VERMONT FORENSIC LABORATORY

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http://vfl.vermont.gov

DATAMASTER TECHNICAL SUPPORT INQUIRY

Agency/Site: Brattleboro VSP **DataMaster Serial #:** 100161

Date: 2/1/2013 Requestor: A. Bolduc

Instrument Supervisor: Daniel Bennett Phone #: (802) 254-2382

Taken By: R. Driscoll

Problem: Detector voltage at approximately -0.300V

Laboratory Response: Unit will be brought to VFL for testing of detector voltage and interfering compounds.

Work Performed: Instrument returned to VFL for testing with interfering compounds. The instrument reported "Interference" ten out of ten times while running an Accuracy & Precision check on .08 EtOH/.01 Acetone solution. Optimized detector voltage to +/- 0.100V, calibrated and certified instrument. Unit ready for installation at agency.

☐ On Site ☒ In-house Attachments: 11 pages

Performed By: R. Driscoll RCD Date: 2/5/2013

Final Review: [signature] Date: 2/11/2013

DIAGNOSTIC RESULT

DataMaster DMT: 100161
Location: Brattleboro VSP
Calibration Date: 08/22/2011
Certification Date: 08/22/2011
Installation Date: 09/02/2011
Test Date: 01/31/2013
Test Time: 12:35:12

VERSIONS
DMT: 1.01
PIC: 2.05
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.2°C
Breath Tube = 47.6°C
Digital Sim = 34.0°C

SETTINGS
Lamp Voltage = 1.79 V
Cooler Voltage = 1.77 V
Bias Voltage = 80 V
Chopper Freq = 539 Hz

PUMP INFO
Flow Rate = 5.449 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.3026	-0.3000
MIN(V)	-0.3043	-0.3012

FILTER INFO
Filter 1 -0.302 Zero = true
Filter 2 0.034 Zero = true
Filter 3 0.235 Zero = true

CALIBRATION CHECK
Xq = 0.086 0.10%

Page 2 of 12 RCD

DIAGNOSTIC RESULT

DataMaster DMT: 100161
Location: Brattleboro VSP
Calibration Date: 08/22/2011
Certification Date: 08/22/2011
Installation Date: 09/02/2011
Test Date: 02/04/2013
Test Time: 08:45:57

```
VERSIONS
DMT: 1.01
PIC: 2.05
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube    = 46.7°C
Digital Sim    = 33.9°C

SETTINGS
Lamp Voltage   = 1.79 V
Cooler Voltage = 1.77 V
Bias Voltage   = 80 V
Chopper Freq   = 531 Hz

PUMP INFO
Flow Rate = 5.578 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)  -0.2449    -0.2413
MIN(V)  -0.2463    -0.2427

FILTER INFO
Filter 1  -0.242  Zero = true
Filter 2   0.088  Zero = true
Filter 3   0.277  Zero = true

CALIBRATION CHECK
Xq  = 0.085  0.91%
```

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100161
Location: Brattleboro VSP

