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Department of Public Safety
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DMT Technical Support Inquiry

DMT Serial #: 100146
Agency/Site: Middlesex VSP
Date: 3/17/2022
DMT Supervisor: Chelsea Delphia

Problem:

On 3/17/22, a trooper was unable to complete DUI processing due to cal check errors. The DMT was brought to the lab on 3/22/22 by JSD.

Work Performed:

On 4/26/22, the detector block was removed, disassembled, and cleaned with Alconox and water. It was allowed to sit to dry overnight before being reassembled the following day with small amounts of lubricant on the back of the washers. The tension on the stepper motor was adjusted and a new filter wheel solenoid was tried (though not kept) in order to address filter wheel issues. A different filter wheel was tried, but the original was ultimately kept since the new filter wheel did not resolve the errors. The filter wheel errors were ultimately resolved on 4/28/22 by replacing the quartz wheel with a previously used one. 60 filter wheel cycles were completed without any errors. The detector voltage was optimized and the instrument was allowed to stabilize. On 5/4/22, the instrument underwent a successful calibration adjustment. The cal check solution failed low twice and so was replaced. However, the DMT failed the certification due to a climbing Xq value, which caused a cal check error at the mouth alcohol test portion. Failed certs do not print and the raw data is not retained. No record available. On 5/5/22, the original quartz wheel was placed back in the instrument after washing with water and more lubricant was added to the quartz wheel washer. 52 filter wheel cycles were successfully completed. The detector voltage was optimized and the instrument was allowed to stabilize. On 5/10/22, a successful calibration adjustment and certification were performed. The instrument is now ready for installation at the agency.

**available 828 5/17/2022*

Performed On Site ☐
Performed In house ☒

Performed By: Sarah Stratton 828

Date: 5/12/2022

Technical Reviewer: [Signature]

Date: 5/17/22

Administrative Reviewer: [Signature]

Date: 5/17/22

Director Reviewer: [Signature]

Date: 5/17/2022

CALIBRATION REPORT

DataMaster DMT: 100146
Calibration Date: 05/10/2022
Calibrated by: SARAH STRATTON
Lot: 21-14-100



Ca	=	0.100		
CAL	=	0.966933	0.800	<= CAL < 1.200
b1	=	0.000	0.000	<= b1 < 0.004
b2	=	0.007	0.002	<= b2 < 0.010
b3	=	0.000	0.000	<= b3 < 0.004
Xq	=	0.096	0.050	<= Xq < 0.200
a21	=	1.220990	1.050	<= a21 < 1.300
a31	=	0.558035	0.300	<= a31 < 0.800

DI Water

BL-DMT10222021 34.00°C SJS 5/10/2022

Performed by

SJS SJS

Date

05/10/2022



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 05/10/2022

Time: 14:56:40

SUPERVISOR NAME:

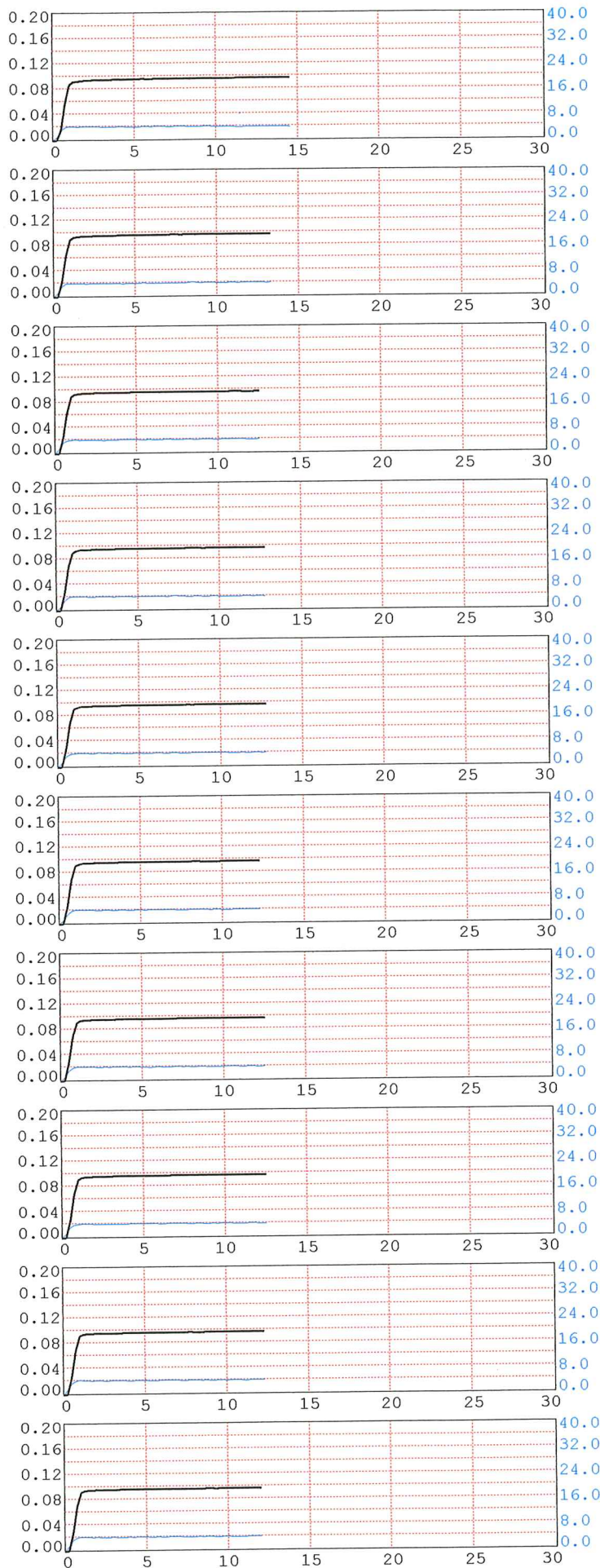
SGS CAL CHECK

SOLUTION LOT #: 21GP41165

SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	14:57
CALIBRATION CHECK	PASSED	14:57
SIMULATOR VAPOR 34.0°C	0.097	14:58
SIMULATOR VAPOR 34.0°C	0.098	14:59
SIMULATOR VAPOR 34.0°C	0.097	15:00
SIMULATOR VAPOR 34.0°C	0.098	15:01
SIMULATOR VAPOR 34.0°C	0.098	15:02
SIMULATOR VAPOR 34.0°C	0.097	15:03
SIMULATOR VAPOR 34.0°C	0.098	15:04
SIMULATOR VAPOR 34.0°C	0.098	15:05
SIMULATOR VAPOR 34.0°C	0.097	15:06
SIMULATOR VAPOR 34.0°C	0.097	15:07
BLANK TEST	0.000	15:08

Average = 0.097
Std Dev = 0.0005



CERTIFICATION REPORT

DataMaster DMT: 100146
Calibration Date: 05/10/2022
Certification Date: 05/10/2022
Certified by: SARAH STRATTON



Diagnostic Results

VERSIONS

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

TEMPERATURES

Sample Chamber = 49.0°C
Breath Tube = 40.8°C
Digital Sim = 34.0°C

SETTINGS

Lamp Voltage = 1.64 V
Cooler Voltage = 1.64 V
Bias Voltage = 80 V
Chopper Freq = 558 Hz

PUMP INFO

Flow Rate = 5.022 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX (V)	-0.0591	-0.0545
MIN (V)	-0.0602	-0.0555

FILTER INFO

Filter 1	-0.055	Zero = true
Filter 2	0.167	Zero = true
Filter 3	0.456	Zero = true

