INFRARED BREATH TESTING DEVICE

DATAMASTER DMT ADDENDUM

Vermont Criminal Justice Training Council/Vermont Department of Health
November 2009

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TRAINING GOALS AND OBJECTIVES

Training Goal:

To certify Vermont law enforcement officers in the operation of the DataMaster DMT and enable them to obtain a valid evidential breath sample from a DUI subject to determine the breath alcohol concentration.

Objectives:

As a result of this training, students will be able to:

A) Ensure that an adequate observation period is properly administered prior to obtaining a subject test.

B) Determine that the DataMaster DMT breath testing instrument is prepared to analyze a breath sample.

C) Operate the DataMaster DMT breath testing instrument in accordance with the specified procedure incorporated in this training.

D) Verify that the DataMaster DMT completes and passes all quality control checks prior to obtaining a subject test.

E) Inspect the test record (evidence report) to ensure that all case specific information is recorded accurately.

F) Make a log book entry of the subject test at the time the test is completed.

G) Ensure that the subject has a copy of the evidence report.

H) Be prepared to testify in court about the procedure followed in operating the DataMaster DMT.

SECTION I

OPERATIONAL PRINCIPLES

The information provided in this section is for reference purposes only. An understanding of this material is not necessary for the effective operation of the DataMaster DMT breath testing device.

BASIC COMPONENTS OF THE DATAMASTER DMT

THE DATAMASTER DMT OPTICAL BENCH

1) **IR Source**: A lamp which emits infrared energy.

2) **Sample Chamber**: The sample chamber consists of a 23 ml capacity folded light path through which the IR energy passes.

3) **Filters**: Infrared filters specific for wavelengths at 3.37, 3.44 and 3.50 microns.

4) **Calibration Check**: A quartz plate with known infrared absorption for verification of calibration.

5) **Chopper:** A device which breaks up the infrared beam into pulses before they reach the detector in order to provide a reference point on which to measure.

6) **Microprocessor:** The microprocessor controls the test sequence and all measurements.

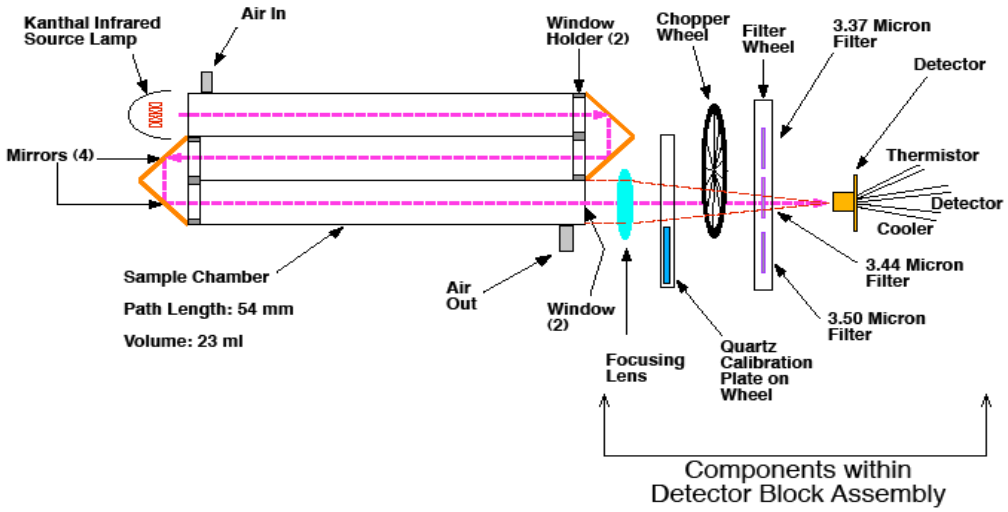


Figure 1: DataMaster DMT Optical Bench

EXTERNAL FEATURES OF THE DATAMASTER DMT

1) **LCD Touch screen**: Identifies each part of the test procedure as it occurs and provides information to the instrument operator to complete the test.

2) **Keyboard:** Used for data entry.

3) **Stylus:** Used to select options in the software.

4) **Power ON/OFF Switch**: Located on the back of the instrument and only to be used under special circumstances as the normal mode for the instrument is to have the power on.

5) **Heated Breath Tube:** The breath tube is electrically heated and provides a path for the breath sample from the mouth piece to the sample chamber. The breath tube also contains a radio frequency antenna.

6) **Simulator:** An external attachment used to simulate a breath alcohol sample containing a known amount of alcohol, used as a quality control check.

Figure 2: The DataMaster DMT

DATAMASTER DMT OVERVIEW

The DataMaster DMT breath testing instrument is designed to undergo a number of processing steps to ensure a fair and accurate analysis of a breath sample introduced to it. These steps include checking components for function, checking detector response, adjusting a measurement baseline to ambient air, introducing a simulated breath containing alcohol vapor, measuring the quality of breath and monitoring heated zones within the system.

The figure below is a general graphic example of the monitoring of a breath sample to ensure that what is measured meets the minimum criteria. As a sample is introduced into the instrument the flow rate is continually monitored. When the minimum flow rate is achieved it must remain at or above that rate for enough time to account for delivery of at least 1.5 liters of breath. Simultaneously the alcohol concentration in the sample is monitored four times per second. A valid breath sample is expected to show a sharp rise and eventual plateau in the alcohol curve as breath continues to flow. If these criteria are met the instrument will report a breath alcohol concentration.

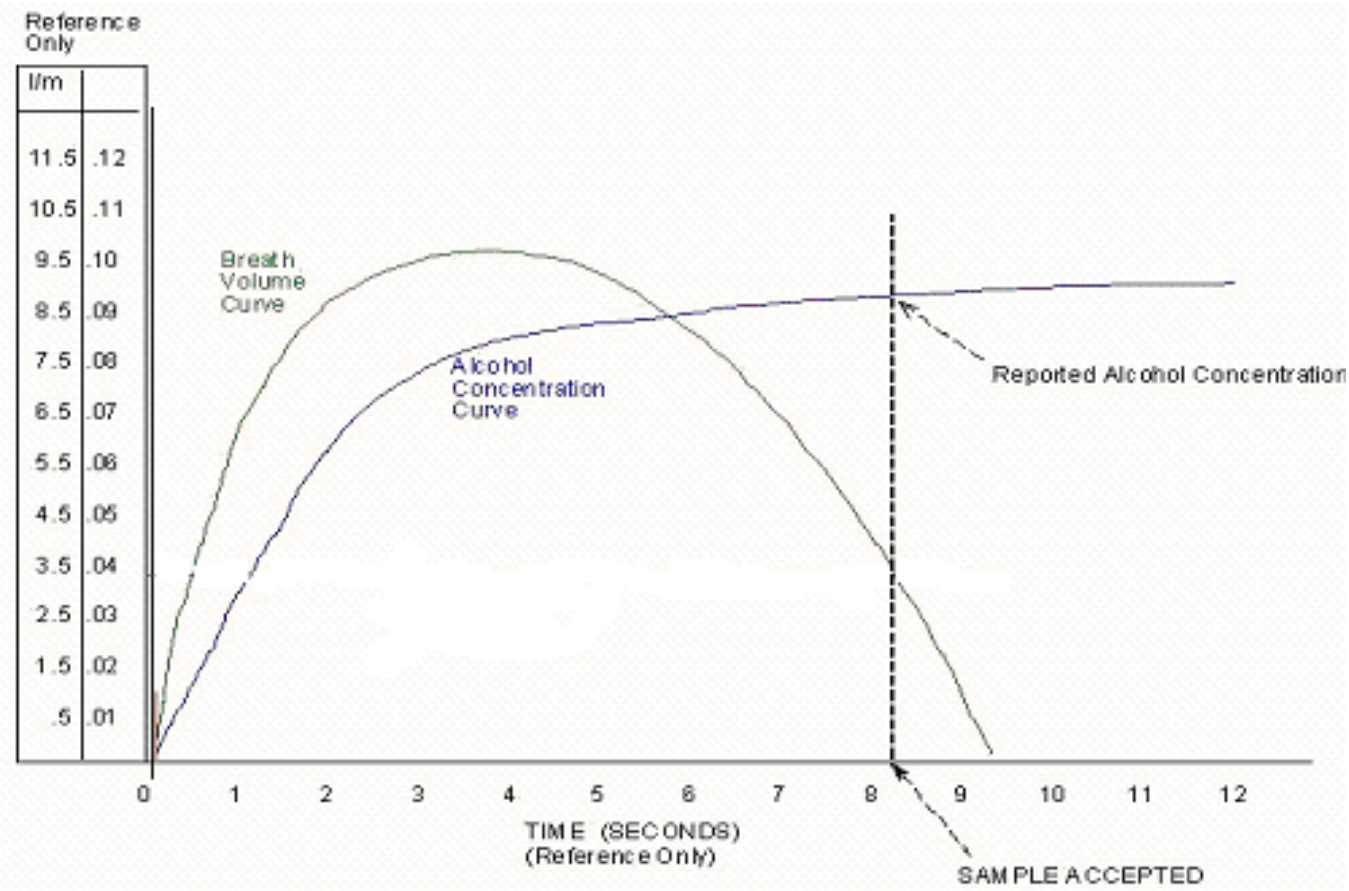


Figure 3: Typical Breath Profile

SECTION II

PROCESS FOR OBTAINING AN EVIDENTIAL SAMPLE

PROCESS FOR OBTAINING AN EVIDENTIAL DATAMASTER DMT DUI SUBJECT TEST

PREPARATION:

STEP 1: If the screen saver is active, tap the screen to remove the DataMaster DMT from standby mode.

STEP 2: Confirm that the DataMaster DMT displays "READY, PUSH RUN." If the instrument is turned off or if it displays "NOT IN SERVICE," proceed to a different DataMaster site.

STEP 3: Visually observe the subject for any evidence of food, gum, tobacco or any other foreign matter in the mouth. Ask the subject if he/she has anything in their mouth. Have anything in their mouth removed prior to starting the next step. Tongue piercings and dentures may remain in the mouth.

