VERMONT FORENSIC LABORATORY

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DATAMASTER TECHNICAL SUPPORT INQUIRY

Agency/Site: Bennington CSO **DataMaster Serial #:** 100163

Date: 7/23/2014 Requestor: Joel Howard

Instrument Supervisor: Joel Howard Phone #: (802) 442-4900

Taken By: Rob Driscoll

Problem: Routine Performance Check Failed

Laboratory Response: R. Driscoll had DMT supervisor send a Status History Report, Breath Record History, and run a Diagnostic. The instrument is failing because the Cal Check is above the 4% specification.

Work Performed: Recalibrated and certified instrument. Due to not detecting the interference solution during certification, multiple troubleshooting steps were performed including: optimizing the detector voltage, replacing the filter wheel, adjusting the chopper to 525 Hz and replacing the interference solution with a new lot. Instrument passed certification and is ready for installation at the agency.

☐ On Site ☒ In-house Attachments: 28 pages

Performed By: R. Driscoll RCD Date: 8/4/2014
Final Review: TLC Date: 8/4/2014

ROUTINE PERFORMANCE CHECK REPORT

DataMaster DMT: 100163
Location: Bennington County SO
Calibration Date: 09/14/2011
Certification Date: 09/15/2011
Installation Date: 04/10/2012
RPC Date: 07/23/2014
Supervisor Name: JOEL R HOWARD

Diagnostic Results

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.8°C
Breath Tube    = 47.6°C
Digital Sim    = 33.9°C

SETTINGS
Lamp Voltage   = 1.80 V
Cooler Voltage = 1.57 V
Bias Voltage   = 80 V
Chopper Freq   = 564 Hz

PUMP INFO
Flow Rate = 4.922 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)    0.0370     0.0402
MIN(V)    0.0350     0.0382

FILTER INFO
Filter 1   0.038  Zero = true
Filter 2   0.256  Zero = true
Filter 3   0.624  Zero = true

CALIBRATION CHECK
Xq  = 0.081  4.03%
```

Routine Performance Check Failed

Performed by Joel **Date** 07/23/2014

Reviewed by _____ **Date** _____

ROUTINE PERFORMANCE CHECK REPORT

DataMaster DMT: 100163
Location: Bennington County SO
Calibration Date: 09/14/2011
Certification Date: 09/15/2011
Installation Date: 04/10/2012
RPC Date: 07/23/2014
Supervisor Name: JOEL R HOWARD

Diagnostic Results

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.0°C
Breath Tube    = 47.7°C
Digital Sim    = 33.9°C

SETTINGS
Lamp Voltage   = 1.80 V
Cooler Voltage = 1.58 V
Bias Voltage   = 80 V
Chopper Freq   = 563 Hz

PUMP INFO
Flow Rate = 4.998 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)    0.0378     0.0398
MIN(V)    0.0368     0.0388

FILTER INFO
Filter 1   0.039  Zero = true
Filter 2   0.258  Zero = true
Filter 3   0.625  Zero = true

CALIBRATION CHECK
Xq  = 0.081  4.36%
```