CALIBRATION CHECK

Xq = 0.096 0.27%

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

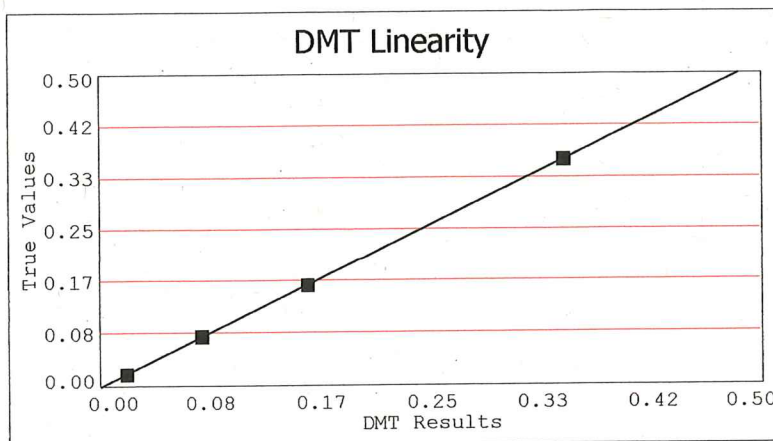
Printer

Printer On..... yes
Software Configuration
Data Collection..... yes

Linearity Check Results

True Value	Reported Average	Std Dev
0.020 g/210L	0.020 g/210L	0.0000
Lot # 21-01-020		
0.080 g/210L	0.077 g/210L	0.0000
Lot # 20-12-080		
0.162 g/210L	0.157 g/210L	0.0004
Lot # 21-07-160		
0.363 g/210L	0.350 g/210L	0.0003
Lot # 21-13-360		

$R^2 = 1$



Acetone Interference Test

Lot # 22-09-08A2

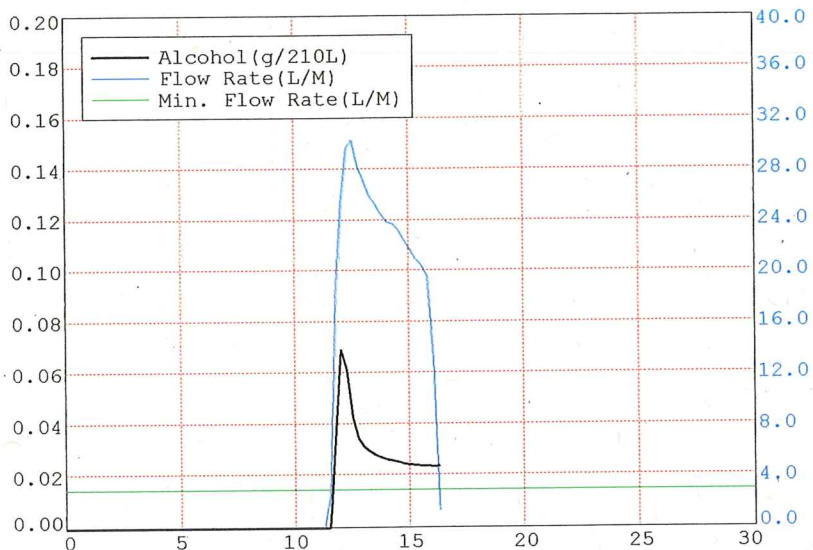
Interference Detected

Mouth Alcohol Test

Mouth Alcohol Detected

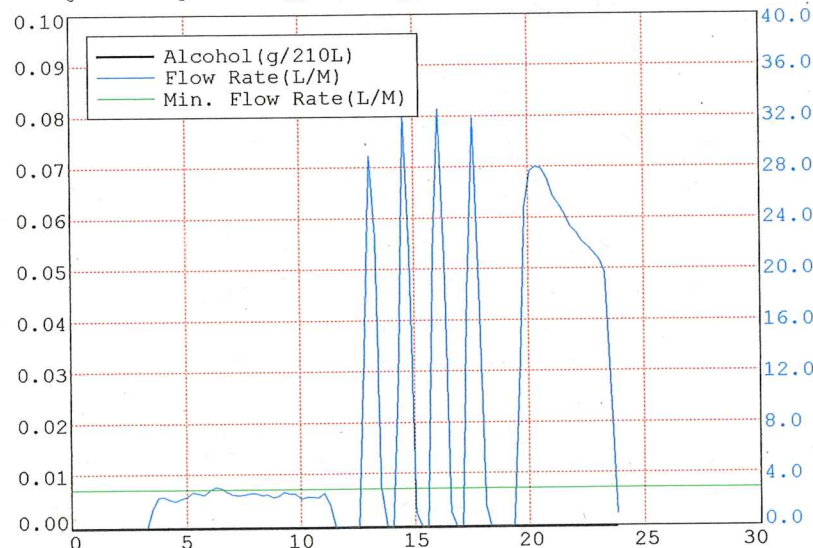
RF Detection Test

Passed



Sample Acceptance Test

Passed



CERTIFICATION PASSED

Performed by

8228 8228

Date

05/10/2022

Reviewed by

[Signature]