STEP 4: The DataMaster DMT is programmed with a mandatory 15 minute timer for the observation period. The 15 minute timer must be satisfied before a subject test is allowed. Press the "START TIMER" button to start the timer.

STEP 5: Observe the subject for 15 uninterrupted minutes. The subject must be within visual and audio proximity for the entire 15 minutes preceding the test. If at any time the subject burps, belches or vomits, the observation period must be restarted. If at any time the subject puts something into their mouth, the item must be removed and the observation period started again.

OPERATING THE INSTRUMENT:

STEP 1: Push "RUN" to begin the test process.

STEP 2: The instrument will then prompt "TYPE OF TEST? DUI or CHECK-IN." Select "DUI."

STEP 3: The DataMaster DMT will then prompt the operator to enter the information which pertains to the subject and circumstances of the incident. The questions are addressed in Section III of this manual, *Data Entry and Review*.

STEP 4: Review the information entered into the DataMaster DMT. Correct any errors if necessary and answer "NO" when the Review Data question prompts for a second time.

STEP 5: If the 15 minute timer was not started prior to pressing the "RUN" button, the DataMaster DMT will now prompt "START TIMER?" Press "OK" to start the timer. The test sequence will automatically begin once the 15 minute timer is satisfied.

STEP 6: The instrument will sequentially display the following.

"PURGING"	Room air is being pumped into the sample chamber through the breath tube.
"AMBIENT ZEROING"	Establishing zero reference based on room air in the sample chamber.
"BLANK TEST"	Reports the result of the ambient zeroing.
"CALIBRATION CHECK"	The quartz plate is analyzed to verify that the calibration performed in the laboratory is still valid.
"SIMULATOR VAPOR"	A simulated breath sample is analyzed as a quality control check.

The results of the simulator vapor test should be within +/- 5% of the certified solution concentration. After the simulator vapor is analyzed, the instrument will then display as before:

"PURGING"

"AMBIENT ZEROING"

"BLANK TEST"

STEP 7: After the instrument completes its quality control checks it will display "SUBJECT TAKE TEST? YES or NO"

A) If the subject consents to provide a breath test select "YES" or press [Y] on the keyboard

B) If the subject refuses to provide a breath sample, select "NO" or press [N]. The instrument will then prompt "REFUSAL or INCAPABLE." If the subject is physically incapable of providing a sample, select "INCAPABLE." If the subject refuses to provide a sample, select "REFUSAL." In both instances

another box will pop up asking for a reason. Type in a reason why the subject did not provide a sample. The breath testing sequence will automatically end and the evidence report will print.

STEP 8: If the subject has consented to provide a breath test, the display will flash "PLEASE BLOW" and an intermittent tone will be heard.

A) Insert a new mouthpiece into the breath tube. For sanitary purposes, avoid directly touching the mouthpiece.

B) Instruct the subject to provide a slow, continuous breath sample through the mouthpiece inserted into the breath tube of the instrument. This may take 6 seconds or longer depending on the individual. The internal electronics of the instrument determine when an adequate sample has been obtained. It is not necessary to instruct the subject to take a deep breath.

C) The test operator should hold the breath tube during delivery of the breath sample and confirm that the breath tube is warm to the touch.

D) As the subject provides an appropriate breath sample the words "PLEASE BLOW" will no longer flash, but remain steady on the screen and a constant tone will be heard. An individual should be allowed to deliver a sample until they are unable to do so.

E) While the subject is blowing the screen will display the breath and alcohol profiles.

F) After an adequate breath sample is obtained the instrument will display the subject's alcohol result. The test operator should inform the subject of the result of the evidentiary test and ask the subject if they wish to have a second test.

G) The operator should immediately remove the mouthpiece and discard it.

STEP 9: The following displays will then appear on the screen:

"PURGING"

"SUBJECT TAKE SECOND TEST? YES or NO"

A) If the subject declines the second test, the operator should select "NO" and an evidence report will be printed. The evidence report will indicate the result of the evidentiary test and will show "SECOND TEST NOT REQUESTED."

B) If the subject requests a second test, the operator should select "YES." The instrument will then display:

"PURGING"

"AMBIENT ZEROING"

"BLANK TEST"

"CALIBRATION CHECK"

"SIMULATOR VAPOR"

"PURGING"

"AMBIENT ZEROING"

"BLANK TEST"

Following completion of the blank test the instrument will again display:

"SUBJECT TAKE SECOND TEST? YES or NO"

C) If the subject again consents to a second test, the operator should select "YES." The instrument will display:

"PLEASE BLOW"

D) The operator should insert a new mouthpiece into the breath tube and instruct the subject to provide a breath sample as before.

E) Once the sample is accepted the operator should immediately remove the mouthpiece and discard it.

STEP 10: The evidence report is printed in triplicate at completion of the test sequence and will include all information entered in Step 3, the test sequence(s) and the simulator solution concentration information.

A) One copy of the report should go with the rest of the case paperwork to the State's Attorney.

B) One copy of the report is retained by the arresting officer.

C) One copy of the report should be given to the subject.

STEP 11: Make entries regarding the test in the DataMaster Operator Use log book as well as your own personal Infrared log, if one is maintained.

PROCESS FOR OBTAINING A DATAMASTER DMT CHECK-IN CONFIRMATION TEST

PREPARATION:

STEP 1: If the screen saver is active, tap the screen to remove the DataMaster DMT from standby mode.

STEP 2: Confirm that the DataMaster DMT displays "READY, PUSH RUN." If the instrument is turned off or if it displays "NOT IN SERVICE," proceed to a different DataMaster site.

STEP 3: Visually observe the subject for any evidence of food, gum, tobacco or any other foreign matter in the mouth. Ask the subject if he/she has anything in their mouth. Have anything in their mouth removed prior to starting the next step. Tongue piercings and dentures may remain in the mouth.

OPERATING THE INSTRUMENT:

STEP 1: Push "RUN" to begin the test process.

STEP 2: The instrument will then prompt "TYPE OF TEST? DUI or CHECK-IN." Select "CHECK-IN."

STEP 3: The DataMaster DMT will then prompt the operator to enter information which pertains to the subject. The questions are addressed in Section III, *Data Entry and Review*.

STEP 4: Review the information entered. Correct any errors if necessary and select "NO" when the review data question prompts for a second time.

STEP 5: The instrument will sequentially display the following.

"PURGING"	Room air is being pumped into the sample chamber through the breath tube.
"AMBIENT ZEROING"	Establishing zero reference based on room air in the sample chamber.

"BLANK TEST"	Reports the result of the ambient zeroing.
"CALIBRATION CHECK"	The quartz plate is analyzed to verify that the calibration performed in the laboratory is still valid.
"SIMULATOR VAPOR"	A simulated breath sample is analyzed as a quality control check.

The results of the simulator vapor test should be within +/- 5% of the certified solution concentration. After the simulator vapor is analyzed, the instrument will then display as before:

"PURGING"

"AMBIENT ZEROING"

"BLANK TEST"

STEP 6: The DataMaster DMT will then flash "PLEASE BLOW" and an intermittent tone will be heard.

A) Insert a new mouthpiece into the breath tube. For sanitary purposes, avoid directly touching the mouthpiece.

B) Instruct the subject to provide a slow, continuous breath sample through the mouthpiece inserted into the breath tube of the instrument. This may take 6 seconds or longer depending on the individual. The internal electronics of the instrument determine when an adequate sample has been obtained. It is not necessary to instruct the subject to take a deep breath.

C) The test operator should hold the breath tube during delivery of the breath sample and confirm that the breath tube is warm to the touch.

D) As the subject provides an appropriate breath sample the words "PLEASE BLOW" will no longer flash, but remain steady on the screen and a constant tone will be heard. An individual should be allowed to deliver a sample until they are unable to do so.

E) While the subject is blowing the screen will display the breath and alcohol profiles.

F) Once an adequate sample is accepted the operator should immediately remove the mouthpiece and discard it.

STEP 7: The evidence report is printed in triplicate at completion of the test sequence and will include all information entered in Step 3, the test sequence(s) and the simulator solution concentration information.

A) One copy of the report should go with the rest of the case paperwork to the State's Attorney.

B) One copy of the report is retained by the arresting officer.

C) One copy of the report should be given to the subject.

STEP 8: Make entries regarding the test in the DataMaster Operator Use log book as well as your own personal Infrared log, if one is maintained.

SECTION III

DATA ENTRY AND REVIEW

INSTRUMENT QUESTION DISPLAYS AND FORMAT

DUI SUBJECT TEST:

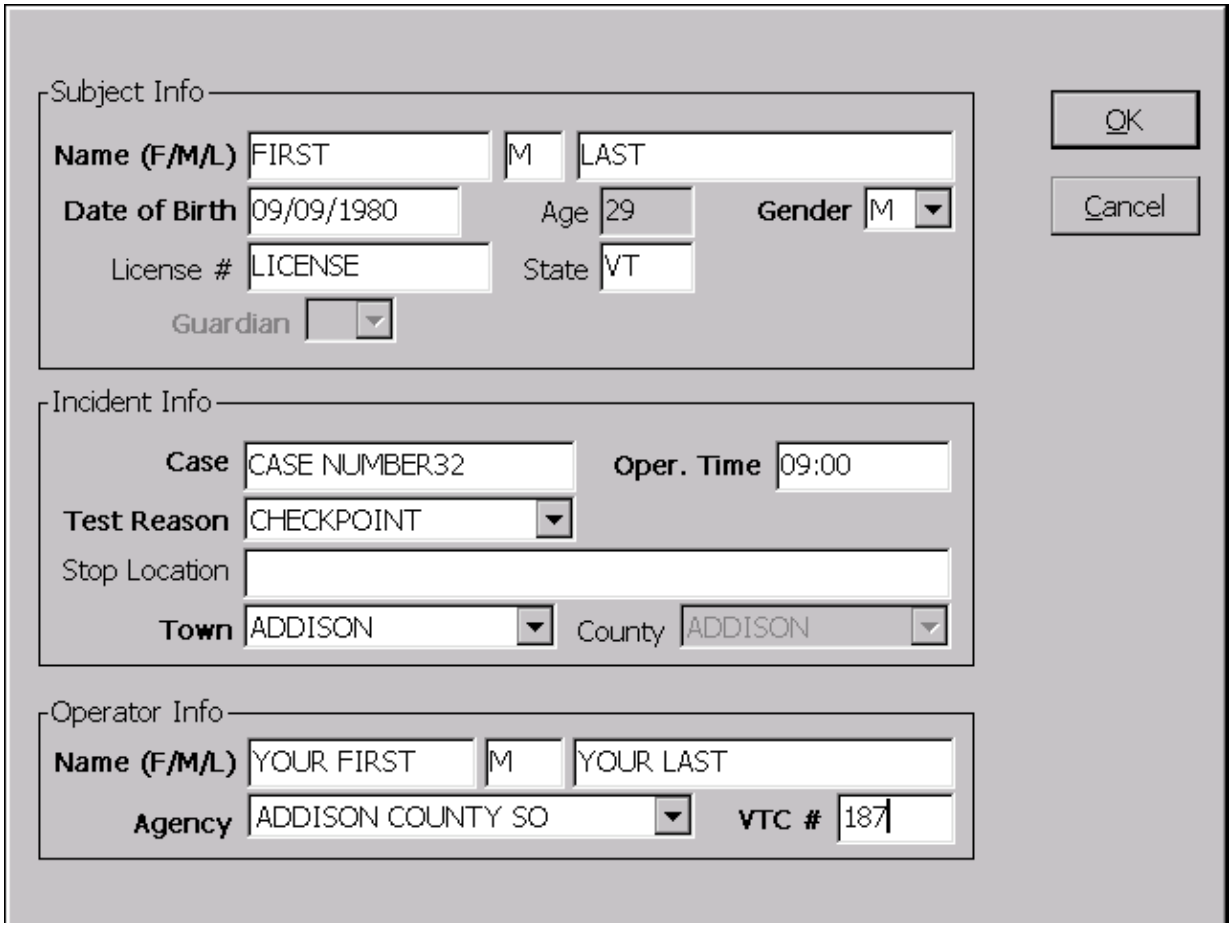


Figure 4: DUI Subject test data entry screen

A) Enter information in the boxes as requested.

B) All boxes in which the command is **bold** are required fields.

C) Use [TAB] on the keyboard to move between fields.

D) **Subject Info:** The suspected DUI subject information.

E) **Date of Birth:** Once the date of birth has been entered the DataMaster DMT will automatically populate the age field.

F) **Guardian:** If the subject is under 18 years of age, the Guardian box will become active. If a guardian is present select "Y" if not select "N."

G) **Gender:** Select "M" for male and "F" for female.

H) **License # / State:** Enter the identification number and state of issue if a license is available.

I) **Case:** The case number assigned by the processing agency.

J) **Oper. Time:** The time the subject was operating, attempting to operate or in actual physical control of the motor vehicle.

K) **Test Reason:** Select either "CRASH," "STOP," "CHECKPOINT," or "OTHER."

L) **Stop Location:** The location where the incident occurred. Up to 40 characters may be entered.

M) **Town:** The name of the town in which the incident occurred. To select a town, scroll through the alphabetical list or jump to the first letter of the town name by pressing the corresponding letter on the keyboard.

N) **County:** This field will automatically populate based on the town in which the incident occurred.

O) **Operator Info:** The processing officer who is operating the DataMaster DMT.

P) **Agency:** The name of the agency for which the processing officer works. To select an agency, scroll through the alphabetical list or jump to the first letter of the agency name by pressing the corresponding letter on the keyboard.

Q) **VTC #:** The test operator's Vermont Traffic Complaint (VTC) number used in traffic violation cases.

R) Once all of the information is entered select "OK" on the screen or press [ENTER].

S) A box will pop up prompting “REVIEW DATA? YES or NO.” Select “YES” on the screen or [Y] on the keyboard and review all data entered.

T) Once all data is correct select “OK” or press [ENTER]. The “REVIEW DATA? YES or NO” box will pop up again. Select “NO” or press [N] once you have reviewed your data and you wish to proceed to the test sequence.

CHECK-IN CONFIRMATION TEST:

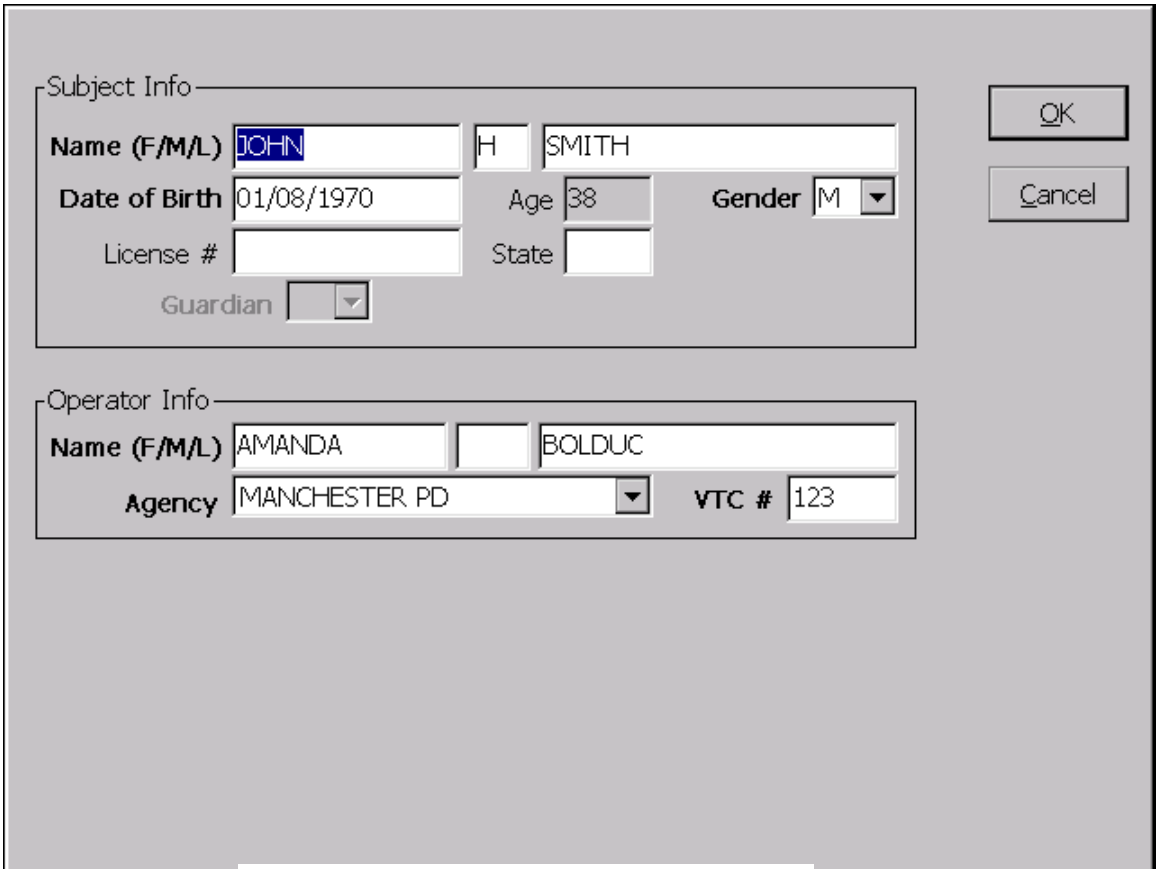


Figure 5: Check-In data entry screen

A) Enter information in the boxes as requested.

B) All boxes in which the command is **bold** are required fields.

C) Use [TAB] on the keyboard to move between fields.

D) **Subject Info:** The Check-In subject information.

E) **Date of Birth:** Once the date of birth has been entered the DataMaster DMT will automatically populate the age field.

F) **Guardian:** If the subject is under 18 years of age, the Guardian box will become active. If a guardian is present select "Y" if not select "N."

G) **Gender:** Select "M" for male and "F" for female.

H) **License # / State:** Enter the identification number and state of issue if a license is available.

I) **Operator Info:** The processing officer information.

J) **Agency:** The name of the agency for which the processing officer works. To select an agency, scroll through the alphabetical list or jump to the first letter of the agency name by pressing the corresponding letter on the keyboard.

K) **VTC #:** The test operator's Vermont Traffic Complaint (VTC) number used in traffic violation cases.

L) Once all of the information is entered select "OK" on the screen or press [ENTER] on the keyboard.

M) A box will pop up prompting "REVIEW DATA? YES or NO." Select "YES" on the screen or [Y] on the keyboard and review all data entered.

N) Once all data is correct select "OK" or press [ENTER]. The "REVIEW DATA? YES or NO" box will pop up again. Select "NO" or press [N] once you have reviewed your data and you wish to proceed to the test sequence.

TIME RESTRICTIONS ON DATA ENTRY AND PROCESSING

Once the 15 minute observation timer is satisfied, the DataMaster DMT Operator will have an additional 15 minutes to press the "RUN" button and begin data entry. If the "RUN" button is not pressed in this time, the 15 minute observation timer will need to be restarted.

When prompted to enter data approximately five minutes is allotted. If data entry is not finished within the five (5) minutes the instrument will return to "READY, PUSH RUN."

When prompted to make a decision such as "SUBJECT TAKE TEST? YES or NO" or "USE PREVIOUS DATA," one (1) minute is allotted.

When prompting "PLEASE BLOW" the subject will have two (2) minutes to provide an adequate breath sample. If at the end of this time an adequate breath sample has not been provided the instrument will again prompt "SUBJECT TAKE TEST? YES or NO." After three failures to obtain an adequate breath sample the instrument will rerun its quality control checks. It will then allow the subject up to three more two minute opportunities to provide an adequate sample. All completed and/or attempted breath tests will be documented on the evidence report.