Date: 02/04/2013
Time: 09:36:31

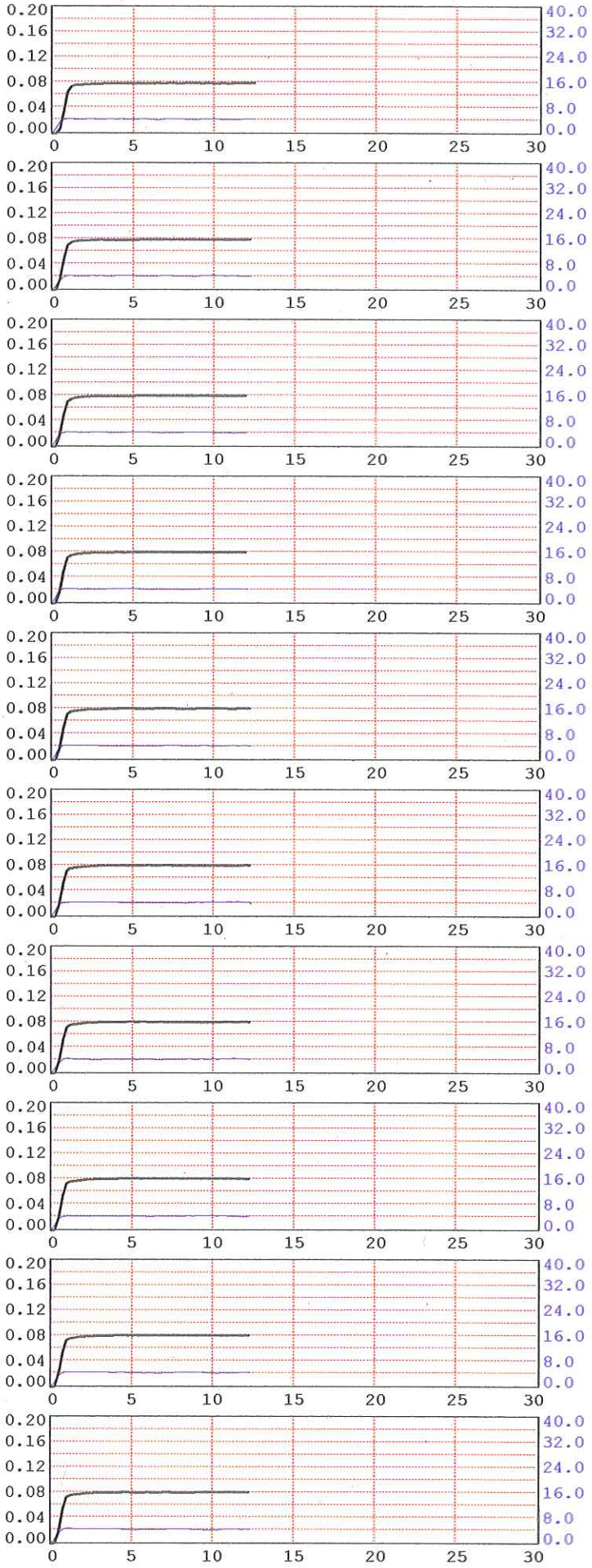
SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 12-75-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	09:37
CALIBRATION CHECK	PASSED	09:37
SIMULATOR VAPOR 34.0°C	0.079	09:37
SIMULATOR VAPOR 34.0°C	0.080	09:38
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:39
SIMULATOR VAPOR 33.9°C	0.080	09:40
SIMULATOR VAPOR 33.9°C	0.081	09:42
SIMULATOR VAPOR 34.0°C	0.081	09:43
SIMULATOR VAPOR 34.0°C	0.081	09:44
SIMULATOR VAPOR 34.0°C	INTERFERENCE	09:45
SIMULATOR VAPOR 33.9°C	0.081	09:46
SIMULATOR VAPOR 33.9°C	0.081	09:47
BLANK TEST	0.000	09:48

Bad Lot of interference solution, replace with new Lot.