Routine Performance Check Failed

Performed by _____ **Date** 07/23/2014

Reviewed by _____ **Date** _____

Status Record History

Status Date	Status Time	Test Type	Status Message
12/23/2011	21:20:29	DUI Subject Record	Simulator Out of Range
12/31/2011	00:08:17	DUI Subject Record	Ambient Fail
12/31/2011	00:13:20	DUI Subject Record	Blank Error
01/01/2012	01:38:11	DUI Subject Record	Simulator Out of Range
07/11/2012	12:09:37	RPC Record	RF NOT DETECTED
09/30/2012	00:51:38	DUI Subject Record	Simulator Out of Range
11/01/2012	15:25:09	Accuracy & Precision Records	Simulator Temperature Unknown
11/01/2012	16:05:56	RPC Record	RF NOT DETECTED
01/11/2013	22:39:17	DUI Subject Record	RESPONSE TIMEOUT
02/01/2013	21:53:49	DUI Subject Record	RESPONSE TIMEOUT
03/15/2013	19:26:08	DUI Subject Record	Simulator Out of Range
05/10/2013	12:43:47	APM Record	ACCURACY AND PRECISION CHECK FAILED
05/10/2013	12:48:59	APM Record	ACCURACY AND PRECISION CHECK FAILED
07/17/2013	07:58:35	RPC Record	Diagnostic Check Failed
07/17/2013	09:02:34	RPC Record	RF NOT DETECTED
02/07/2014	17:46:41	RPC Record	ACCURACY AND PRECISION CHECK FAILED
02/07/2014	17:52:38	RPC Record	ACCURACY AND PRECISION CHECK FAILED
02/07/2014	18:39:05	RPC Record	RF NOT DETECTED
07/23/2014	07:35:57	RPC Record	Diagnostic Check Failed
07/23/2014	07:40:39	RPC Record	Diagnostic Check Failed

Breath Record History

Test Date	Test Time	Agency	Operator Name	Alcohol Val. 1	Alcohol Val. 2	Sim. Conc. 1	Sim. Conc. 2	Status Message
10/15/2011	22:20:32	BENNINGTON COUNTY SO	PHIL J FRASIER	0.133		0.099		
11/06/2011	17:30:30	BENNINGTON COUNTY SO	JOEL R HOWARD	0.000		0.097		
12/23/2011	21:18:58	BENNINGTON COUNTY SO	PHILIP J FRASIER			0.094		Simulator Out of Range
12/31/2011	00:07:45	BENNINGTON COUNTY SO	PHILIP A FRASIER					Ambient Fail
12/31/2011	00:09:59	BENNINGTON COUNTY SO	PHILIP A FRASIER	0.248		0.098		Blank Error
01/01/2012	01:32:29	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.198		0.099	0.096	Simulator Out of Range
02/25/2012	00:58:11	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.097		0.100	0.099	
03/17/2012	01:00:16	BENNINGTON COUNTY SO	JOEL R HOWARD	0.067		0.099		
03/20/2012	20:34:40	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.097	0.096	0.099	0.098	
04/08/2012	13:46:39	VFL	AMANDA BOLDUC	0.100		0.101		
04/20/2012	14:40:43	BENNINGTON COUNTY SO	JASON M NOBLET	0.188		0.100		
07/22/2012	19:31:03	BENNINGTON PD	MICHAEL W PLUSCH	0.093		0.101		
08/04/2012	18:42:57	BENNINGTON COUNTY SO	JOEL R HOWARD	0.148		0.101		
08/31/2012	20:48:57	BENNINGTON COUNTY SO	JOEL R HOWARD	0.094	0.092	0.100	0.099	
09/19/2012	22:56:02	BENNINGTON COUNTY SO	PHILIP J FRASIER	INCOMPLETE	INCOMPLETE	0.097		
09/30/2012	00:50:09	ADDISON COUNTY SO	JOEL R HOWARD			0.095		Simulator Out of Range
12/15/2012	00:49:33	BENNINGTON COUNTY SO	JOEL R HOWARD	0.176	0.179	0.095	0.095	
01/01/2013	02:20:45	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.150	0.164	0.096	0.096	
01/11/2013	22:34:50	BENNINGTON COUNTY SO	WILLIAM J LATOUR	0.132		0.096		RESPONSE TIMEOUT
01/19/2013	18:39:14	BENNINGTON COUNTY SO	JOEL R HOWARD	REFUSED		0.097		
02/01/2013	21:50:37	BENNINGTON COUNTY SO	PHILIP J FRASIER			0.095		RESPONSE TIMEOUT
02/01/2013	21:56:31	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.178	0.172	0.095	0.095	
02/02/2013	01:03:06	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.091		0.095		
03/09/2013	21:33:02	BENNINGTON PD	ROBERT S MURAWSKI	0.101		0.097		
03/15/2013	19:24:40	BENNINGTON COUNTY SO	JOEL R HOWARD			0.090		Simulator Out of Range
06/23/2013	03:18:32	BENNINGTON PD	JOSHUA M STEMP	0.157	0.156	0.098	0.098	
08/28/2013	16:00:13	BENNINGTON PD	JOHN F BEHAN	0.102		0.098		
08/30/2013	17:41:41	BENNINGTON COUNTY SO	JOEL R HOWARD	0.173		0.099		
10/12/2013	17:06:31	BENNINGTON COUNTY SO	JOEL R HOWARD	REFUSED		0.095		
11/07/2013	21:42:24	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.123	0.119	0.099	0.098	
11/09/2013	00:08:13	BENNINGTON COUNTY SO	JOEL R HOWARD	0.118	0.113	0.097	0.097	
11/16/2013	23:46:20	SHAFTSBURY VSP	JESSE ROBSON	0.084	0.086	0.097	0.095	
11/22/2013	18:34:29	BENNINGTON COUNTY SO	GARY F HARRINGTON	0.106	0.113	0.097	0.097	
12/20/2013	23:47:27	BENNINGTON COUNTY SO	JOEL R HOWARD	0.112	0.113	0.095	0.095	
12/28/2013	01:33:23	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.074		0.096		
01/17/2014	19:35:31	BENNINGTON COUNTY SO	JOEL R HOWARD	0.125		0.094		
01/30/2014	18:20:53	BENNINGTON COUNTY SO	JOEL R HOWARD	0.000		0.094		
02/08/2014	01:14:37	BENNINGTON COUNTY SO	JOEL R HOWARD	0.127		0.101		
04/05/2014	18:23:05	BENNINGTON COUNTY SO	PHILIP J FRASIER	0.133		0.095		