SECTION IV

UNDERSTANDING TEST REPORTS

EXAMPLES OF BREATH AND ALCOHOL GRAPHS

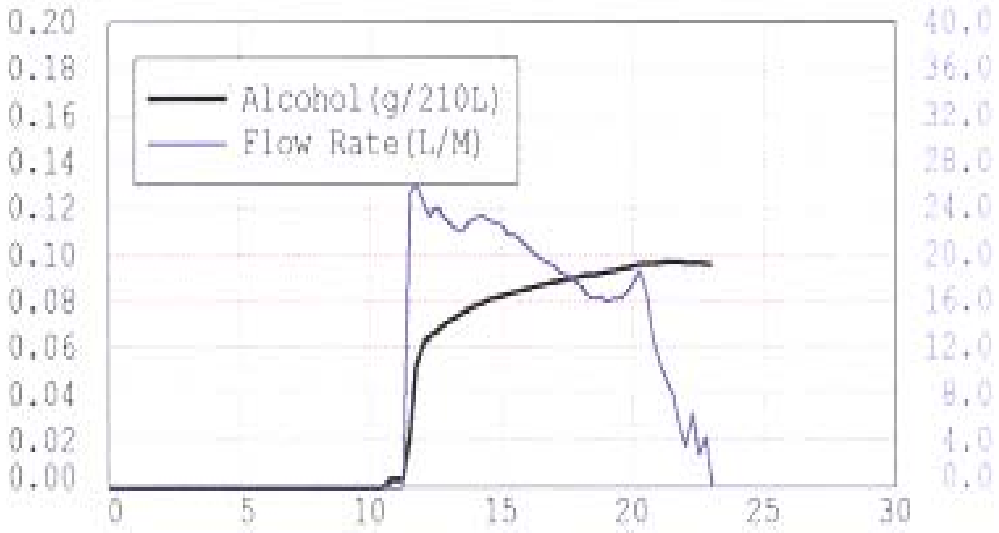


Figure 6: Normal breath pattern and alcohol curve.

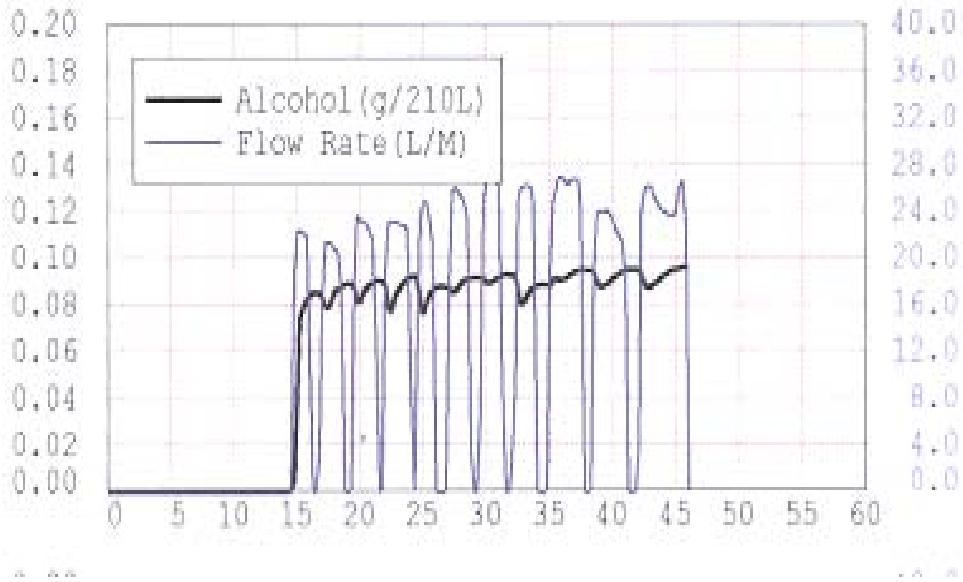


Figure 7: Huffing and puffing breath pattern

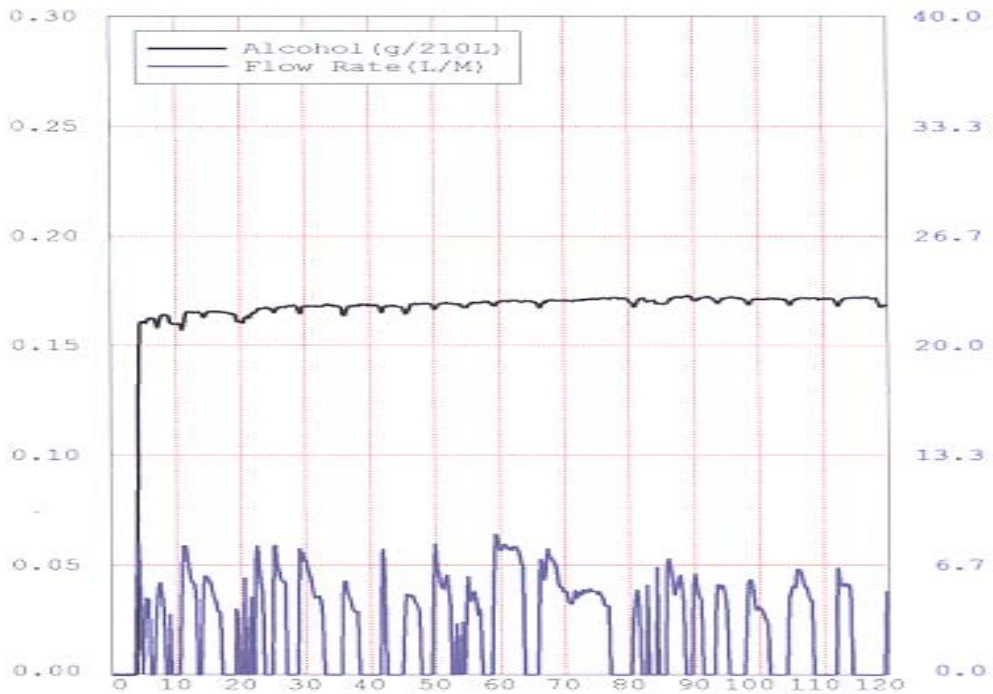


Figure 8: Incomplete breath sample with huffing and puffing.