RCD 2/4/13



ACCURACY & PRECISION REPORT

STATE OF VERMONT

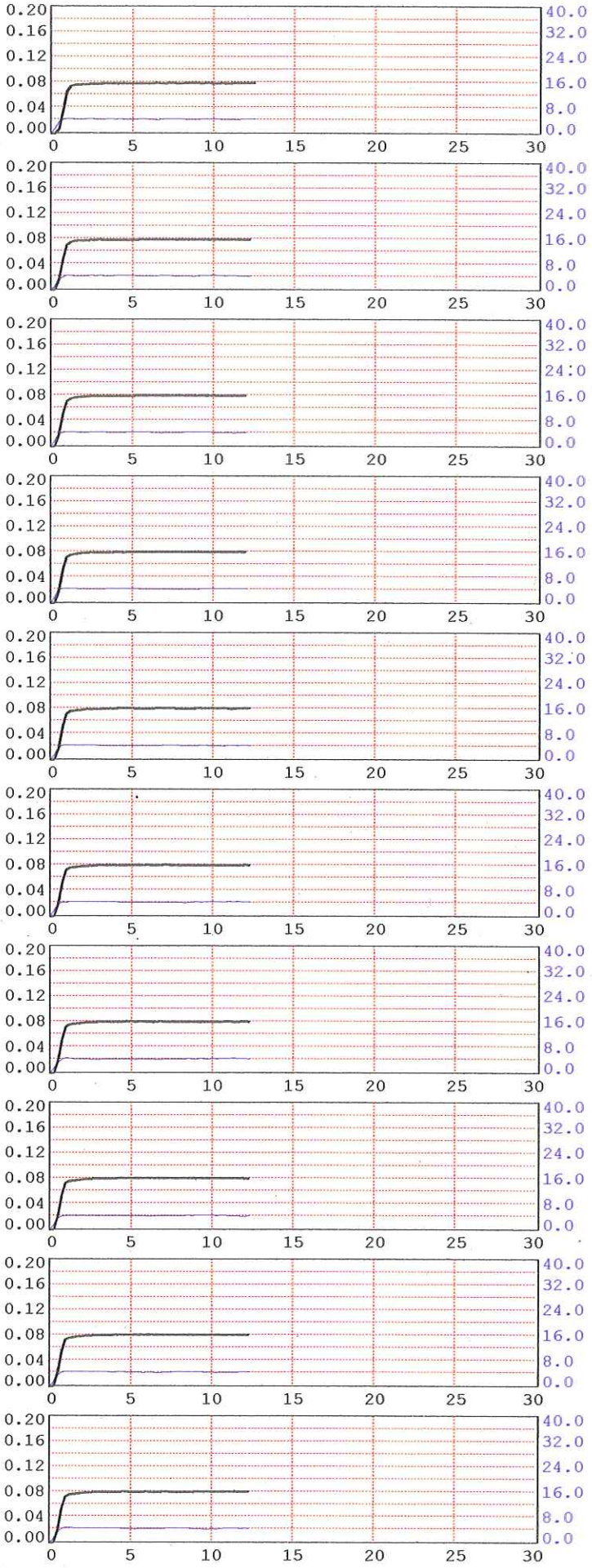
DataMater DMT: 100161
Location: Brattleboro VSP

Date: 02/04/2013
Time: 09:36:31

SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 12-75-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	09:37
CALIBRATION CHECK	PASSED	09:37
Xq = 0.086 (0.30%)		
SIMULATOR VAPOR 34.0°C	0.079	09:37
X[1] = 0.0797 (-0.0038) (0.0010)		
SIMULATOR VAPOR 34.0°C	0.080	09:38
X[1] = 0.0803 (-0.0048) (0.0002)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		09:39
X[1] = 0.0812 (-0.0051) (-0.0004)		
SIMULATOR VAPOR 33.9°C	0.080	09:40
X[1] = 0.0808 (-0.0050) (-0.0002)		
SIMULATOR VAPOR 33.9°C	0.081	09:42
X[1] = 0.0815 (-0.0046) (-0.0004)		
SIMULATOR VAPOR 34.0°C	0.081	09:43
X[1] = 0.0812 (-0.0049) (-0.0001)		
SIMULATOR VAPOR 34.0°C	0.081	09:44
X[1] = 0.0814 (-0.0048) (-0.0005)		
SIMULATOR VAPOR 34.0°CINTERFERENCE		09:45
X[1] = 0.0815 (-0.0052) (-0.0002)		
SIMULATOR VAPOR 33.9°C	0.081	09:46
X[1] = 0.0816 (-0.0049) (0.0001)		
SIMULATOR VAPOR 33.9°C	0.081	09:47
X[1] = 0.0817 (-0.0047) (-0.0003)		
BLANK TEST	0.000	09:48