Date

5/17/22

DMT Serial Number #100146

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05/10/2022 4:14 PM

100146

8228

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DIAGNOSTIC RESULT

DataMaster DMT: 100146
Location:
Calibration Date: 05/04/2022
Certification Date:
Installation Date:
Test Date: 05/09/2022
Test Time: 09:21:20



VERSIONS

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

TEMPERATURES

Sample Chamber = 49.0°C
Breath Tube = 42.4°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.64 V
Cooler Voltage = 1.64 V
Bias Voltage = 80 V
Chopper Freq = 556 Hz

PUMP INFO

Flow Rate = 4.995 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX (V)	-0.0848	-0.0795
MIN (V)	-0.0858	-0.0803

FILTER INFO

Filter 1	-0.080	Zero = true
Filter 2	0.142	Zero = true
Filter 3	0.424	Zero = true

CALIBRATION CHECK

Xq = 0.096 9.02%

Diag after changing the quartz wheel SDS 5/19/2022

DIAGNOSTIC RESULT

DataMaster DMT: 100146
Location:
Calibration Date: 05/04/2022
Certification Date:
Installation Date:
Test Date: 05/05/2022
Test Time: 10:51:57



VERSIONS

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

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 41.9°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.64 V
Cooler Voltage = 1.63 V
Bias Voltage = 80 V
Chopper Freq = 555 Hz

PUMP INFO

Flow Rate = 4.944 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.0201	-0.0146
MIN(V)	-0.0213	-0.0159

FILTER INFO

Filter 1	-0.016	Zero = true
Filter 2	0.191	Zero = true
Filter 3	0.478	Zero = true

CALIBRATION CHECK

Xq = 0.108 2.51%

Diag post attempted cert and prior to replacing the quartz disc S28 5/9/2022



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 05/04/2022

Time: 12:47:30

SUPERVISOR NAME:

SGS CAL CHECK

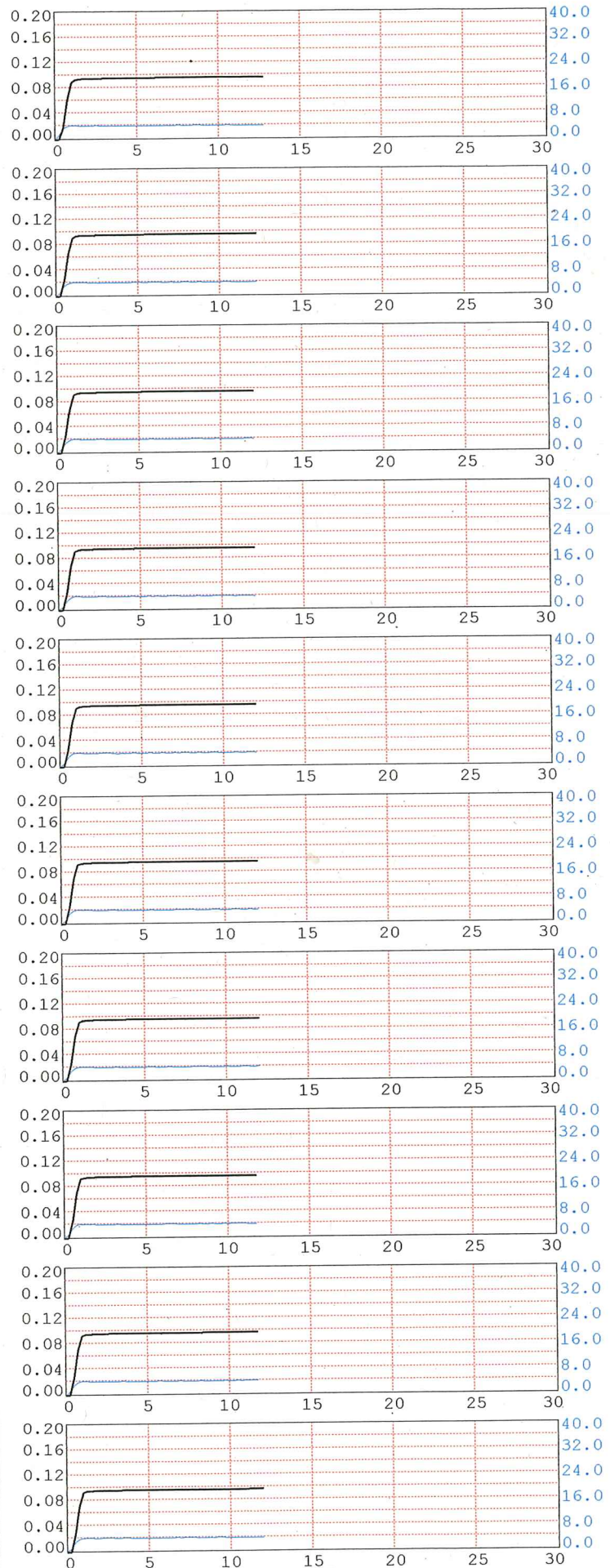
SOLUTION LOT #: 21GP41165

SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	12:48
CALIBRATION CHECK	PASSED	12:48
SIMULATOR VAPOR 34.0°C	0.097	12:48
SIMULATOR VAPOR 34.0°C	0.097	12:49
SIMULATOR VAPOR 34.0°C	0.097	12:50
SIMULATOR VAPOR 34.0°C	0.097	12:51
SIMULATOR VAPOR 34.0°C	0.097	12:53
SIMULATOR VAPOR 34.0°C	0.097	12:54
SIMULATOR VAPOR 34.0°C	0.097	12:55
SIMULATOR VAPOR 34.0°C	0.097	12:56
SIMULATOR VAPOR 34.0°C	0.097	12:57
SIMULATOR VAPOR 34.0°C	0.097	12:58
BLANK TEST	0.000	12:59

