1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the Annual Preventative Maintenance of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices.

1.2. The scope of this procedure includes annual inspection and testing of evidentiary breath testing instruments ~~currently~~ in service at police agencies.

2.0 Responsibility

2.1. All instruments shall be testing annually by trained laboratory staff. Any instrument failing their annual preventative maintenance shall be returned to VDHL for service as necessary. Repaired on Site or

2.2. It is responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.3. This procedure will be reviewed annually by toxicology staff. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. All reports generated during this procedure must be retained, this includes those displaying error messages or failures. One copy of the report will be retained by the agency in which the instrument is located.

4.0 Procedure Steps

4.1. Materials and Supplies necessary for procedure.

4.1.1. DataMaster DMT Instrument.

4.1.2. NIST traceable thermometer.

4.1.3. Simulator air pressure gauge.

4.1.4. Handheld radio.

4.1.5. Field service tool kit.

4.1.6. Spare parts as necessary.

4.2. Preparation

4.2.1. Unscrew plug and insert thermometer into Simulator head. Allow thermometer to equilibrate. Ensure simulator temperature is 34.0ºC. Ensure DMT readout matches ~~NIST~~ thermometer readout. Adjust as necessary. Reinstall the plug when finished.

4.2.2. ~~Remove simulator head from jar.~~ Inspect simulator jar for cracks and chips. Replace jar as necessary.

4.2.3. Replace the O-ring in the simulator head.

4.2.4. ~~Thread the simulator head onto the simulator jar.~~ Using the pressure gauge, check the simulator for leaks. If the simulator leaks, repair or replace as necessary.

4.2.5. ~~Reconnect the simulator to the DMT~~.

4.2.6. Unscrew and open the top of the instrument. Inspect all tubing and wire connections. Ensure all are properly seated and free from kinks, cracks or other problems. Correct issues as necessary. ~~Once complete, close up the instrument.~~

4.2.7. On the touch screen, press the NPAS logo to open the drop down menu. Select: Protocols → Annual Preventative Maintenance. Enter password. Fill in all fields on the data entry screen as required.

4.2.8. The instrument will now complete the Annual Preventative Maintenance Protocol. Follow all instructions on the screen. The instrument will only continue on to the next step once each check passes. The first step is to perform a diagnostic check.

4.2.9. The second step is the radio frequency interference check. When prompted to perform the RFI check, if the agency has a console radio located in their building, have dispatch key all commonly used frequencies. The instrument should not react to dispatch frequencies. Key a handheld radio within two feet of the instrument. An RFI should be reported. If the instrument's radio frequency sensitivity is incorrect, reset the sensitivity and begin the test again.

4.2.10. The final step is a sample acceptance check.

4.2.10.1. Press "OK" when you are ready to start the test. The DMT will run through a series of quality control checks.

4.2.10.2. When prompted "Please Blow" and an intermittent tone is heard, insert a new mouthpiece into the breath tube.

4.2.10.3. Provide breath samples. The bottom left corner of the screen will display the type of breath to deliver.

4.2.10.4. Shallow Breath Test: Blow lightly into the mouth piece so that flow is visible on the display, but the tone remains intermittent. The test is considered failed if the DMT accepts a shallow breath.

4.2.10.5. Intermittent Breath Test: Blow and stop repeatedly. The test is considered failed if the DMT accepts an intermittent breath.

4.2.10.6. Suck Back Test: Inhale gently through the breath tube for two to three seconds. You should feel some slight resistance. The test is considered failed only if the DMT accepts a suck back breath as a valid sample or if while

sucking back, alcohol is reported. If a suck back test fails, replace the breath tube and repeat the test as necessary.

4.2.10.7. Alcohol Free Test: Blow normally until at least 1.5L of air has been delivered. The test is considered failed if the result for alcohol was 0.002 g/210L or greater, or if the breath sample was not accepted and at least 1.7L of air has been delivered.

4.2.10.8. Once the Sample Acceptance test is complete, the instrument will prompt "Did Instrument Pass All Sample Acceptance Checks? Yes/No" If all checks passed, select "Yes". If any of the checks failed, select "No". When prompted, type in which check failed and why.

4.2.11. Once the protocol is complete, the instrument will prompt for technician signature. Sign in the box and press "finished". Two copies of the report will now print.

4.3. Record Keeping

4.3.1. When the APM reports print, file one copy with the onsite maintenance records. One copy of the report will be returned to the laboratory and reviewed by another technician.

4.3.2. In the DataMaster Maintenance Logbook (Alc 803) document your name, date APM performed and note any corrective actions that may have been performed.

4.3.3. In the DataMaster Operators Logbook (Alc 603) document your name, under the "subject" column write "test/APM" and enter the result of the simulator vapor test.

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Annual Preventative Maintenance to be a high priority and request service as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. The standard approach to correct a problem would be to first repeat the test to confirm the problem. Consult the service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event.

6.2. If the problem is not correctable in the field or a repair or technical evaluation is needed, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be started. The instrument shall be returned to the laboratory for further evaluation. Once the repair is complete, the TSI is finished and placed in the instrument's file. This procedure may be begun again when the problem is resolved.

7.0 Preventative Maintenance and Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agencies instrument requires repair and cannot be returned to service in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. Chemical Hygiene Plan and Safety Manual (D-AD-003).

8.2. DataMaster DMT Service Manual.

8.3. Appendix A: Acceptable Annual Preventative Maintenance Report.

Appendix A
Acceptable Annual Preventative Maintenance Report