ACCURACY & PRECISION REPORT

STATE OF VERMONT

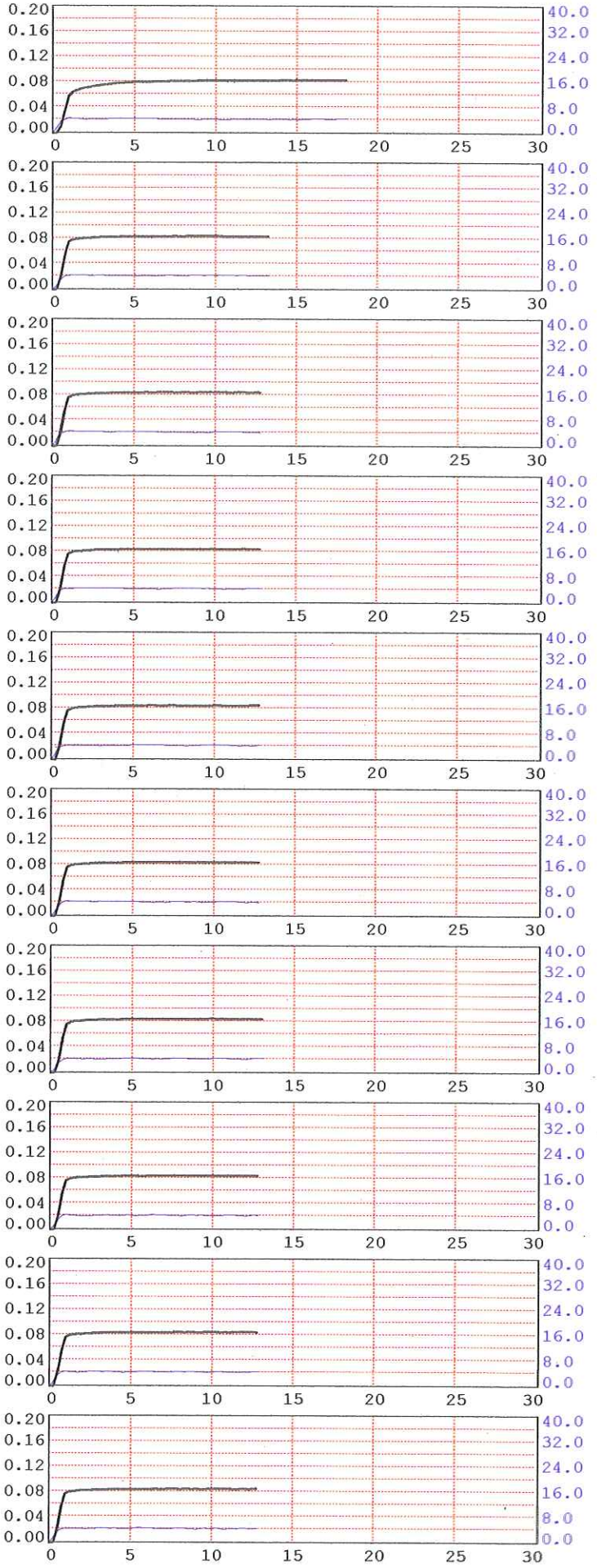
DataMater DMT: 100161
Location: Brattleboro VSP

Date: 02/04/2013
Time: 10:24:11

SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 12-85-08A1
SOLUTION CONCENTRATION: 0.081

BLANK TEST	0.000	10:25
CALIBRATION CHECK	PASSED	10:25
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:25
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:26
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:27
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:28
SIMULATOR VAPOR 34.0°C	INTERFERENCE	10:29
SIMULATOR VAPOR 34.0°C	INTERFERENCE	10:30
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:31
SIMULATOR VAPOR 34.0°C	INTERFERENCE	10:33
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:34
SIMULATOR VAPOR 33.9°C	INTERFERENCE	10:35
BLANK TEST	0.000	10:36