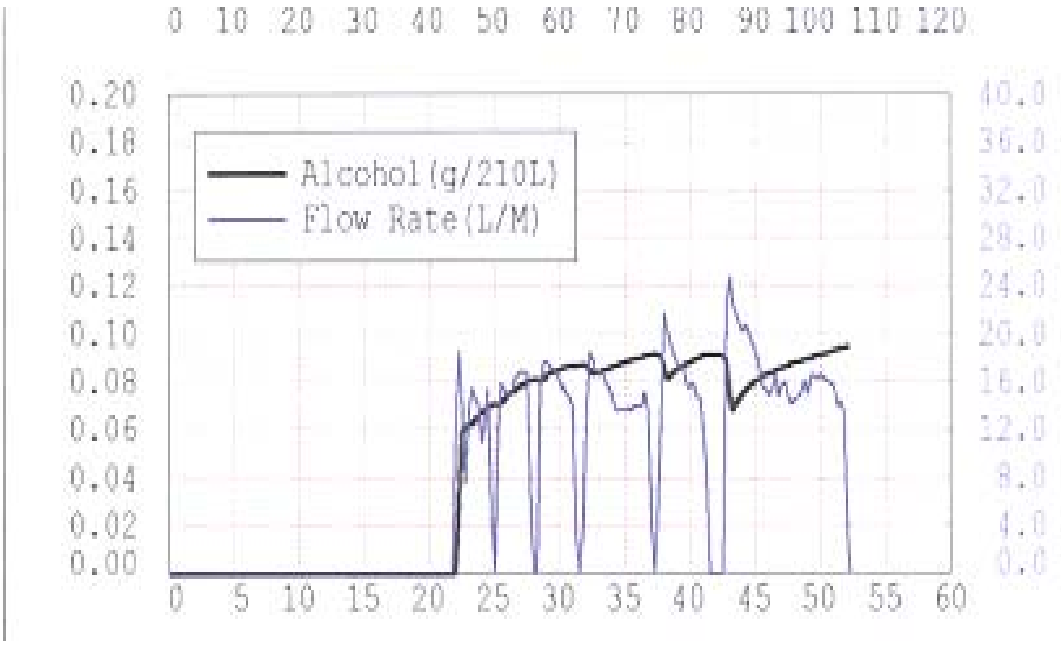


Figure 9: Starting and stopping, attempting to deliver a complete sample

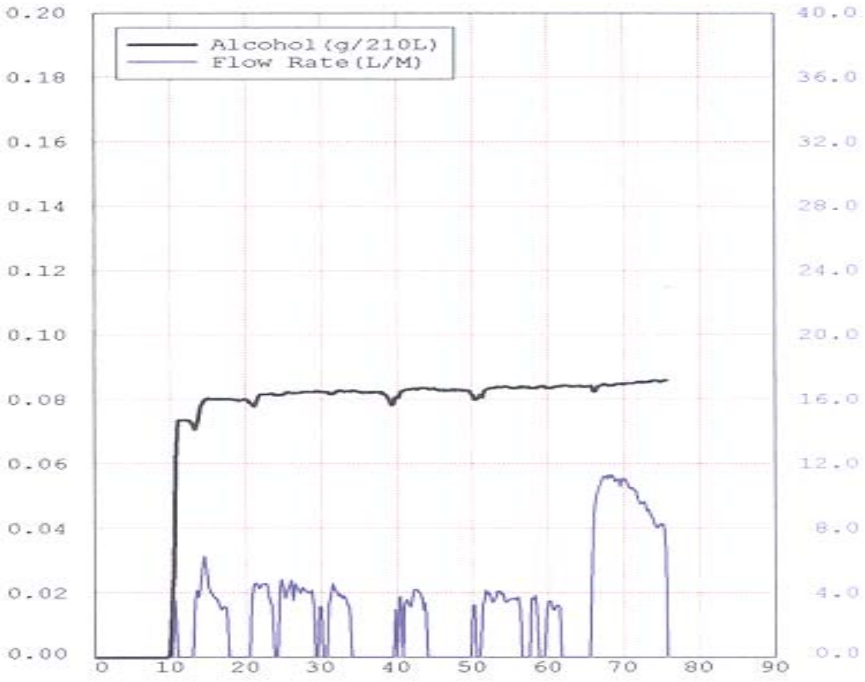


Figure 10: Low breath flow followed by a full breath

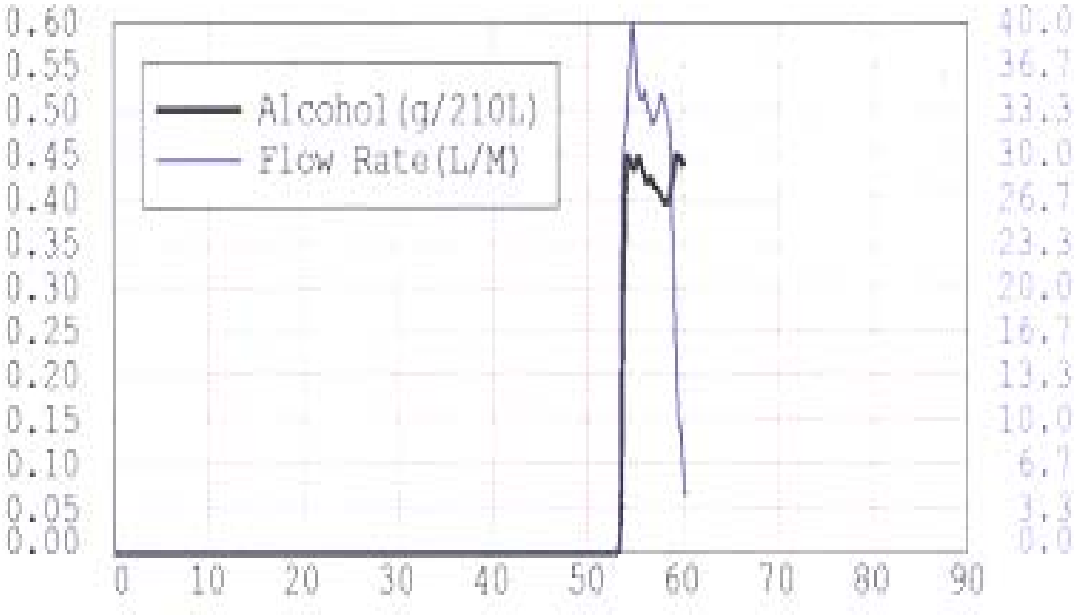


Figure 11: Mouth Alcohol

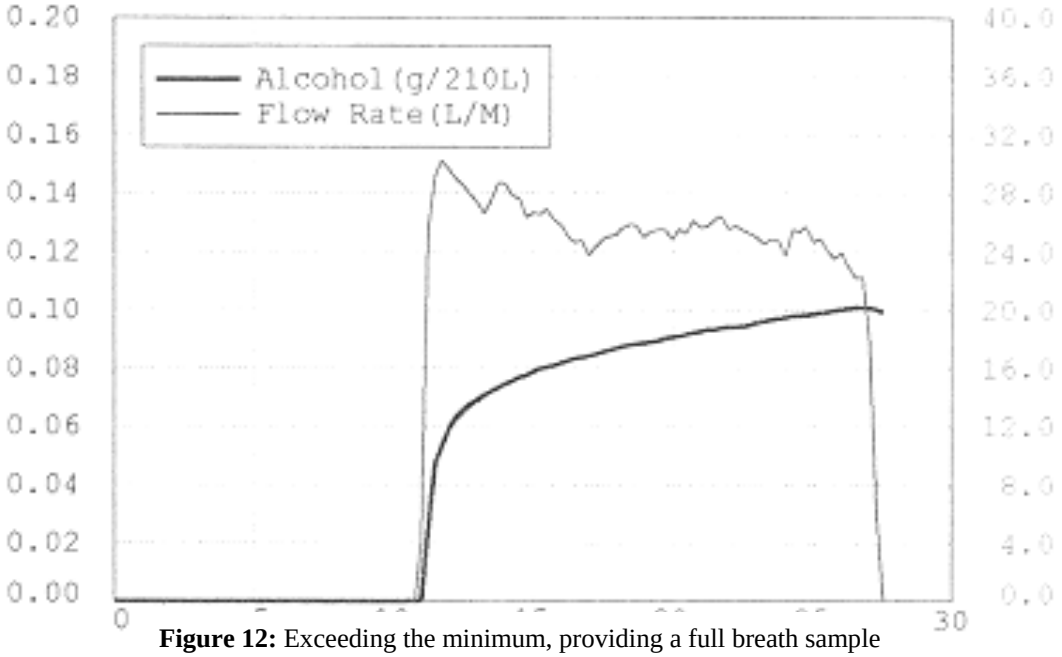


Figure 12: Exceeding the minimum, providing a full breath sample

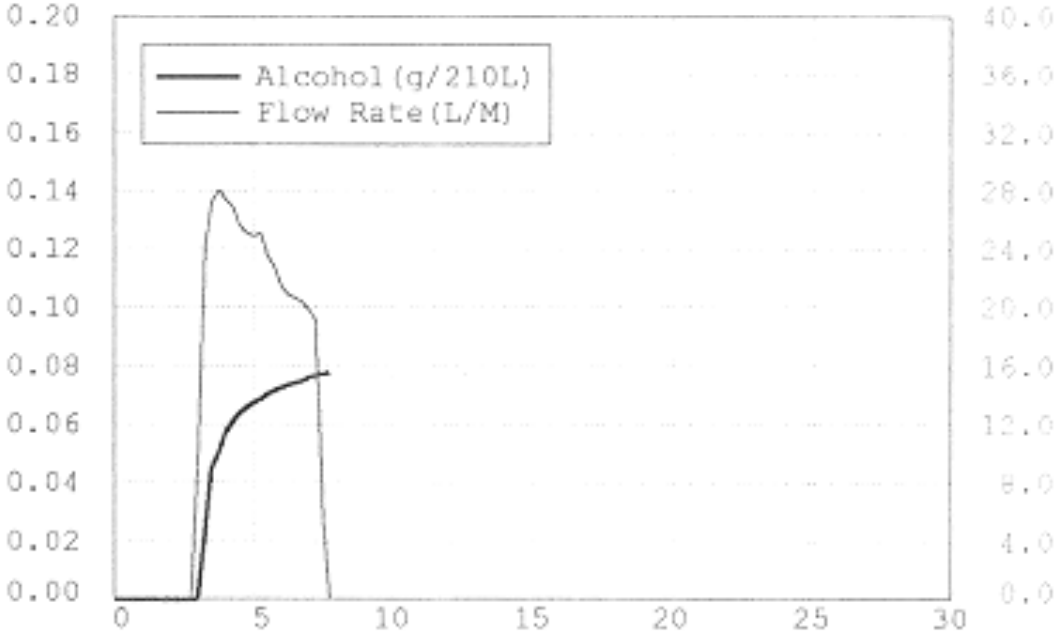
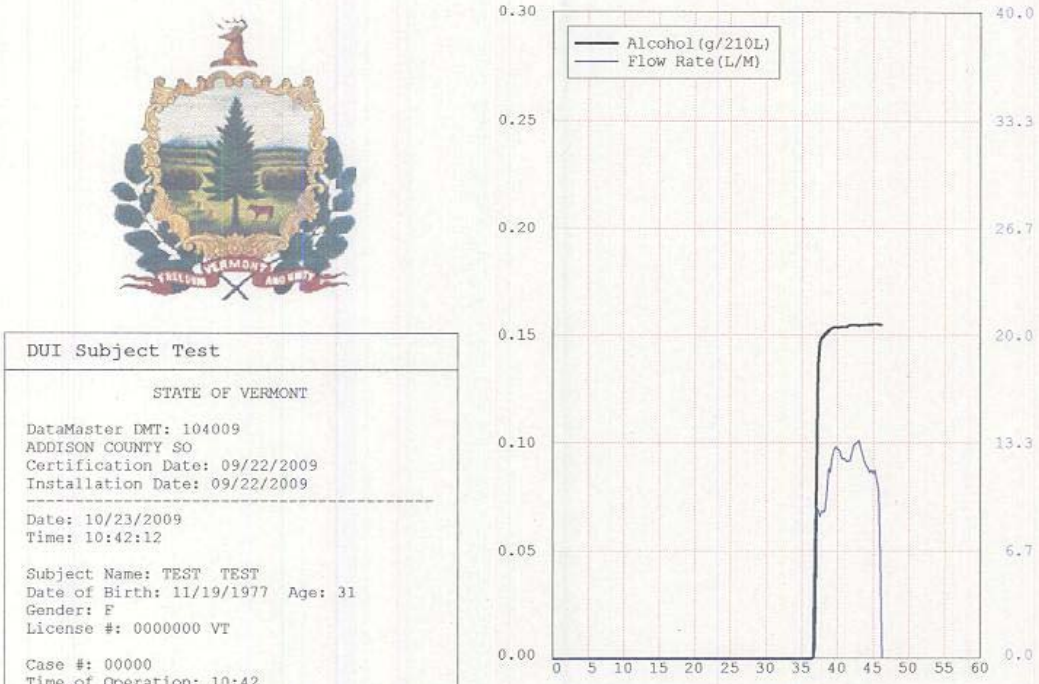


Figure 13: Meeting the minimum breath volume criteria

Figures 12 and 13 are consecutive breath samples from the same individual. In figure 12, the subject provided a full breath sample until they could no longer blow out. In this sample the breath volume measured approximately 6.8L and the alcohol result was 0.099g/210L. In figure 13 the same subject only provided a partial breath sample. While they met the minimum volume requirement, the individual did not blow out to their full capacity. In this sample, the breath volume measured approximately 1.7L and the alcohol result was 0.077g/210L.