Average = 0.097

Std Dev = 0.0000





ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 05/04/2022

Time: 10:53:10

SUPERVISOR NAME:
SGS CAL CHECK

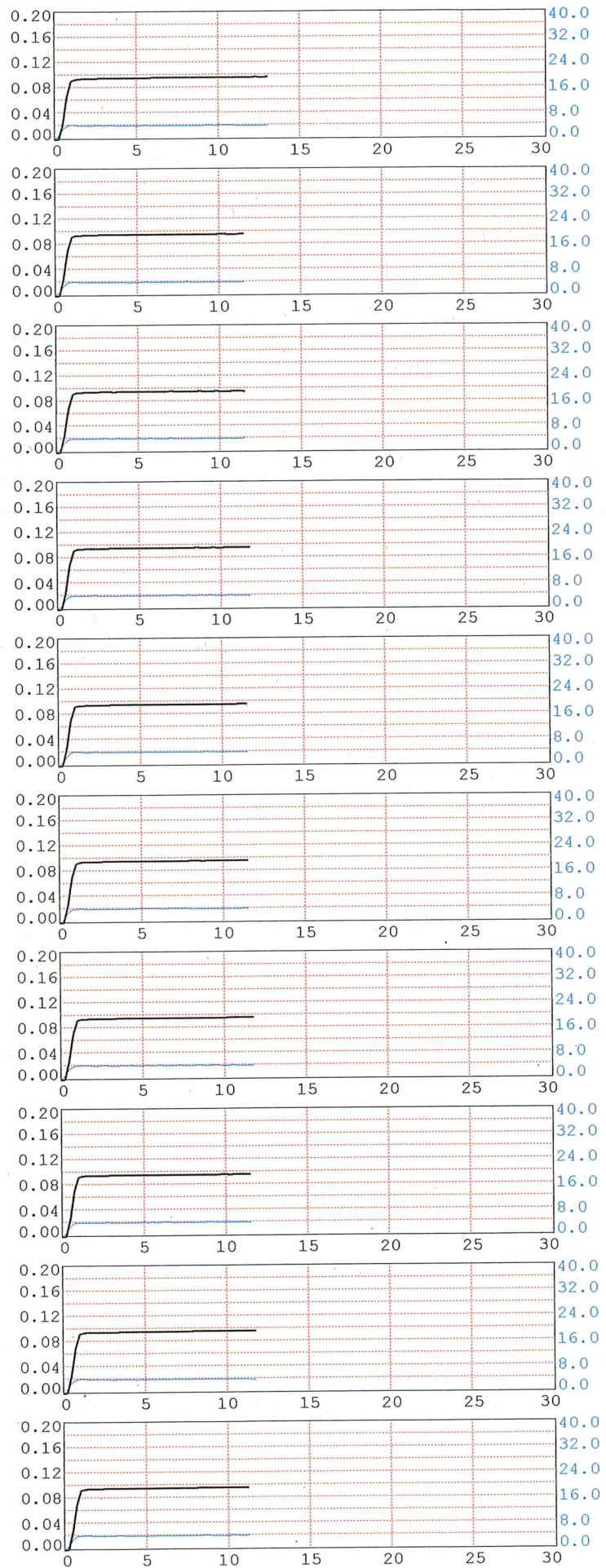
SOLUTION LOT #: 21GP41165

SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	10:54
CALIBRATION CHECK	PASSED	10:54
SIMULATOR VAPOR 34.0°C	0.097	10:54
SIMULATOR VAPOR 34.0°C	0.096	10:55
SIMULATOR VAPOR 34.0°C	0.096	10:56
SIMULATOR VAPOR 34.0°C	0.096	10:57
SIMULATOR VAPOR 34.0°C	0.096	10:58
SIMULATOR VAPOR 34.0°C	0.096	10:59
SIMULATOR VAPOR 34.0°C	0.096	11:00
SIMULATOR VAPOR 34.0°C	0.096	11:01
SIMULATOR VAPOR 34.0°C	0.096	11:02
SIMULATOR VAPOR 34.0°C	0.096	11:03
BLANK TEST	0.000	11:04

Average = 0.096
Std Dev = 0.0003

Failed low. Opened a new solution. SGS 5/4/2022





ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 100146

Date: 05/04/2022

Time: 10:40:16

SUPERVISOR NAME:

SGS CAL CHECK

SOLUTION LOT #: 21GP41165

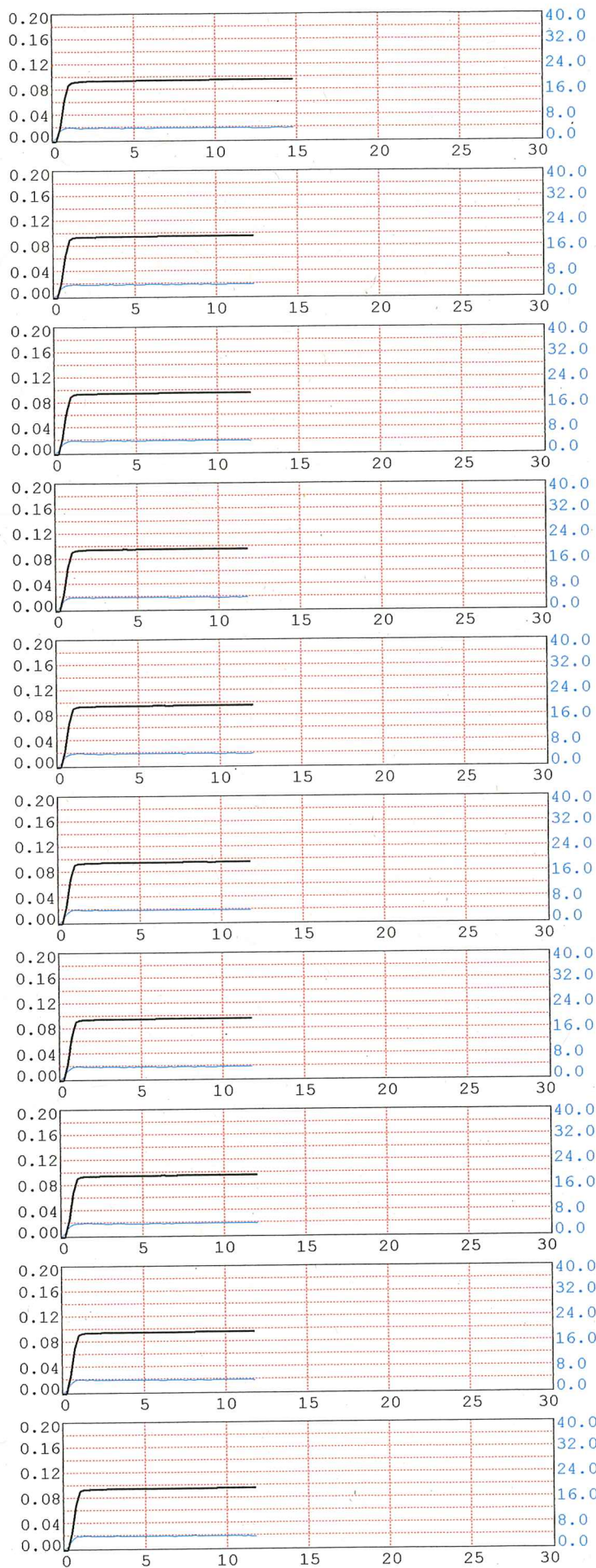
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	10:41
CALIBRATION CHECK	PASSED	10:41
SIMULATOR VAPOR 34.0°C	0.097	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	0.097	10:46
SIMULATOR VAPOR 34.0°C	0.097	10:47
SIMULATOR VAPOR 34.0°C	0.097	10:48
SIMULATOR VAPOR 34.0°C	0.097	10:49
SIMULATOR VAPOR 34.0°C	0.096	10:51
BLANK TEST	0.000	10:51