ACCURACY & PRECISION REPORT

STATE OF VERMONT

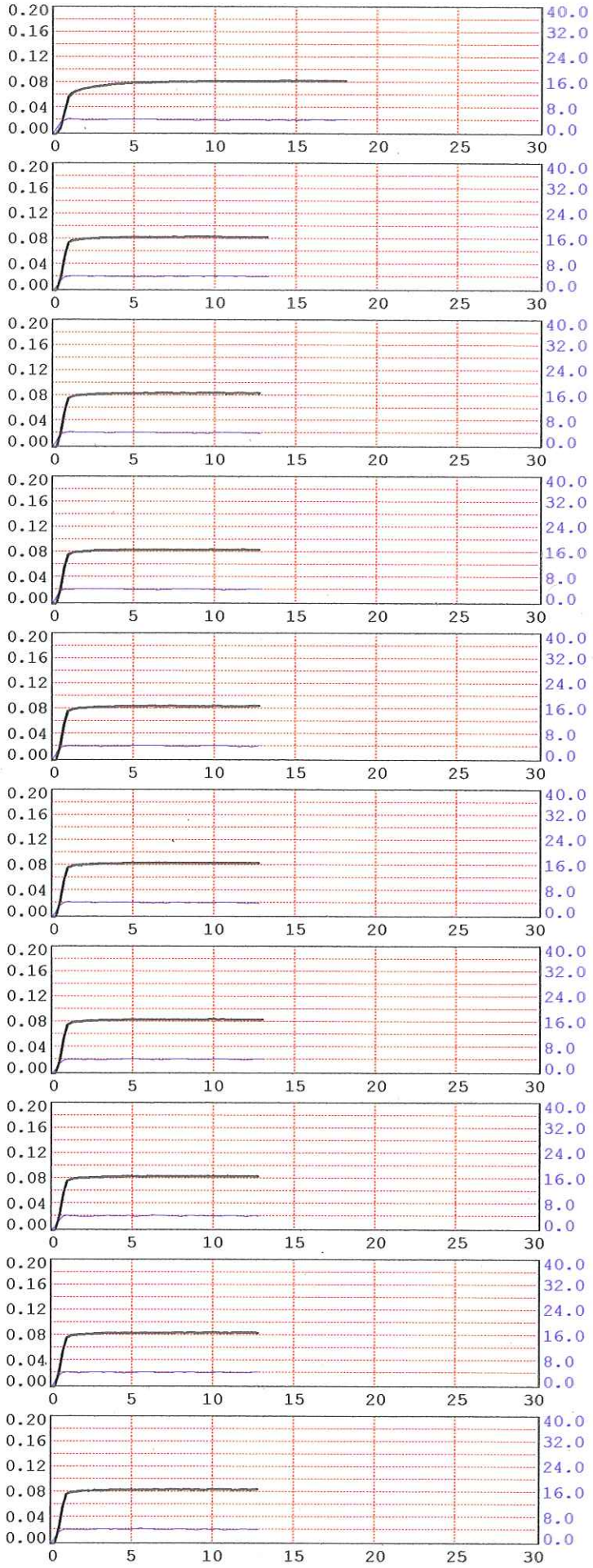
DataMater DMT: 100161
Location: Brattleboro VSP

Date: 02/04/2013
Time: 10:24:11

SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 12-85-08A1
SOLUTION CONCENTRATION: 0.081

BLANK TEST	0.000	10:25
CALIBRATION CHECK	PASSED	10:25
Xq = 0.086 (0.41%)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:25
X[1] = 0.0841 (-0.0086) (0.0013)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:26
X[1] = 0.0846 (-0.0084) (0.0003)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:27
X[1] = 0.0857 (-0.0081) (0.0006)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:28
X[1] = 0.0854 (-0.0088) (0.0003)		
SIMULATOR VAPOR 34.0°C INTERFERENCE		10:29
X[1] = 0.0855 (-0.0086) (0.0001)		
SIMULATOR VAPOR 34.0°C INTERFERENCE		10:30
X[1] = 0.0850 (-0.0090) (-0.0002)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:31
X[1] = 0.0853 (-0.0085) (0.0002)		
SIMULATOR VAPOR 34.0°C INTERFERENCE		10:33
X[1] = 0.0851 (-0.0086) (0.0002)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:34
X[1] = 0.0856 (-0.0088) (0.0000)		
SIMULATOR VAPOR 33.9°C INTERFERENCE		10:35
X[1] = 0.0854 (-0.0087) (-0.0002)		
BLANK TEST	0.000	10:36



