



State of Vermont
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DMT Technical Support Inquiry

DMT Serial #: 100146
Agency/Site: VSP Middlesex
Date: 3/25/2021
DMT Supervisor: Crista Maurice

Problem:

DMT exhibited multiple cal check errors. The DMT was removed from service remotely and DMT Supervisors were notified. The instrument was returned to the VFL for service.

Work Performed:

On 3/25/21, the detector block was removed and disassembled. The lubricant was cleaned off all detector block components with isopropanol and allowed to dry. A second cleaning was performed with isopropanol followed by foam swabs and compressed air. The detector block was reassembled on 3/26/21 and 103 filter wheel cycles were completed without error and detectors voltages were adjusted and allowed to stabilize over the weekend. On 3/29/2021, instrument stability was tested by running a diagnostic, followed by a 3 minute air purge, another diagnostic, a 3 minute purge with an old 0.1 sim solution, and a final diagnostic test. A successful calibration adjustment was subsequently performed. Due to the sim solution failing low multiple times, a new lot of cal check solution was put into service. A successful calibration check procedure and certification were performed on 3/30/21. The instrument is now ready for installation.

Performed On Site ☐
Performed In house ☒

Performed By: Jeff Dukette *JD*

Date: 3/30/2021

Technical Reviewer: *AS*

Date: 3/30/2021

Administrative Reviewer: Amanda B. Orde *AS 4/2/21*

Date: 3/31/21

Director Reviewer: *EL* *4/2/2021*

Date: 3/31/2021

CALIBRATION REPORT

DataMaster DMT: 100146
Calibration Date: 03/29/2021
Calibrated by: JEFFERY DUKETTE
Lot: 21-02-100



Ca	=	0.100		
CAL	=	0.958060	0.800	<= CAL < 1.200
b1	=	0.000	0.000	<= b1 < 0.004
b2	=	0.006	0.002	<= b2 < 0.010
b3	=	0.000	0.000	<= b3 < 0.004
Xq	=	0.102	0.050	<= Xq < 0.200
a21	=	1.223884	1.050	<= a21 < 1.300
a31	=	0.545095	0.300	<= a31 < 0.800

DI H₂O

BL-DMT01072020 34.00°C

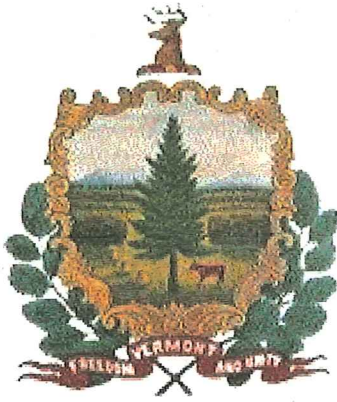
JSD 3/29/21

Performed by

JSD

Date

03/29/2021



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 03/29/2021

Time: 10:36:08

SUPERVISOR NAME:

JSD CAL CHECK

SOLUTION LOT #: ACS201912C

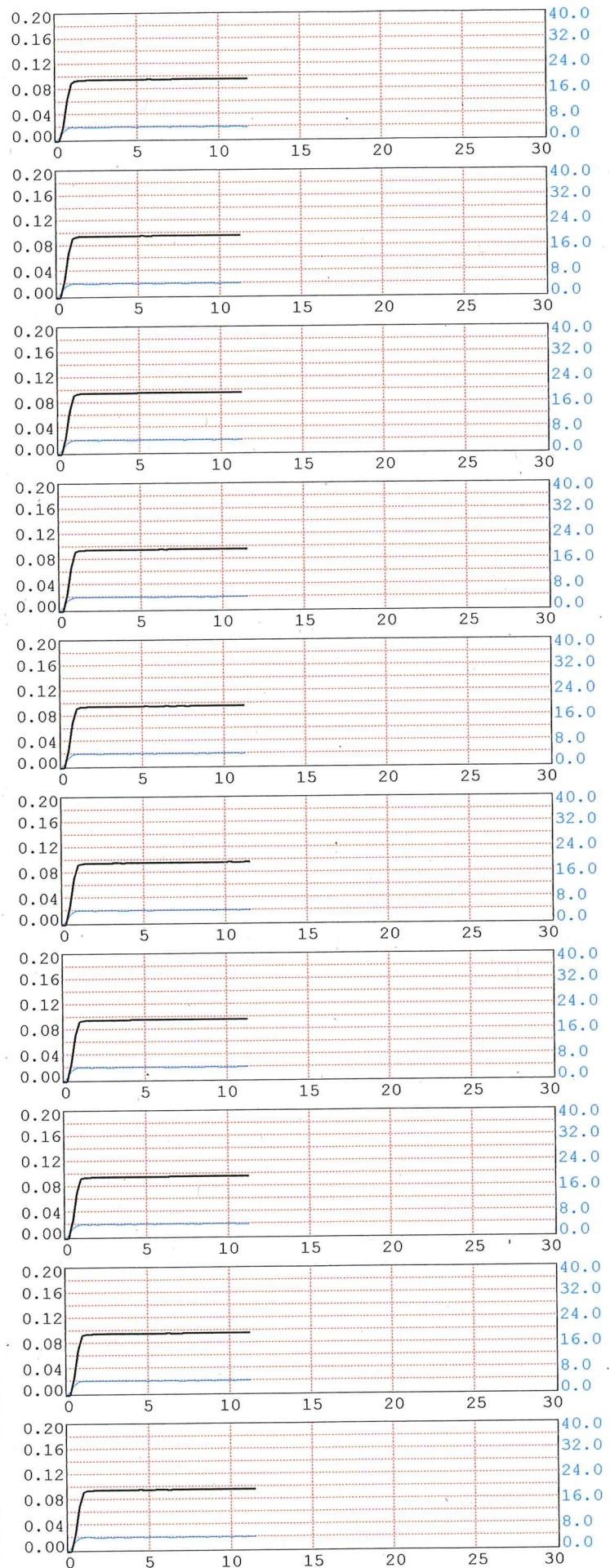
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	10:37
CALIBRATION CHECK	PASSED	10:37
SIMULATOR VAPOR 34.0°C	0.097	10:37
SIMULATOR VAPOR 34.0°C	0.097	10:38
SIMULATOR VAPOR 34.0°C	0.097	10:39
SIMULATOR VAPOR 34.0°C	0.096	10:40
SIMULATOR VAPOR 34.0°C	0.096	10:41
SIMULATOR VAPOR 34.0°C	0.097	10:42
SIMULATOR VAPOR 34.0°C	0.097	10:43
SIMULATOR VAPOR 34.0°C	0.097	10:44
SIMULATOR VAPOR 34.0°C	0.097	10:45
SIMULATOR VAPOR 34.0°C	0.096	10:46
BLANK TEST	0.000	10:47

Average = 0.096
Std Dev = 0.0004

Fails low. Reran

JSD 3/29/21





ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 03/29/2021

Time: 10:49:04

SUPERVISOR NAME:

JSD CAL CHECK

SOLUTION LOT #: ACS201912C

SOLUTION CONCENTRATION: 0.100

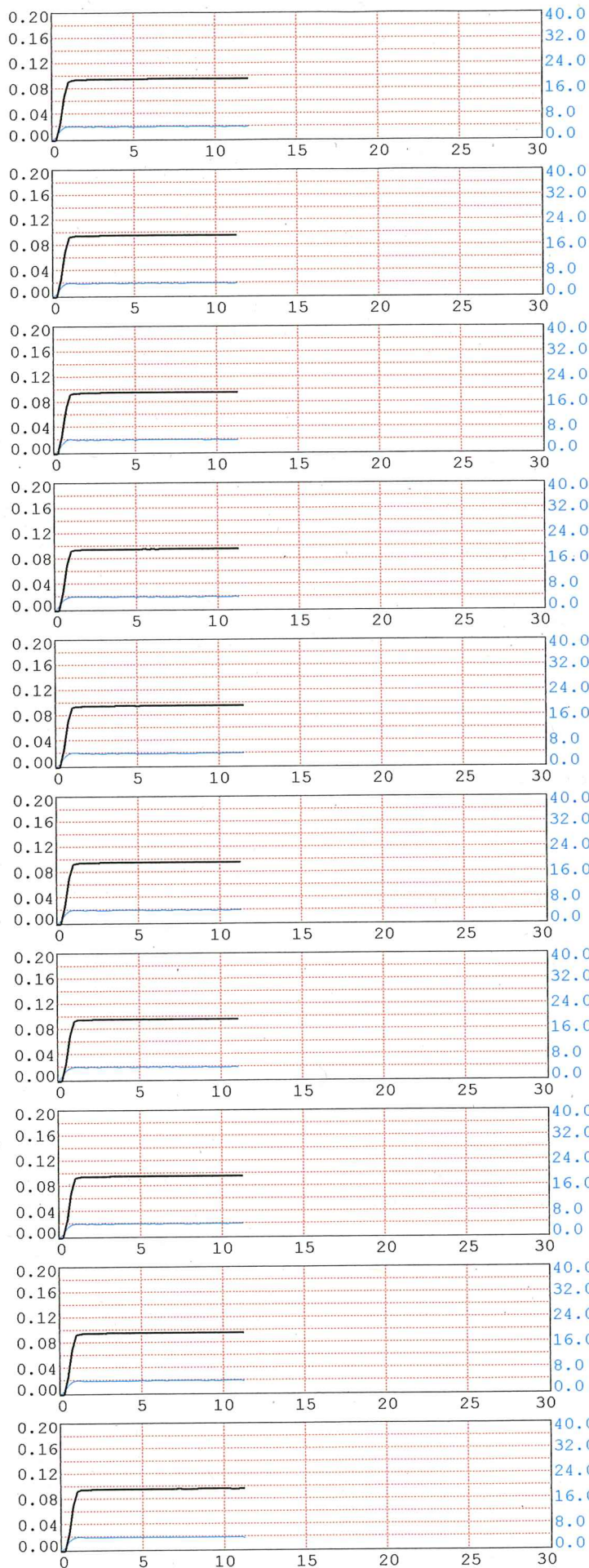
BLANK TEST	0.000	10:49
CALIBRATION CHECK	PASSED	10:50
SIMULATOR VAPOR 34.0°C	0.096	10:50
SIMULATOR VAPOR 34.0°C	0.096	10:51
SIMULATOR VAPOR 34.0°C	0.097	10:52
SIMULATOR VAPOR 34.0°C	0.097	10:53
SIMULATOR VAPOR 34.0°C	0.097	10:54
SIMULATOR VAPOR 34.0°C	0.097	10:55
SIMULATOR VAPOR 34.0°C	0.097	10:56
SIMULATOR VAPOR 34.0°C	0.096	10:57
SIMULATOR VAPOR 34.0°C	0.097	10:58
SIMULATOR VAPOR 34.0°C	0.097	10:59
BLANK TEST	0.000	11:00

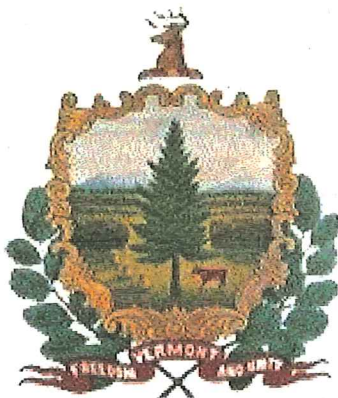
Average = 0.096

Std Dev = 0.0004

Fails low. Solution changed

JSD 3/29/21





ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 03/30/2021

Time: 10:23:11

SUPERVISOR NAME:

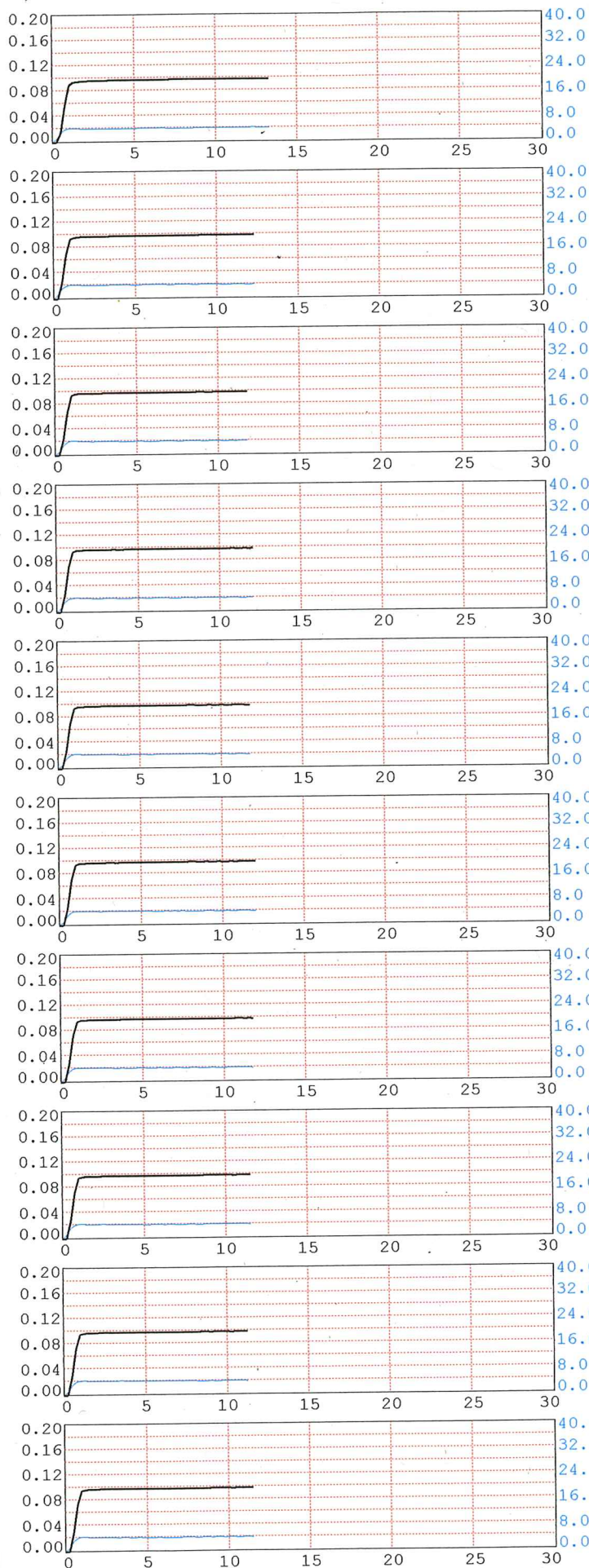
JSD CAL CHECK

SOLUTION LOT #: ACS202010E

SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	10:24
CALIBRATION CHECK	PASSED	10:24
SIMULATOR VAPOR 34.0°C	0.098	10:24
SIMULATOR VAPOR 34.0°C	0.099	10:25
SIMULATOR VAPOR 34.0°C	0.099	10:26
SIMULATOR VAPOR 34.0°C	0.099	10:27
SIMULATOR VAPOR 34.0°C	0.099	10:28
SIMULATOR VAPOR 34.0°C	0.099	10:29
SIMULATOR VAPOR 34.0°C	0.099	10:30
SIMULATOR VAPOR 34.0°C	0.098	10:31
SIMULATOR VAPOR 34.0°C	0.099	10:32
SIMULATOR VAPOR 34.0°C	0.099	10:33
BLANK TEST	0.000	10:34

Average = 0.098
Std Dev = 0.0004



CERTIFICATION REPORT

DataMaster DMT: 100146
Calibration Date: 03/29/2021
Certification Date: 03/30/2021
Certified by: JEFFERY DUKETTE



Diagnostic Results

VERSIONS

DMT: 2.06
PIC: 2.08
Modem: 2.6
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.2°C
Breath Tube = 45.6°C
Digital Sim = 34.0°C

SETTINGS

Lamp Voltage = 1.69 V
Cooler Voltage = 1.71 V
Bias Voltage = 80 V
Chopper Freq = 552 Hz

PUMP INFO

Flow Rate = 5.084 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX (V)	0.0533	0.0565
MIN (V)	0.0520	0.0553

FILTER INFO

Filter 1	0.056	Zero = true
Filter 2	0.276	Zero = true
Filter 3	0.558	Zero = true

CALIBRATION CHECK

Xq = 0.102 0.52%

Options

OPTIONS

Units

Alcohol..... g/210L

Simulator

Tolerance Check..... yes
Standard Type..... wet
Nominal..... 0.100
Digital Simulator..... Guth

Subject

Ask Questions..... yes
Number of Tests..... 2
Alcohol Display..... yes
Volume Display..... yes
Query Refusal..... yes
Copies..... 3
Simulator Before..... yes
Simulator Between..... yes
Simulator After..... no
Observation Time..... 0

Supervisor

Number of Tests..... 10

Calibration

Standard Type..... wet
Nominal..... 0.100
Nominal (Dry Gas)..... 0.100
Number of Tests..... 1