EXAMPLES OF SUBJECT TEST REPORTS



DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104009
ADDISON COUNTY SO
Certification Date: 09/22/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 10:42:12

Subject Name: TEST TEST
Date of Birth: 11/19/1977 Age: 31
Gender: F
License #: 0000000 VT

Case #: 00000
Time of Operation: 10:42
Location of Incident: VERMONT DEPT OF HEALTH
Town: BURLINGTON
County: CHITTENDEN

Test Operator Name: DARCY M RICHARDSON
Agency: VT DEPT OF HEALTH

Obs. Period Start:		10:41
BLANK TEST	0.000	10:43
CALIBRATION CHECK	PASSED	10:43
SIMULATOR VAPOR	0.098	10:43
BLANK TEST	0.000	10:44
SUBJECT SAMPLE (Vol-1.8L)	0.155	10:46

2nd TEST NOT REQUESTED

All alcohol values reported in g/210L

Sim. Vapor Concentration	0.100
Sim. Vapor Range	0.095 - 0.105

Simulator Temp 33.9°C

DMT Serial Number #104009 Page 1 of 1 10/23/2009 10:46

Figure 14: One test DUI Subject Report

DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104709
ADDISON COUNTY SO
Certification Date: 09/21/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 10:57:00

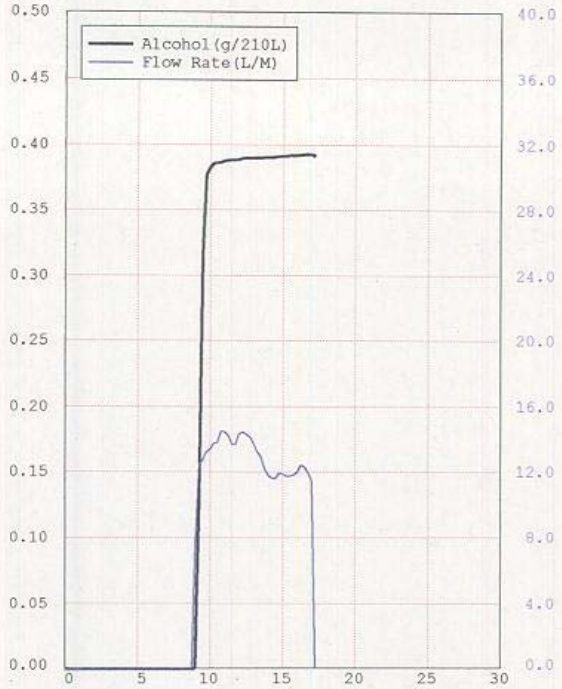
Subject Name: TEST TEST
Date of Birth: 07/17/1979 Age: 30
Gender: M
License #: ABC123 VT

Case #: ABC1234
Time of Operation: 20:25
Location of Incident: VERMONT DEPARTMENT OF HEALTH
Town: BURLINGTON
County: CHITTENDEN

Test Operator Name: AMANDA L BOLDUC
Agency: VDHL

Obs. Period Start:		10:44
Obs. Restart: vomit		10:44
BLANK TEST	0.000	10:57
CALIBRATION CHECK	PASSED	10:58
SIMULATOR VAPOR	0.100	10:58
BLANK TEST	0.000	10:59
SUBJECT SAMPLE (Vol=1.7L)	0.391	10:59
BLANK TEST	0.000	11:00
CALIBRATION CHECK	PASSED	11:00
SIMULATOR VAPOR	0.100	11:01
BLANK TEST	0.000	11:01
SUBJECT SAMPLE (Vol=1.6L)	0.391	11:02

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.7°C



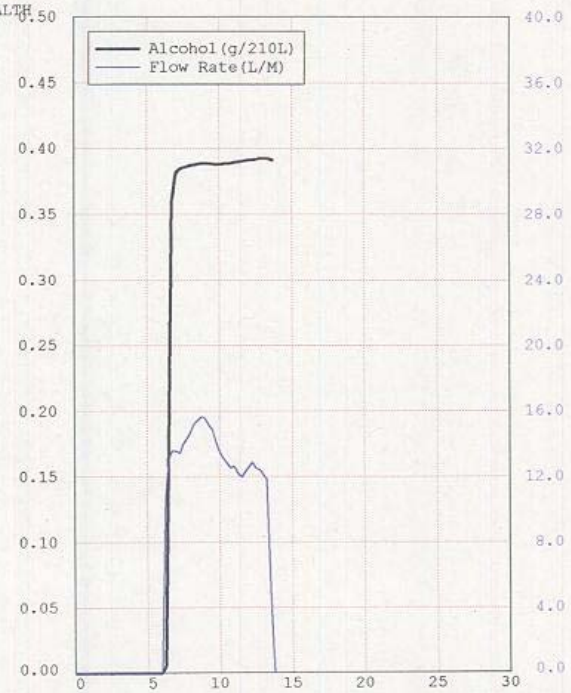


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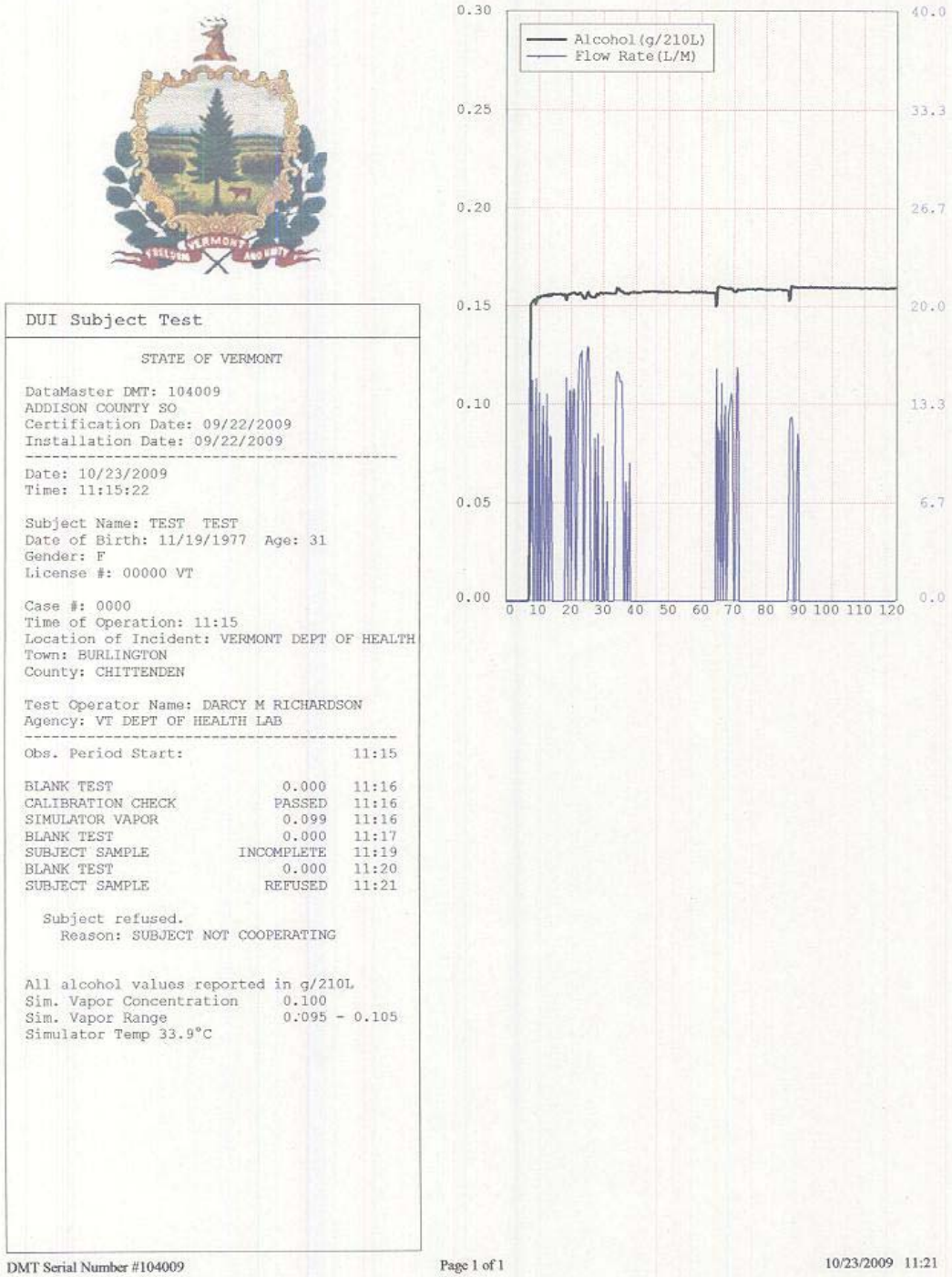
Figure 15: Two test DUI Subject Report



DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104009
ADDISON COUNTY SO
Certification Date: 09/22/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:15:22

Subject Name: TEST TEST
Date of Birth: 11/19/1977 Age: 31
Gender: F
License #: 00000 VT

Case #: 0000
Time of Operation: 11:15
Location of Incident: VERMONT DEPT OF HEALTH
Town: BURLINGTON
County: CHITTENDEN

Test Operator Name: DARCY M RICHARDSON
Agency: VT DEPT OF HEALTH LAB

Obs. Period Start:		11:15
BLANK TEST	0.000	11:16
CALIBRATION CHECK	PASSED	11:16
SIMULATOR VAPOR	0.099	11:16
BLANK TEST	0.000	11:17
SUBJECT SAMPLE	INCOMPLETE	11:19
BLANK TEST	0.000	11:20
SUBJECT SAMPLE	REFUSED	11:21