Page 7 of 12 RECD

DIAGNOSTIC RESULT

DataMaster DMT: 100161
Location: Brattleboro VSP
Calibration Date: 08/22/2011
Certification Date: 08/22/2011
Installation Date: 09/02/2011
Test Date: 02/04/2013
Test Time: 10:38:04

VERSIONS
DMT: 1.01
PIC: 2.05
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube = 45.6°C
Digital Sim = 33.8°C

SETTINGS
Lamp Voltage = 1.79 V
Cooler Voltage = 1.77 V
Bias Voltage = 80 V
Chopper Freq = 534 Hz

PUMP INFO
Flow Rate = 5.511 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.2604	-0.2575
MIN(V)	-0.2628	-0.2589

FILTER INFO
Filter 1 -0.258 Zero = true
Filter 2 0.072 Zero = true
Filter 3 0.278 Zero = true

CALIBRATION CHECK
Xq = 0.086 0.41%

CALIBRATION REPORT

DataMaster DMT: 100161
Calibration Date: 02/04/2013
Calibrated by: ROBERT DRISCOLL
Lot: 12-71-100

Ca	= 0.100		
CAL	= 0.973298	0.800	<= CAL < 1.200
b1	= 0.000	0.000	<= b1 < 0.004
b2	= 0.008	0.002	<= b2 < 0.010
b3	= 0.000	0.000	<= b3 < 0.004
Xq	= 0.085	0.050	<= Xq < 0.200
a21	= 1.197948	1.050	<= a21 < 1.300
a31	= 0.452289	0.300	<= a31 < 0.800