Average = 0.096

Std Dev = 0.0003

Failed low. Re-ran. SJS 5/4/2022



CALIBRATION REPORT

DataMaster DMT: 100146
Calibration Date: 05/04/2022
Calibrated by: SARAH STRATTON
Lot: 21-14-100



Ca	=	0.100		
CAL	=	0.962436	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	=	0.105	0.050	<= Xq < 0.200
a21	=	1.213572	1.050	<= a21 < 1.300
a31	=	0.557507	0.300	<= a31 < 0.800

DI Water

BL-DMT10222021 34.00°C SDS 5/4/2022

Performed by

SDS SDS

Date

05/04/2022

DIAGNOSTIC RESULT

DataMaster DMT: 100146
Location: MIDDLESEX VSP
Calibration Date: 02/07/2022
Certification Date: 02/07/2022
Installation Date: 02/10/2022
Test Date: 05/01/2022
Test Time: 10:00:02



VERSIONS

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

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 43.1°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.64 V
Cooler Voltage = 1.63 V
Bias Voltage = 80 V
Chopper Freq = 553 Hz

PUMP INFO

Flow Rate = 4.926 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.0431	-0.0372
MIN(V)	-0.0441	-0.0380

FILTER INFO

Filter 1	-0.038	Zero = true
Filter 2	0.168	Zero = true
Filter 3	0.448	Zero = true

CALIBRATION CHECK

Xq = 0.103 5.19%

DIAGNOSTIC RESULT



DataMaster DMT: 100146
Location: MIDDLESEX VSP
Calibration Date: 02/07/2022
Certification Date: 02/07/2022
Installation Date: 02/10/2022
Test Date: 04/26/2022
Test Time: 09:25:27

VERSIONS

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

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 41.9°C
Digital Sim = 0.0°C

SETTINGS

Lamp Voltage = 1.64 V
Cooler Voltage = 1.64 V
Bias Voltage = 80 V
Chopper Freq = 556 Hz

PUMP INFO

Flow Rate = 4.999 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.0772	-0.0722
MIN(V)	-0.0783	-0.0736

FILTER INFO

Filter 1	-0.073	Zero = true
Filter 2	0.165	Zero = true
Filter 3	0.432	Zero = true

CALIBRATION CHECK

Xq = 0.104 5.81%

Re: Message from "RNP002673DD6196"

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

Fri 2022-04-22 1:26 PM

To: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>

Good afternoon,

Unfortunately, I still cannot provide a time frame, but I will do my best to get this back to you as soon as possible.