Subject refused.
Reason: SUBJECT NOT COOPERATING

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.9°C

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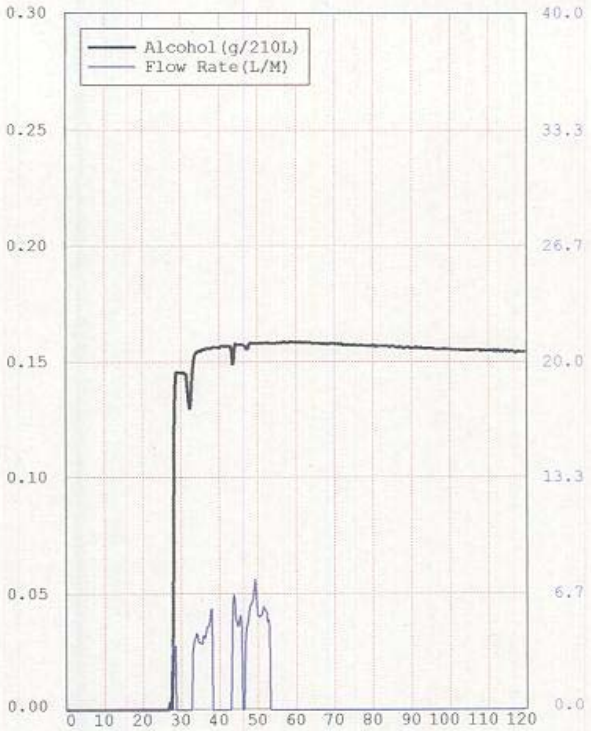
Figure 16: Refusal DUI Subject Report



DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104009
ADDISON COUNTY SO
Certification Date: 09/22/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:06:28

Subject Name: TEST TEST
Date of Birth: 11/19/1977 Age: 31
Gender: F
License #: 0000 VT

Case #: 0000
Time of Operation: 11:07
Location of Incident: DEPT OF HEALTH LAB
Town: BURLINGTON
County: CHITTENDEN

Test Operator Name: DARCY M RICHARDSON
Agency: VT DEPT OF HEALTH

Obs. Period Start:		11:06
BLANK TEST	0.000	11:07
CALIBRATION CHECK	PASSED	11:07
SIMULATOR VAPOR	0.099	11:07
BLANK TEST	0.000	11:08
SUBJECT SAMPLE	INCOMPLETE	11:10
BLANK TEST	0.000	11:11
SUBJECT SAMPLE	REFUSED	11:11

Subject incapable of providing sample.
Reason: SUBJECT CAN'T DO TEST

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.9°C

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Figure 17: Incapable DUI Subject Report

DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104709
ADDISON COUNTY SO
Certification Date: 09/21/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:22:36

Subject Name: TEST TEST
Date of Birth: 08/28/1945 Age: 64
Gender: M
License #: ABC123 BC

Case #: CBA321
Time of Operation: 22:31
Location of Incident: CORNER OF CHURCH AND MAIN
Town: LEICESTER
County: ADDISON

Test Operator Name: AMANDA BOLDUC
Agency: VDHL

Obs. Period Start:		11:22
BLANK TEST	0.000	11:23
CALIBRATION CHECK	PASSED	11:23
SIMULATOR VAPOR	0.100	11:23
BLANK TEST	0.000	11:24
SUBJECT SAMPLE	INCOMPLETE	11:27
BLANK TEST	0.000	11:27
SUBJECT SAMPLE	INCOMPLETE	11:29
BLANK TEST	0.000	11:30
SUBJECT SAMPLE	INCOMPLETE	11:32
BLANK TEST	0.000	11:34
CALIBRATION CHECK	PASSED	11:34
SIMULATOR VAPOR	0.100	11:34
BLANK TEST	0.000	11:35
SUBJECT SAMPLE	INCOMPLETE	11:38
BLANK TEST	0.000	11:38
SUBJECT SAMPLE	INCOMPLETE	11:41
BLANK TEST	0.000	11:41
SUBJECT SAMPLE	INCOMPLETE	11:43

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.6°C

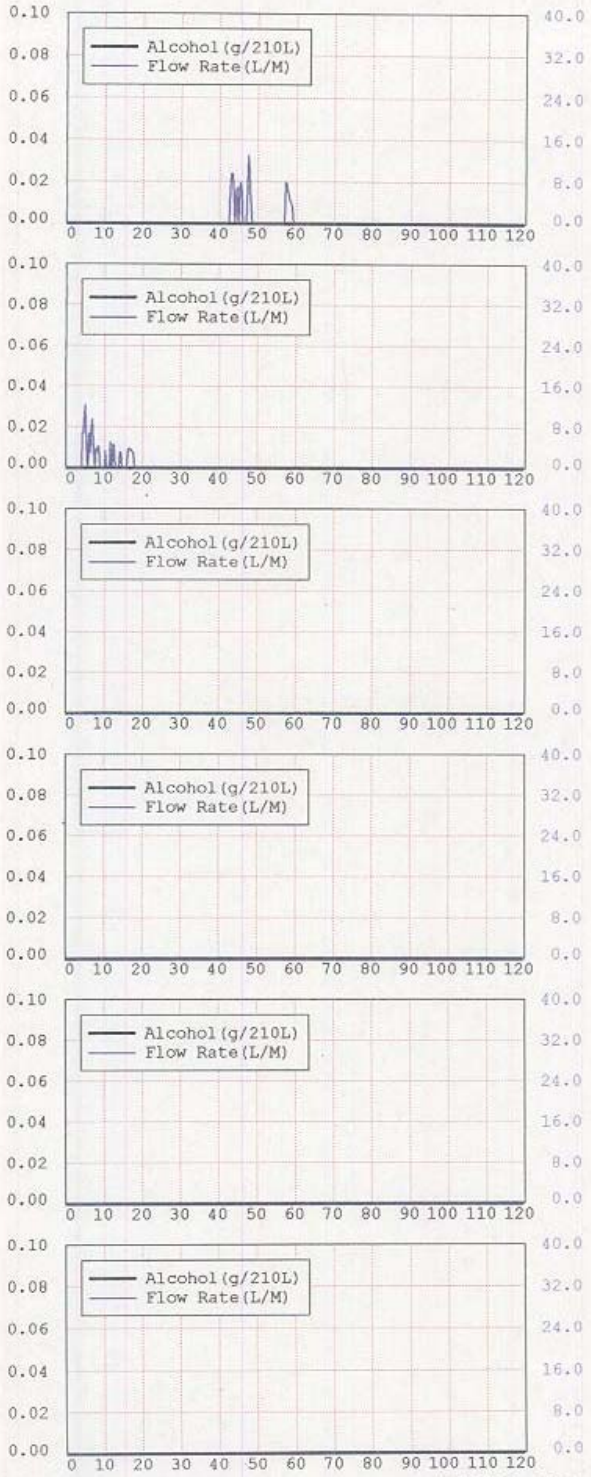

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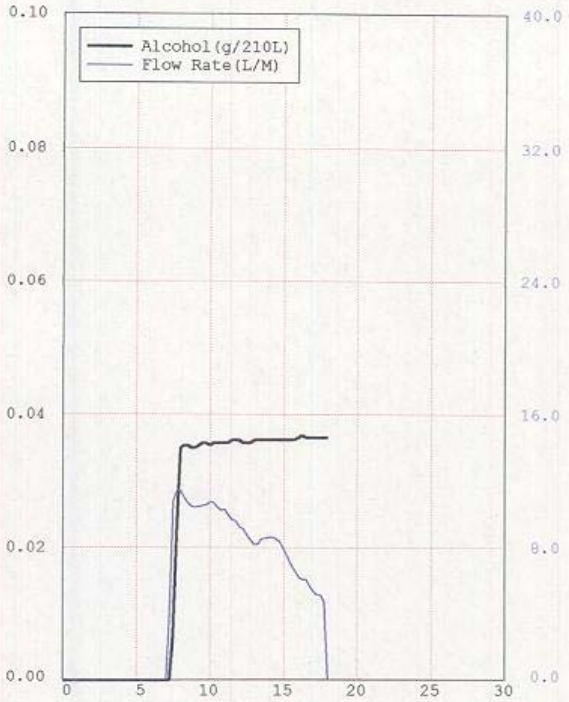
Figure 18: Incomplete sample DUI Subject Report



DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104709
ADDISON COUNTY SO
Certification Date: 09/21/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:10:30

Subject Name: TEST TEST
Date of Birth: 06/19/1987 Age: 22
Gender: M
License #: ABC123 VA

Case #: ABC123
Time of Operation: 19:45
Location of Incident: INTERSECTION
Town: NEW HAVEN
County: ADDISON

Test Operator Name: AMANDA BOLDUC
Agency: VDHL

Obs. Period Start:		11:04
BLANK TEST	0.000	11:11
CALIBRATION CHECK	PASSED	11:11
SIMULATOR VAPOR	0.100	11:11
BLANK TEST	0.000	11:12
SUBJECT SAMPLE	INTERFERENCE	11:13

2nd TEST NOT REQUESTED

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.7°C

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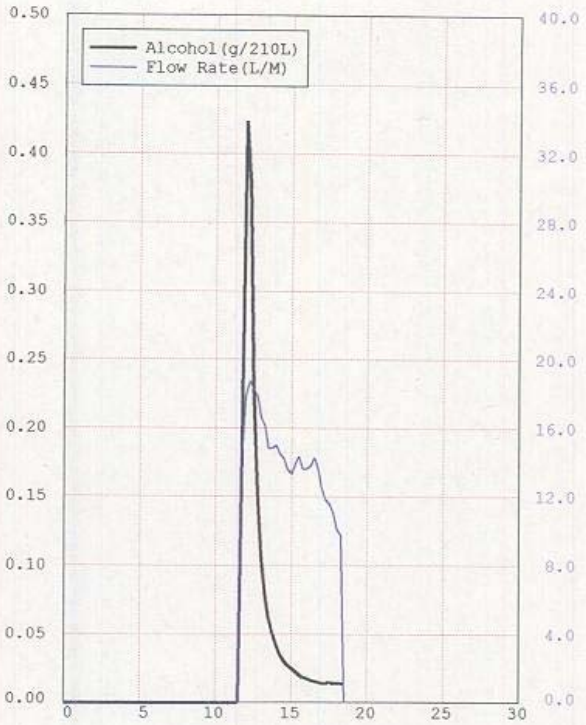
Figure 19: Interference Detected DUI Subject Report