Performed by _____ Date 02/04/2013

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100161

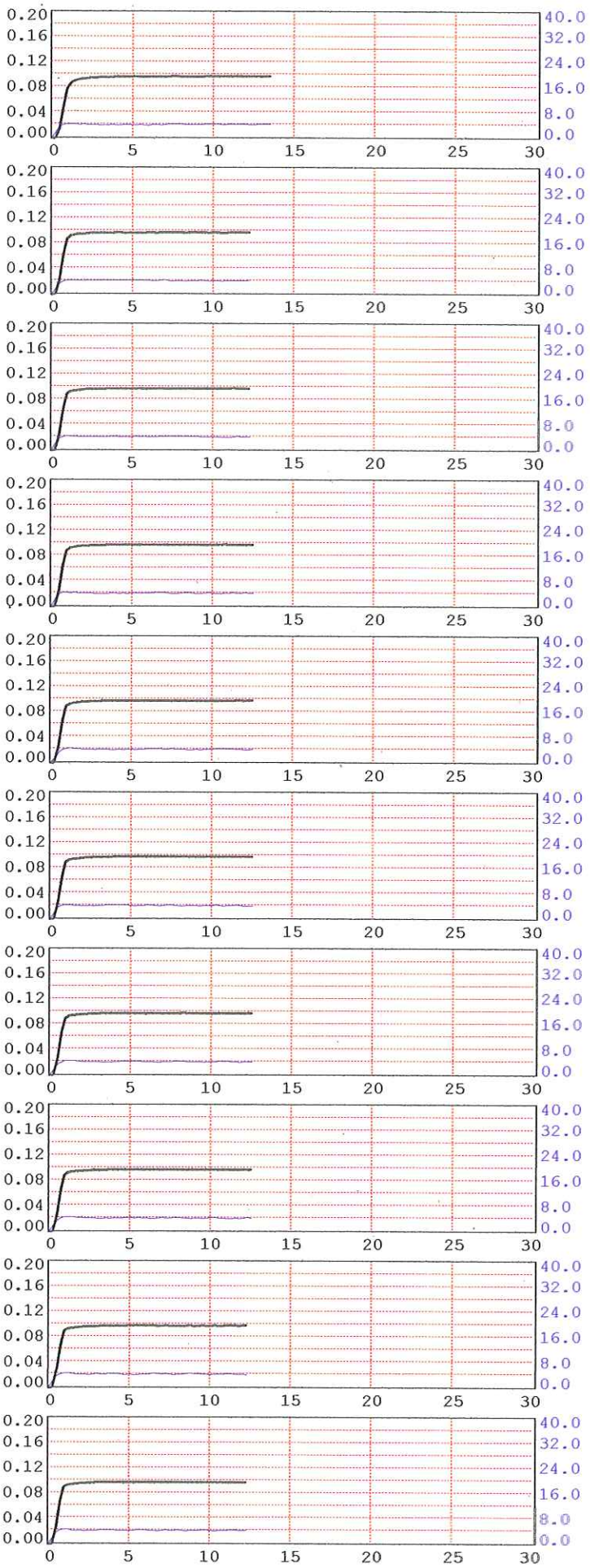
Date: 02/04/2013
Time: 13:05:34

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: GUTH 11250
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	13:06
CALIBRATION CHECK	PASSED	13:06
SIMULATOR VAPOR 33.9°C	0.098	13:06
SIMULATOR VAPOR 33.9°C	0.097	13:07
SIMULATOR VAPOR 33.9°C	0.098	13:09
SIMULATOR VAPOR 33.9°C	0.098	13:10
SIMULATOR VAPOR 34.0°C	0.098	13:11
SIMULATOR VAPOR 33.8°C	0.098	13:12
SIMULATOR VAPOR 33.9°C	0.098	13:13
SIMULATOR VAPOR 33.9°C	0.098	13:14
SIMULATOR VAPOR 33.9°C	0.098	13:15
SIMULATOR VAPOR 33.9°C	0.098	13:16
BLANK TEST	0.000	13:17

Average = 0.097
Std Dev = 0.000



CERTIFICATION REPORT

DataMaster DMT: 100161
Calibration Date: 02/04/2013
Certification Date: 02/04/2013
Certified by: ROBERT DRISCOLL

Diagnostic Results

```
VERSIONS
DMT: 1.01
PIC: 2.05
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.9°C
Breath Tube    = 46.2°C
Digital Sim    = 33.9°C

SETTINGS
Lamp Voltage   = 1.77 V
Cooler Voltage = 1.77 V
Bias Voltage   = 80 V
Chopper Freq   = 535 Hz

PUMP INFO
Flow Rate = 5.506 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)   -0.0453    -0.0427
MIN(V)   -0.0472    -0.0443

FILTER INFO
Filter 1  -0.043  Zero = true
Filter 2   0.277  Zero = true
Filter 3   0.469  Zero = true

CALIBRATION CHECK
Xq  = 0.086  0.41%
```