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DIAGNOSTIC RESULT

DataMaster DMT: 100163
Location: Bennington County SO
Calibration Date: 09/14/2011
Certification Date: 09/15/2011
Installation Date: 04/10/2012
Test Date: 07/24/2014
Test Time: 12:48:28

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.9°C
Breath Tube    = 47.6°C
Digital Sim    = 33.8°C

SETTINGS
Lamp Voltage   = 1.80 V
Cooler Voltage = 1.57 V
Bias Voltage   = 81 V
Chopper Freq   = 563 Hz

PUMP INFO
Flow Rate = 5.097 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)    0.0384     0.0413
MIN(V)    0.0366     0.0398

FILTER INFO
Filter 1   0.040  Zero = true
Filter 2   0.257  Zero = true
Filter 3   0.623  Zero = true

CALIBRATION CHECK
Xq  = 0.081  4.03%
```

DIAGNOSTIC RESULT

DataMaster DMT: 100163
Location: Bennington County SO
Calibration Date: 09/14/2011
Certification Date: 09/15/2011
Installation Date: 04/10/2012
Test Date: 07/25/2014
Test Time: 06:04:48

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.1°C
Breath Tube    = 45.8°C
Digital Sim    = 0.0°C

SETTINGS
Lamp Voltage   = 1.80 V
Cooler Voltage = 1.58 V
Bias Voltage   = 80 V
Chopper Freq   = 560 Hz

PUMP INFO
Flow Rate = 5.120 L/M

DETECTOR INFO
PUMP     ON          OFF
MAX(V)    0.0236      0.0264
MIN(V)    0.0220      0.0254

FILTER INFO
Filter 1   0.026  Zero = true
Filter 2   0.240  Zero = true
Filter 3   0.600  Zero = true

CALIBRATION CHECK
Xq  = 0.081  3.80%
```

CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/25/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

Ca = 0.099			
CAL = 0.946041	0.800	<= CAL <	1.200
b1 = 0.001	0.000	<= b1 <	0.004
b2 = 0.007	0.002	<= b2 <	0.010
b3 = 0.000	0.000	<= b3 <	0.004
Xq = 0.082	0.050	<= Xq <	0.200
a21 = 1.203431	1.050	<= a21 <	1.300
a31 = 0.506535	0.300	<= a31 <	0.800