Printer

Printer On..... yes

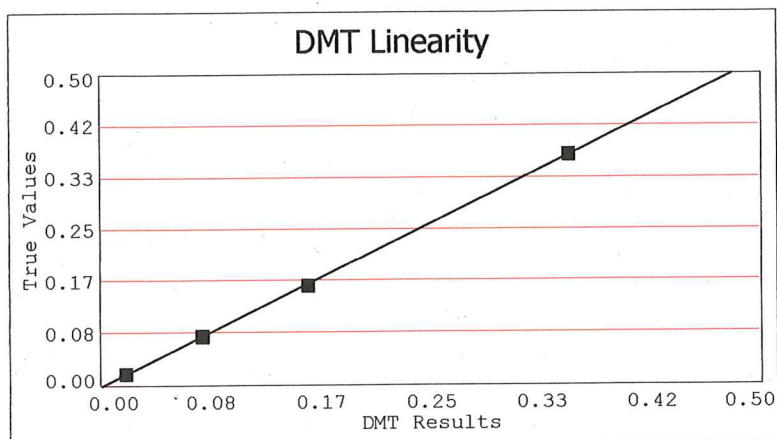
Software Configuration

Data Collection..... yes

Linearity Check Results

True Value	Reported Average	Std Dev
0.020 g/210L	0.019 g/210L	0.0000
Lot # 20-08-020		
0.080 g/210L	0.077 g/210L	0.0003
Lot # 20-12-080		
0.161 g/210L	0.157 g/210L	0.0000
Lot # 20-09-160		
0.371 g/210L	0.354 g/210L	0.0003
Lot # 20-16-360		

$R^2 = 0.9999$



Acetone Interference Test

Lot # 20-13-08A2

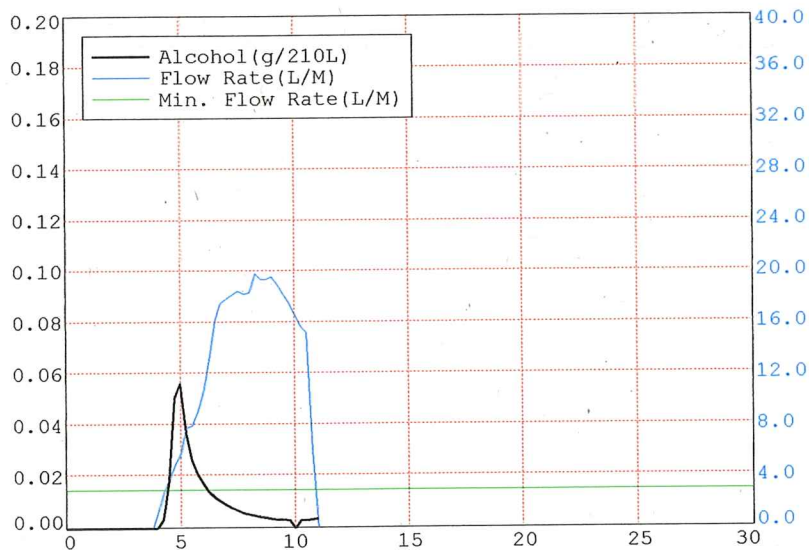
Interference Detected

Mouth Alcohol Test

Mouth Alcohol Detected

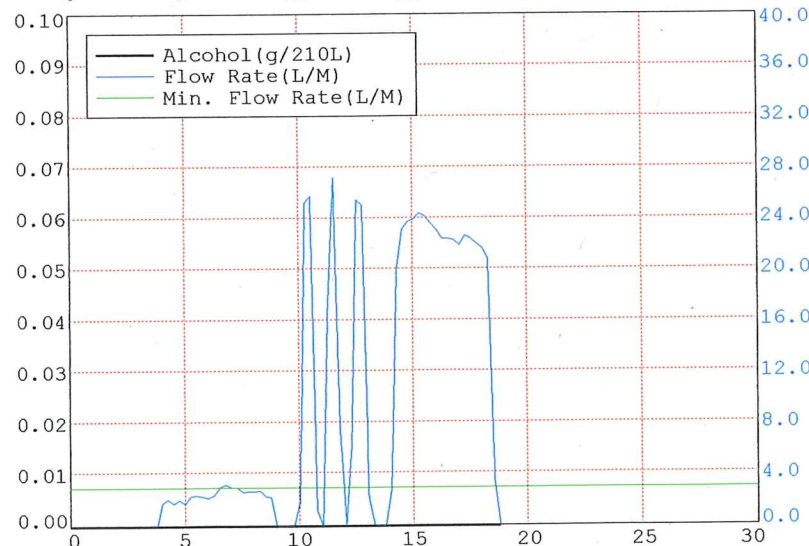
RF Detection Test

Passed



Sample Acceptance Test

Passed



CERTIFICATION PASSED

Performed by



Date 03/30/2021

Reviewed by



Date 3/30/2021

DMT Serial Number #100146

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03/30/2021 3:09 PM

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JSD

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DIAGNOSTIC RESULT



DataMaster DMT: 100146
Location: MIDDLESEX VSP
Calibration Date: 08/03/2020
Certification Date: 08/03/2020
Installation Date: 08/07/2020
Test Date: 03/29/2021
Test Time: 10:13:49

