**add result'**.
- In the drop down menu pick '**results'** as the '**result type'**. In a few sentences describe what was found concerning the device.

  Examples:

  "Instrument received from department with error 124. Instrument will be sent for repair."

  "Instrument received with external standard failure. Instrument will be sent out for repair."

4.8.2 After technical and administrative reviews are complete, send a service notification request to Draeger. (See example)

Service Notification Request #

Date: 4-12-2021		Purchase Order Number if required by your company for payment	
Bill to Attn: DESPP - State of CT		Ship to Attn: Mark Anderson	
Bill to Company Name: DESPP - State of CT		Ship to Company Name: DESPP - State of CT	
Bill to Company Address: 278 Colony Street		Ship to Company Address: 278 Colony Street	
City, State, Zip Code: Meriden, CT 06451		City, State, Zip Code: Meriden, CT 06451	
Phone: 203-427-4038	Email: Mark.Anderson@ct.gov	Phone: 203-427-4038	Email: Mark.Anderson@ct.gov

Please give a short description of any problem(s) you are having with your equipment:
Ext Std Failure.

Model # for items being returned:	Serial # for items being returned
Alcotest 9510	ARBD-0100
Putnam PD	

Reason for device return:

- ☑ Calibration
- ☑ Repair
- ☐ Urgent pre-approved (extra charge)
- ☐ Trade In

4.8.3 When Draeger provides acknowledgement print two copies of the notice.

1. A copy of the acknowledgement goes in the box with the instrument to be send out.
2. One goes in an envelope with the Draeger number and the "Service Notification Request Number" which is found on the notice on the top middle of the page.

4.8.4 Scan the service request, acknowledgment and shipping label and save it as "*Service Request+Track_(MM-DD-YY)_ARBD-XXXX*" – attach this to the case in LIMS.

4.8.5 Schedule the Fedex shipment pick up online.

4.8.6 Transfer the Draeger to Mail Transport.

1. From: Breath Analysis Section
2. To: Yourself
3. Then To: Mail Transport (indicate Federal Express using VIA)

4.9 **Receiving Draegers after Repair**

4.9.1 Upon receiving a device back from Draeger after repair remove the 2 documents that are attached to the shipping box. These will be save along with the new certificate Draeger has issued for the device.

1. Delivery receipt
2. Service Note

4.9.2 In LIMS update the chain of custody:

1. From: Mail Transport (indicate Federal Express using VIA)
2. To: Yourself
3. Then To: Breath Analysis Section

4.9.3 Under the 'Case Info' add a new line under the "Synopsis":

1. This should read: '(date) returned from Draeger (FedEx tracking number), will check out'.

4.9.4 Under the **"**Requests" tab click the Add button to add a request.

- The '**Agency**' and '**Rep**' fields will automatically be filled. This will be the agency the device belongs to and the agent that submitted the device.
- Click "**Select**" and a '**Select- Service**' window will open.
- Under '**Lab'** select "DESPP" and select "Draeger" as the '**Section'**.
- Under '**Service'** select "Service: Instrument Evaluation – Draeger Return."

- Click '**Select'** and a '*New Reques*t' window will open.
- In the '**Notes**' section under '**Requester**' add the date and the agency name. Uncheck the 'Request barcode' checkbox.
- Click '**Save**' a 'related Entries for Request' window will open.
- Select the correct evidence, use the down arrow to relate the evidence.
- Click "Save"

4.10 Evaluate the Draeger by doing a Full calibration and function test.

4.10.1 Full Calibration Test

1. Press the green button to warm up the machine. Turn on and warm the Methanol Breath Simulator.
2. Go into the '**Menu**' and into '**Maintenance**'.
3. Attach a reference gas tank.
4. Click on '**Cal check**'.
5. The display screen will have multiple options.
   - Verify that the number of tests is set to 2 tests. The up/down arrows can be used to adjust this.
   - All other fields should be left as is.
6. Run the '**Cal check**' for each concentration (0.02. 0.08 and 0.25). The respective gas reference tank will be added for each test.
7. The device will print the test results. Sign the bottom of each slip and write the results on the Checkout Sheet.

4.10.2 Run a blank, ethanol and interferent check.

1. Attach a 0.08 tank.
2. Press the green button after the machine has warmed up.
3. On the display choose 'Evidentiary test: Part 2 only'
4. Complete the following hitting 'Next' between each choice.
   - Officer INITIALS: Operators INITIALS
   - Officer First Name: Operators first name
   - Badge Number: Test
   - Case Number: Test

- Suspect INITIALS: 0.000
- Suspect First Name: BLANK
- Suspect Middle Name: (Leave blank)

5. Click '**Summary**' and then '**Save**'.
6. The device will then prompt the user for the test type. Choose '**Breath**', then '**Summary**' and '**Save**' again.
7. This will start the blank test. The device will prompt the operator when to blow.
8. The device will print the test results. Save a single slip from each test and sign the bottom of it.
9. Interferant Check: Follow the same steps for the interferent test as the blank test with these exceptions.
   - Suspect INITIALS: Interferent
   - Suspect First Name: Methanol
10. Ehtanol Test: Follow the same steps for the ethanol test as the blank test with these exceptions.
    - Suspect INITIALS: Detection
    - Suspect First Name: Ethanol
11. When the device prompts the operator to 'blow' attach the simulator before blowing. Promptly detach it when finished blowing.

    *To avoid damage to the Draeger NO NOT attach a simulator before being prompted to "blow". Additionally the simulator must be removed immediately after the blowing step is completed. If the instrument goes to the purge step prior to the simulator being removed damage can occur.
12. The device will print the test results. Intial the bottom of the test strips and complete the Draeger 9510 Checkout Form.

4.10.3 Add the findings in LIMS.

1. In the '**requests'** tab right click on the request and select '**edit findings'**.
2. Right click on the Draeger's name and select '**add result'**.
3. In the drop down menu pick '**results'** as the '**result type'**. In a few sentences describe what was found concerning the device.
   - If Passed add: "The breathalyzer instrument was evaluated by the manufacturer and maintenance was performed. The instrument was then

further evaluated within this laboratory and was verified as being acceptable for use."

- If failed add: "The breathalyzer instrument was evaluated by the manufacturer and maintenance was performed. The instrument was then further evaluated within this laboratory and was verified as being not acceptable for use. Will send back for further repair."
- Click Save.
- Scan and attach all papers included with return of instrument and the filled Checkout Form and Draeger strips. This will be scanned and uploaded into the images folder with the label "*DSS Verify+Cert_(MM-DD-YY)_ARBD-00XX*"

4.10.4 After the report has been technical and administratively reviewed, send an email to the agency stating the Draeger is ready for pick up and to schedule an appointment.

4.10.5 On the day of scheduled pick up, transfer the Draeger in LIMS:

1. From: Breath Analysis Section
2. To: Yourself
3. Then To: Draeger Outgoing **OR** Agency + Officers picking up

5. Safety

5.1.1 This procedure is carried out in a laboratory environment and standard safety procedures appropriate for such an environment will be utilized, including gloves, safety glasses, and protective clothing (e.g., lab coat). Biological specimens will be handled using universal precautions and will be treated as biohazardous. Potentially contaminated items and surfaces will be cleaned prior to use.

6. References

6.1 State of Connecticut Draeger Alcotest 9510 Supervisor's Manual