Performed by RCD Date 07/25/2014

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

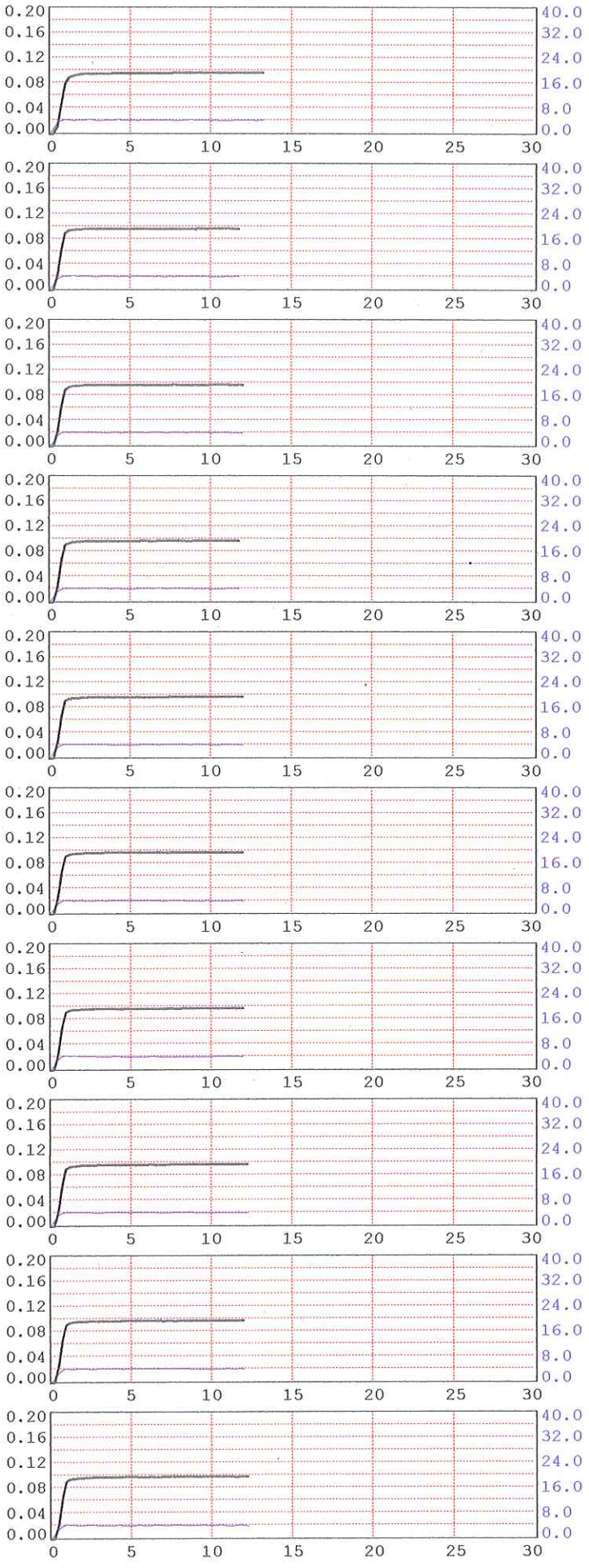
Date: 07/25/2014
Time: 12:18:22

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: GUTH 13100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	12:19
CALIBRATION CHECK	PASSED	12:19
SIMULATOR VAPOR 33.9°C	0.097	12:19
SIMULATOR VAPOR 33.9°C	0.097	12:20
SIMULATOR VAPOR 33.9°C	0.097	12:21
SIMULATOR VAPOR 33.9°C	0.097	12:22
SIMULATOR VAPOR 33.9°C	0.097	12:23
SIMULATOR VAPOR 33.9°C	0.098	12:24
SIMULATOR VAPOR 33.9°C	0.097	12:25
SIMULATOR VAPOR 33.9°C	0.097	12:27
SIMULATOR VAPOR 34.0°C	0.097	12:28
SIMULATOR VAPOR 33.8°C	0.098	12:29
BLANK TEST	0.000	12:29

Average = 0.097
Std Dev = 0.000



DIAGNOSTIC RESULT

DataMaster DMT: 100163
Location:
Calibration Date: 07/25/2014
Certification Date:
Installation Date:
Test Date: 07/25/2014
Test Time: 12:35:02

VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.8°C
Breath Tube = 44.3°C
Digital Sim = 33.9°C

SETTINGS
Lamp Voltage = 1.75 V
Cooler Voltage = 1.77 V
Bias Voltage = 81 V
Chopper Freq = 559 Hz

PUMP INFO
Flow Rate = 4.916 L/M

DETECTOR INFO

PUMP	ON	OFF
MAX(V)	-0.0134	-0.0110
MIN(V)	-0.0148	-0.0122

FILTER INFO
Filter 1 -0.012 Zero = true
Filter 2 0.201 Zero = true
Filter 3 0.569 Zero = true

CALIBRATION CHECK
Xq = 0.082 0.32%

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

Date: 07/28/2014
Time: 06:11:33

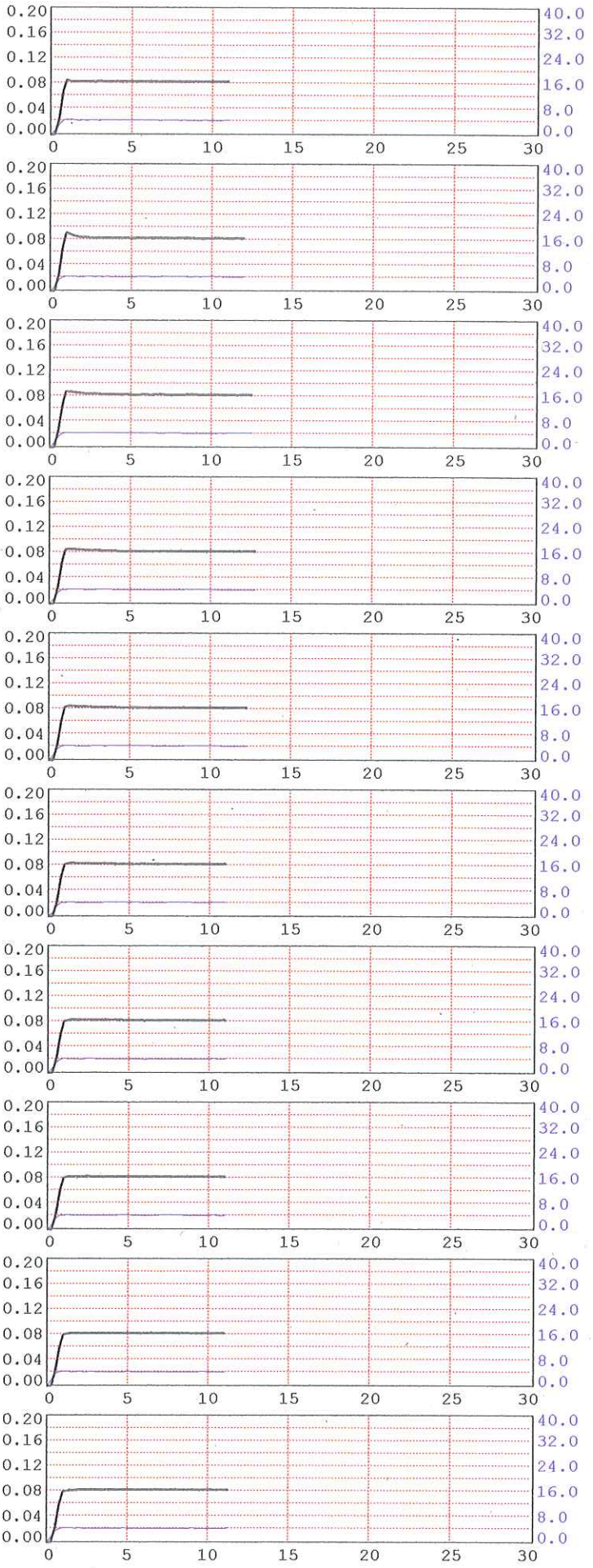
SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: ~~0.080~~ 0.079 RCD 8/4/14