VERSIONS

DMT: 2.06
PIC: 2.08
Modem: 2.6
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 45.2°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.69 V
Cooler Voltage = 1.71 V
Bias Voltage = 80 V
Chopper Freq = 550 Hz

PUMP INFO

Flow Rate = 4.956 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX (V)	0.0404	0.0451
MIN (V)	0.0390	0.0439

FILTER INFO

Filter 1	0.044	Zero = true
Filter 2	0.263	Zero = true
Filter 3	0.536	Zero = true

CALIBRATION CHECK

Xq = 0.101 20.81%

*SIM NOT ~~3~~ JSD 3/30/21
plugged in for diags*

JSD 3/30/21

*diag = diagnostic test
JSD 4/2/21*

DIAGNOSTIC RESULT

DataMaster DMT: 100146
Location: MIDDLESEX VSP
Calibration Date: 08/03/2020
Certification Date: 08/03/2020
Installation Date: 08/07/2020
Test Date: 03/29/2021
Test Time: 10:19:27



VERSIONS

DMT: 2.06
PIC: 2.08
Modem: 2.6
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 41.5°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.69 V
Cooler Voltage = 1.71 V
Bias Voltage = 80 V
Chopper Freq = 552 Hz

PUMP INFO

Flow Rate = 5.007 L/M

DETECTOR INFO

	ON	OFF
MAX (V)	0.0441	0.0488
MIN (V)	0.0429	0.0478

FILTER INFO

Filter 1	0.048	Zero = true
Filter 2	0.267	Zero = true
Filter 3	0.541	Zero = true

CALIBRATION CHECK

Xq = 0.101 21.13%

Run after 3 minute purge

JSO 3/29/21

DIAGNOSTIC RESULT

DataMaster DMT: 100146
Location: MIDDLESEX VSP
Calibration Date: 08/03/2020
Certification Date: 08/03/2020
Installation Date: 08/07/2020
Test Date: 03/29/2021
Test Time: 10:25:52



VERSIONS

DMT: 2.06
PIC: 2.08
Modem: 2.6
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.8°C
Breath Tube = 42.9°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.69 V
Cooler Voltage = 1.71 V
Bias Voltage = 80 V
Chopper Freq = 552 Hz

PUMP INFO

Flow Rate = 4.951 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX (V)	0.0482	0.0535
MIN (V)	0.0470	0.0522

FILTER INFO

Filter 1	0.053	Zero = true
Filter 2	0.273	Zero = true
Filter 3	0.546	Zero = true

CALIBRATION CHECK

Xq = 0.101 20.92%

Run after 3 min purge w/ old 0.1 sim sol'n

JSD 3/29/21

3/29/21

JSD 3/29/21

100146

Bolduc, Amanda <Amanda.Bolduc@vermont.gov>

Thu 3/25/2021 12:14 PM

To: Dukette, Jeffery <Jeffery.Dukette@vermont.gov>; DPS - DMT <DPS.DMT@vermont.gov>

Jeff,

Please use the remote remove from service function in HOST to put the Middlesex VSP DMT 100146 out of service.

Amanda Bolduc, MFS

Toxicology Section Supervisor

Vermont Forensic Laboratory

Department of Public Safety

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Amanda.bolduc@vermont.gov

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100146

JD

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DMT Out of Service

DPS - DMT <DPS.DMT@vermont.gov>

Thu 2021-03-25 12:30 PM

To: Maurice, Crista <Crista.Maurice@vermont.gov>; Szarejko, Joseph T <Joseph.T.Szarejko@vermont.gov>; Delphia, Chelsea <Chelsea.Delphia@vermont.gov>

Good afternoon,

While reviewing the DMT records we have observed repeated cal check errors on the DMT at the Middlesex Barracks. This instrument has been removed from service remotely and will be picked up by VFL staff for maintenance.

Thanks,

Jeff