DUI Subject Test

STATE OF VERMONT

DataMaster DMT: 104709
ADDISON COUNTY SO
Certification Date: 09/21/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:15:50

Subject Name: TEST TEST
Date of Birth: 10/06/1980 Age: 29
Gender: F
License #: ABC123 VT

Case #: 123ABC
Time of Operation: 14:55
Location of Incident: I89
Town: MONKTON
County: ADDISON

Test Operator Name: AMANDA BOLDUC
Agency: VDHL

Obs. Period Start:		11:15
BLANK TEST	0.000	11:16
CALIBRATION CHECK	PASSED	11:16
SIMULATOR VAPOR	0.101	11:17
BLANK TEST	0.000	11:17
SUBJECT SAMPLE (Vol=1.6L)	INVALID	11:18

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.6°C

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Figure 20: Invalid DUI Subject Report

Check-In Confirmation Test

STATE OF VERMONT

DataMaster DMT: 104009
ADDISON COUNTY SO
Certification Date: 09/22/2009
Installation Date: 09/22/2009

Date: 10/23/2009
Time: 11:01:10

Subject Name: TEST TEST
Date of Birth: 11/19/1977 Age: 31
Gender: F
License #: 00000 VT

Test Operator Name: DARCY M RICHARDSON
Agency: VT DEPT OF HEALTH

BLANK TEST	0.000	11:02
CALIBRATION CHECK	PASSED	11:02
SIMULATOR VAPOR	0.100	11:02
BLANK TEST	0.000	11:03
SUBJECT SAMPLE (Vol=1.8L)	0.156	11:03

All alcohol values reported in g/210L
Sim. Vapor Concentration 0.100
Sim. Vapor Range 0.095 - 0.105
Simulator Temp 33.8°C

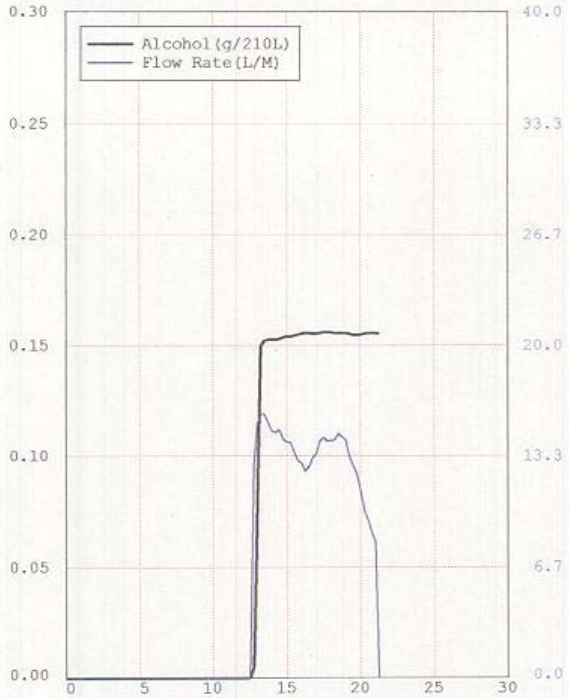

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Figure 21: Check-In Test Report

SECTION V

ERROR MESSAGES AND RESPONSES

ERROR MESSAGES AND RESPONSES

If at any time the instrument displays an error message which cannot be remedied, place a notice on the instrument stating "OUT OF SERVICE" and leave a detailed message to your DataMaster DMT Supervisor regarding the message and any steps taken to clear that message.

FATAL ERRORS:

Although a DataMaster Supervisor or the Vermont Department of Health Laboratory may be able to remedy these error messages, for the purpose of processing, the officer should consider these "fatal errors" and proceed to a different DataMaster.

If another DataMaster is not reasonably available, blood may be drawn.

When encountering fatal error messages post "OUT OF SERVICE" on the DataMaster DMT and leave a message for your DataMaster Supervisor.

1) **"STANDARD OUT OF RANGE"** Simulator concentration is not within +/- 5% of the certified concentration.

2) **"SIMULATOR TEMPERATURE TOO HIGH or TOO LOW"** Simulator temperature is not within 33.5 and 34.5°C.

3) **"CALIBRATION CHECK ERROR"** The instrument is not reading the calibration correctly.

4) "**SAMPLE CHAMBER NOT TO TEMPERATURE"** Sample chamber is not between 45°C and 55°C.

5) **"BREATH TUBE NOT TO TEMPERATURE"** The breath tube temperature is not between 30°C and 50°C.

6) **"FILTER WHEEL ERROR"** The filter wheel is not activating properly.

7) "**FILTER # (1,2,3) WON'T ZERO"** One of the filters is not reading properly.

8) **"DETECTOR OVERFLOW"** The detector is out of range or the subject's BrAC is greater than 0.600

NON-FATAL ERRORS:

The following errors may be remedied by the test operator. If after following these instructions the error remains, post "OUT OF SERVICE" and leave a detailed message to your DataMaster Supervisor regarding when the error occurred and what steps were taken to try to remedy it.

Proceed to a different DataMaster, if one is not reasonably available you may have blood drawn. If the error has been cleared, begin the testing procedure again.

1) **Keyboard does not function.**

   A) Disconnect keyboard from the back of the instrument.

   B) Reconnect the keyboard into the USB port at the back of the instrument.

   C) If available try a different USB keyboard.

2) "**AMBIENT FAIL**" The instrument is detecting alcohol in the ambient air.

   A) Remove the mouthpiece from the breath tube.

   B) Remove possible contamination sources from the processing area.

   C) Open windows or use a fan to draw fresh air into the room if possible.

3) "**BLANK ERROR"** The instrument is unable to reach zero apparent alcohol.

   A) Remove the mouthpiece from the breath tube.

   B) Remove possible contamination sources from the processing area.

   C) Open windows or use a fan to draw fresh air into the room if possible.

4) **"PUMP ERROR"** The flow detector does not detect pump operation or the pump speed is incorrect.

   A) Ensure the breath tube is free from obstruction during a purge cycle.

5) **"COMMUNICATION ERROR"** The embedded microprocessor is not communicating with the controller board correctly.

   A) Turn the instrument off. Wait one (1) minute and turn the instrument on.

6) "**PLEASE BLOW**" flashes but instrument does not accept a sample.

   A) Refer to graphic display to ensure subject is providing adequate air flow.

   B) Remove the mouthpiece from the breath tube and replace with a new mouthpiece.

   C) Have the subject attempt to provide another breath sample.

   D) If error remains, turn instrument off for one minute and turn back on.

7) **"UNABLE TO ESTABLISH COMMUNICATION TO PRINTER"** The instrument is unable to communicate with the printer.

   A) Ensure the USB cable is connected to both the DataMaster DMT and the printer.

   B) Press the "COPY" button to reprint reports.

   C) If after several attempts you are unable to get a readable report contact your DataMaster Supervisor or DataMaster Records Administrator. They may be able to remedy the printer problem and will be able to access prior reports.

8) "**RFI DETECTED**" A radio frequency transmission has been detected in the testing environment.

   A) Turn radio off and ensure that there are no active transmitters in the processing area.

   B) After beginning a new test, answer "Y" to "USE PREVIOUS DATA? YES or NO".

9) **"SIMULATOR TIME OUT"** The simulator took too long to reach plateau while running a Simulator Vapor test.

   A) Attempt the test again.

OTHER ERROR CONDITIONS:

The following error conditions should be documented but may not necessitate moving to a different DataMaster. A detailed message should be left for the DataMaster Supervisor to remedy the situation for future use.

1) **Incorrect time appears on the DataMaster DMT**.

   A) When the DataMaster DMT reports print, place a single line through the time printed and hand write the correct time on all three copies of the report.

   B) Mark this line with your initials and date.

   C) Document on your processing form the time discrepancy.

2) **Incorrect date appears on the DataMaster DMT**.

   A) When the DataMaster DMT reports print, place a single line through the date printed and hand write the correct date on all three copies of the report.

   B) Mark this line with your initials and date.

   C) Document on your processing form the date discrepancy.

3) **Report is incomplete or unreadable**.

   A) If the printer is jammed, gently remove the paper. Reset the printer and press the "COPY" button on the main screen.

   B) If after several attempts you are unable to get a readable report contact your DataMaster Supervisor or DataMaster Records Administrator. They may be able to remedy the printer problem and will be able to access prior reports.

4) "**INCOMPLETE**" is displayed where the subject's alcohol result should be. The subject failed to provide an adequate breath sample within two minutes.

   A) Instruct the subject again on proper delivery of a breath sample.

   B) If it is clear that the subject is unable to provide an adequate breath sample select the option for "INCAPABLE", have blood drawn.

   C) If it is clear that the subject is unwilling to provide an adequate breath sample select the option for "REFUSAL".

5) "**INTERFERENCE**" is displayed where the subject's alcohol result should be. The ratio between the measurements at the three filters is not what is expected for ethanol.

A) When DataMaster DMT prompts “SUBJECT TAKE SECOND TEST? YES or NO” select “YES” and have subject provide a second sample.

B) Remove possible contamination sources from the processing area.

C) Open windows or use a fan to draw fresh air into the room if possible.

D) If “INTERFERENCE DETECTED” message remains you may have subject’s blood drawn.

6) “**INVALID SAMPLE**” An abnormal breath profile has been obtained during sample delivery.

A) Restart the testing process from the “RUN” screen including the fifteen minute observation period.

B) Instruct the subject again on proper delivery of a breath sample.

7) **“SUCK BACK ERROR”** Air flow is in the reverse direction during a subject sample delivery.

A) Restart the testing sequence. When prompted to use previous timer and use previous data, select “YES.”

B) Instruct the subject again on proper delivery of a breath sample.