BLANK TEST	0.000	06:12
CALIBRATION CHECK	PASSED	06:12
Xq = 0.082 (0.42%)		
SIMULATOR VAPOR 33.8°C	0.084	06:12
X[1] = 0.0840 (-0.0044) (0.0015)		
SIMULATOR VAPOR 33.9°C	0.083	06:13
X[1] = 0.0838 (-0.0041) (0.0010)		
SIMULATOR VAPOR 33.9°C	0.083	06:14
X[1] = 0.0836 (-0.0041) (0.0008)		
SIMULATOR VAPOR 33.9°C	0.083	06:16
X[1] = 0.0833 (-0.0044) (0.0010)		
SIMULATOR VAPOR 33.8°C	0.083	06:17
X[1] = 0.0835 (-0.0045) (0.0011)		
SIMULATOR VAPOR 33.9°C	0.083	06:18
X[1] = 0.0833 (-0.0043) (0.0009)		
SIMULATOR VAPOR 33.8°C	0.083	06:19
X[1] = 0.0832 (-0.0043) (0.0010)		
SIMULATOR VAPOR 33.9°C	0.083	06:20
X[1] = 0.0832 (-0.0044) (0.0010)		
SIMULATOR VAPOR 33.9°C	0.082	06:21
X[1] = 0.0829 (-0.0045) (0.0009)		
SIMULATOR VAPOR 33.9°C	0.083	06:22
X[1] = 0.0830 (-0.0048) (0.0011)		
BLANK TEST	0.000	06:23

Average = 0.083
Std Dev = 0.000

Instrument failed to see the interference solution. Checked filter wheel alignment and replaced interference solution. Will recalibrate and test again. RCD 7/28/14



CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/28/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

Ca	= 0.099		
CAL	= 0.944198	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	= 0.082	0.050 <= Xq <	0.200
a21	= 1.206312	1.050 <= a21 <	1.300
a31	= 0.496735	0.300 <= a31 <	0.800