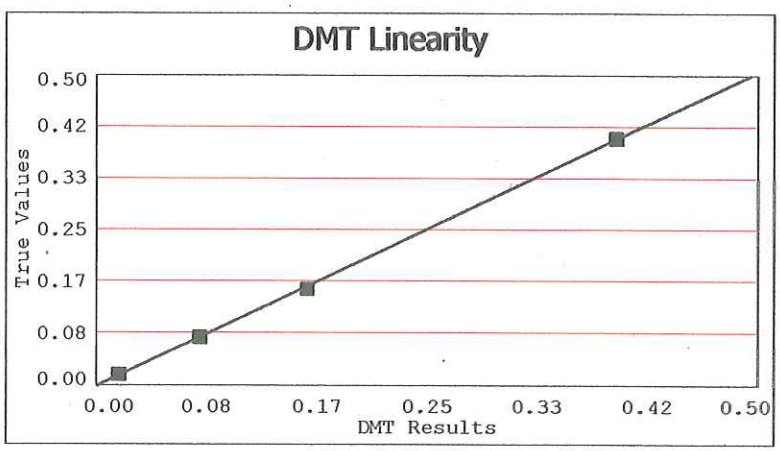
Options

```
OPTIONS
Units
   Alcohol.................. g/210L
Simulator
   Tolerance Check.......... yes
   Standard Type............ wet
   Nominal.................. 0.100
   Digital Simulator........ Guth34CNP
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
0.019 g/210L Lot # 12-78-020	0.017 g/210L	0.0000
0.079 g/210L Lot # 12-74-080	0.078 g/210L	0.0000
0.157 g/210L Lot # 12-83-160	0.159 g/210L	0.0000
0.399 g/210L Lot # 12-82-400	0.393 g/210L	0.0000

$R^2 = 0.9998$



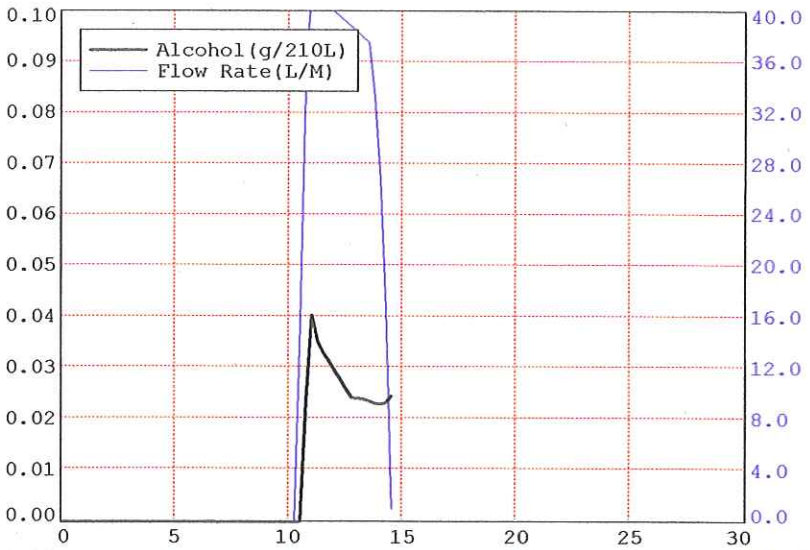
Acetone Interference Test

Lot # 12-85-08A1

Interference Detected

Mouth Alcohol Test

Mouth Alcohol Detected

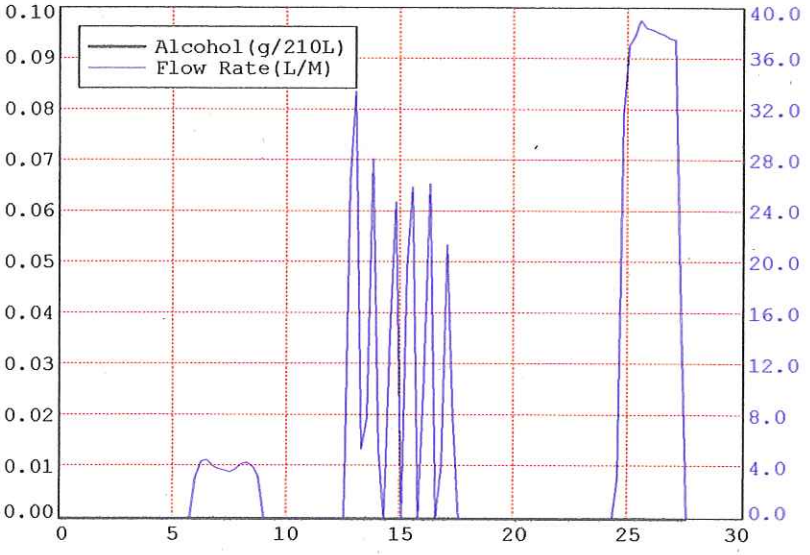


RF Detection Test

Passed

Sample Acceptance Test

Passed



CERTIFICATION PASSED

Performed by _____ Date 02/04/2013

Reviewed by _____ Date 2/4/13

2/11/2013