Thank you for your patience,

Sarah

From: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>

Sent: Friday, April 22, 2022 8:44 AM

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

Subject: RE: Message from "RNP002673DD6196"

Good morning,

Any idea when we might be getting this back?

Thank you,

Chelsea

From: Delphia, Chelsea

Sent: Thursday, March 31, 2022 2:32 PM

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

Subject: RE: Message from "RNP002673DD6196"

No worries. I was just asked, so I'll let them know.

Thank you,

Chelsea

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

Sent: Thursday, March 31, 2022 2:31 PM

To: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>

Subject: Re: Message from "RNP002673DD6196"

I can't offer a timeline right now. We are waiting on some parts.

Sorry,

Jeff

From: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>

Sent: Thursday, March 31, 2022 10:13 AM

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

Subject: RE: Message from "RNP002673DD6196"

Good morning,

100146

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Checking in on the this. Do you know when we might be getting it back?

Thank you,
Chelsea

From: Delphia, Chelsea
Sent: Monday, March 21, 2022 2:30 PM
To: DPS - DMT <DPS.DMT@vermont.gov>
Subject: RE: Message from "RNP002673DD6196"

8... But now that I said that my life won't go as planned in the morning. So someone will definitely be here by 815.

From: DPS - DMT <DPS.DMT@vermont.gov>
Sent: Monday, March 21, 2022 2:25 PM
To: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>
Subject: Re: Message from "RNP002673DD6196"

What time will someone be there tomorrow? The more I think about it, the more it makes sense for me to just grab it on my way in to work since I drive by anyway.

From: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>
Sent: Monday, March 21, 2022 8:51 AM
To: DPS - DMT <DPS.DMT@vermont.gov>
Subject: RE: Message from "RNP002673DD6196"

Makes sense. We appreciate it!

From: DPS - DMT <DPS.DMT@vermont.gov>
Sent: Monday, March 21, 2022 8:49 AM
To: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>
Subject: Re: Message from "RNP002673DD6196"

I will swing by today. It didn't make sense to grab it Friday since I wouldn't be able to work on it until this week anyway.

Thanks,

Jeff

From: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>
Sent: Monday, March 21, 2022 8:45 AM
To: Rancourt, Tylor <Tylor.Rancourt@vermont.gov>; DPS - DMT <DPS.DMT@vermont.gov>
Cc: Dillon, Sally <Sally.Dillon@vermont.gov>
Subject: RE: Message from "RNP002673DD6196"

Good morning,

Just checking in on this.

Thanks!
Chelsea

100146

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From: Rancourt, Tylor <Tylor.Rancourt@vermont.gov>
Sent: Friday, March 18, 2022 8:51 PM
To: DPS - DMT <DPS.DMT@vermont.gov>
Cc: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>; Dillon, Sally <Sally.Dillon@vermont.gov>; Riegler, Ryan <Ryan.Riegler@vermont.gov>
Subject: RE: Message from "RNP002673DD6196"

Ok thank you I will put it out of service.

From: DPS - DMT <DPS.DMT@vermont.gov>
Sent: Friday, March 18, 2022 9:37 AM
To: Rancourt, Tylor <Tylor.Rancourt@vermont.gov>
Cc: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>; Dillon, Sally <Sally.Dillon@vermont.gov>; Riegler, Ryan <Ryan.Riegler@vermont.gov>
Subject: Re: Message from "RNP002673DD6196"

Unfortunately, yes.

I will hopefully swing by today to come grab the instrument. I know it's been a pain lately but we will try to get it taken care of returned as soon as possible.

From: Rancourt, Tylor <Tylor.Rancourt@vermont.gov>
Sent: Thursday, March 17, 2022 10:32 PM
To: DPS - DMT <DPS.DMT@vermont.gov>
Cc: Delphia, Chelsea <Chelsea.Delphia@vermont.gov>; Dillon, Sally <Sally.Dillon@vermont.gov>; Riegler, Ryan <Ryan.Riegler@vermont.gov>
Subject: FW: Message from "RNP002673DD6196"

All,

Tonight during a DUI processing the DMT reported a "Calibration Check Error" and the Trooper was unable to complete processing. Does the datamaster need to be put out of service?

Thank you,

Tylor Rancourt
Middlesex VSP

100146

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