Performed by RD Date 07/28/2014

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

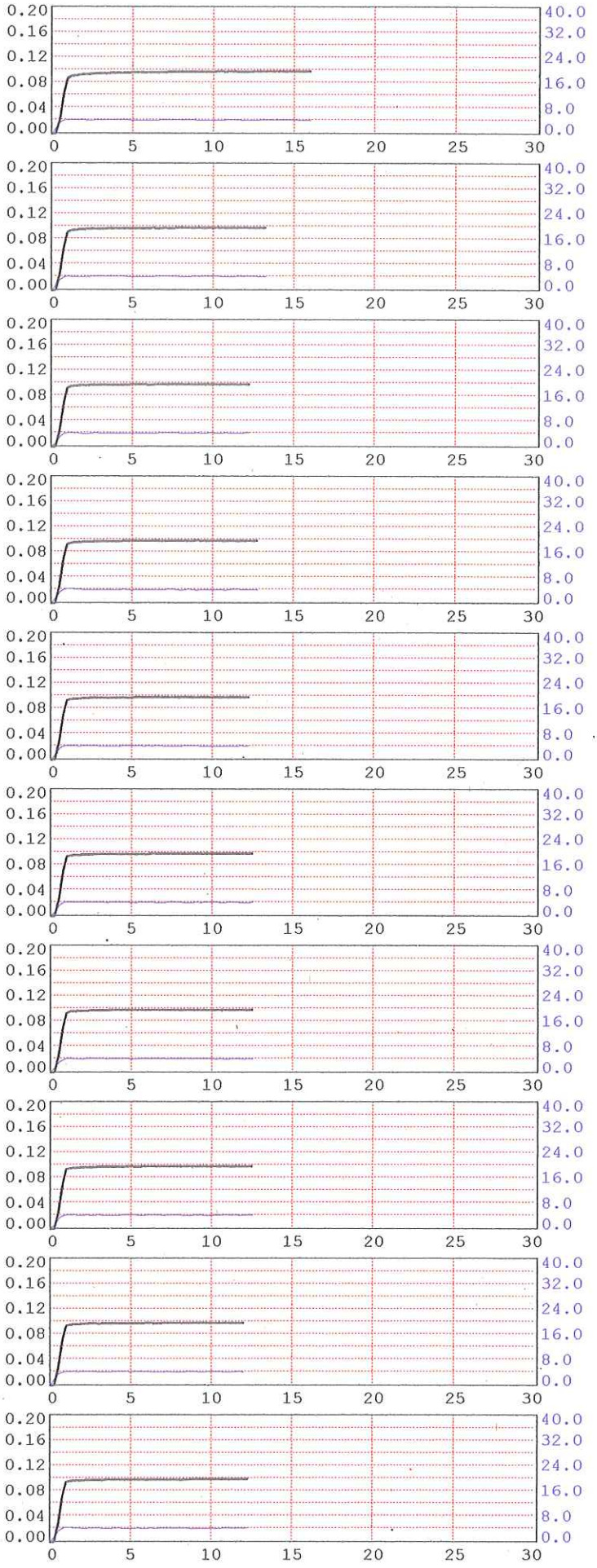
Date: 07/28/2014
Time: 08:41:55

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: GUTH 13100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	08:42
CALIBRATION CHECK	PASSED	08:42
SIMULATOR VAPOR 33.9°C	0.098	08:43
SIMULATOR VAPOR 33.9°C	0.098	08:44
SIMULATOR VAPOR 33.9°C	0.098	08:45
SIMULATOR VAPOR 33.9°C	0.098	08:46
SIMULATOR VAPOR 34.0°C	0.098	08:47
SIMULATOR VAPOR 34.0°C	0.098	08:48
SIMULATOR VAPOR 33.9°C	0.099	08:49
SIMULATOR VAPOR 33.9°C	0.098	08:50
SIMULATOR VAPOR 34.0°C	0.098	08:51
SIMULATOR VAPOR 33.9°C	0.099	08:52
BLANK TEST	0.000	08:53

Average = 0.098
Std Dev = 0.000



DIAGNOSTIC RESULT

DataMaster DMT: 100163
Location:
Calibration Date: 07/28/2014
Certification Date:
Installation Date:
Test Date: 07/28/2014
Test Time: 09:21:52

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.7°C
Breath Tube    = 45.3°C
Digital Sim    = 34.0°C

SETTINGS
Lamp Voltage   = 1.75 V
Cooler Voltage = 1.77 V
Bias Voltage   = 80 V
Chopper Freq   = 561 Hz

PUMP INFO
Flow Rate = 4.967 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)   -0.0722    -0.0701
MIN(V)   -0.0740    -0.0720

FILTER INFO
Filter 1  -0.072  Zero = true
Filter 2   0.146  Zero = true
Filter 3   0.530  Zero = true

CALIBRATION CHECK
Xq  = 0.082  0.11%
```

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

Date: 07/28/2014
Time: 08:55:27

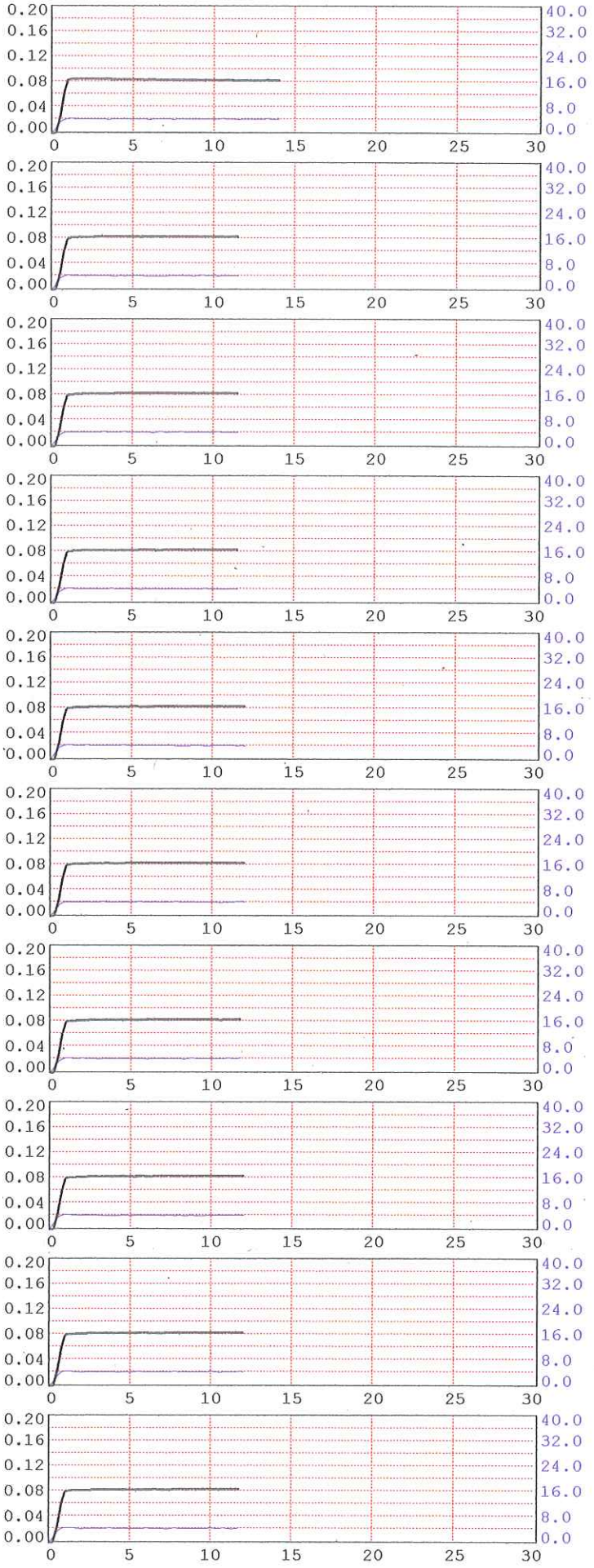
SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST		0.000	08:56
CALIBRATION CHECK		PASSED	08:56
Xq = 0.082 (0.32%)			
SIMULATOR VAPOR 33.9°C		0.083	08:56
X[1] = 0.0834	(-0.0044)	(0.0010)	
SIMULATOR VAPOR 34.0°C		0.083	08:57
X[1] = 0.0838	(-0.0044)	(0.0007)	
SIMULATOR VAPOR 33.9°C		0.083	08:58
X[1] = 0.0838	(-0.0044)	(0.0005)	
SIMULATOR VAPOR 34.0°C		0.083	08:59
X[1] = 0.0839	(-0.0009)	(0.0037)	
SIMULATOR VAPOR 34.0°C		0.084	09:00
X[1] = 0.0841	(-0.0045)	(0.0003)	
SIMULATOR VAPOR 34.0°C		0.084	09:02
X[1] = 0.0840	(-0.0045)	(0.0004)	
SIMULATOR VAPOR 33.9°C		0.083	09:03
X[1] = 0.0837	(-0.0046)	(0.0007)	
SIMULATOR VAPOR 34.0°C		0.083	09:04
X[1] = 0.0837	(-0.0046)	(0.0006)	
SIMULATOR VAPOR 34.0°C		0.083	09:05
X[1] = 0.0837	(-0.0045)	(0.0007)	
SIMULATOR VAPOR 34.0°C		0.083	09:06
X[1] = 0.0838	(-0.0045)	(0.0013)	
BLANK TEST		0.000	09:07

Average = 0.083
Std Dev = 0.000

still failing to pick up Acetone interference solution. Adjusted detector and setup / optimized cooler and lamp voltages. Will recal and try again. 7/28/14 RCD



CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/28/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

Ca = 0.099			
CAL = 0.951748	0.800	<= CAL <	1.200
b1 = 0.001	0.000	<= b1 <	0.004
b2 = 0.006	0.002	<= b2 <	0.010
b3 = 0.000	0.000	<= b3 <	0.004
Xq = 0.083	0.050	<= Xq <	0.200
a21 = 1.208441	1.050	<= a21 <	1.300
a31 = 0.506227	0.300	<= a31 <	0.800

Performed by RD Date 07/28/2014

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

Date: 07/28/2014
Time: 12:32:49

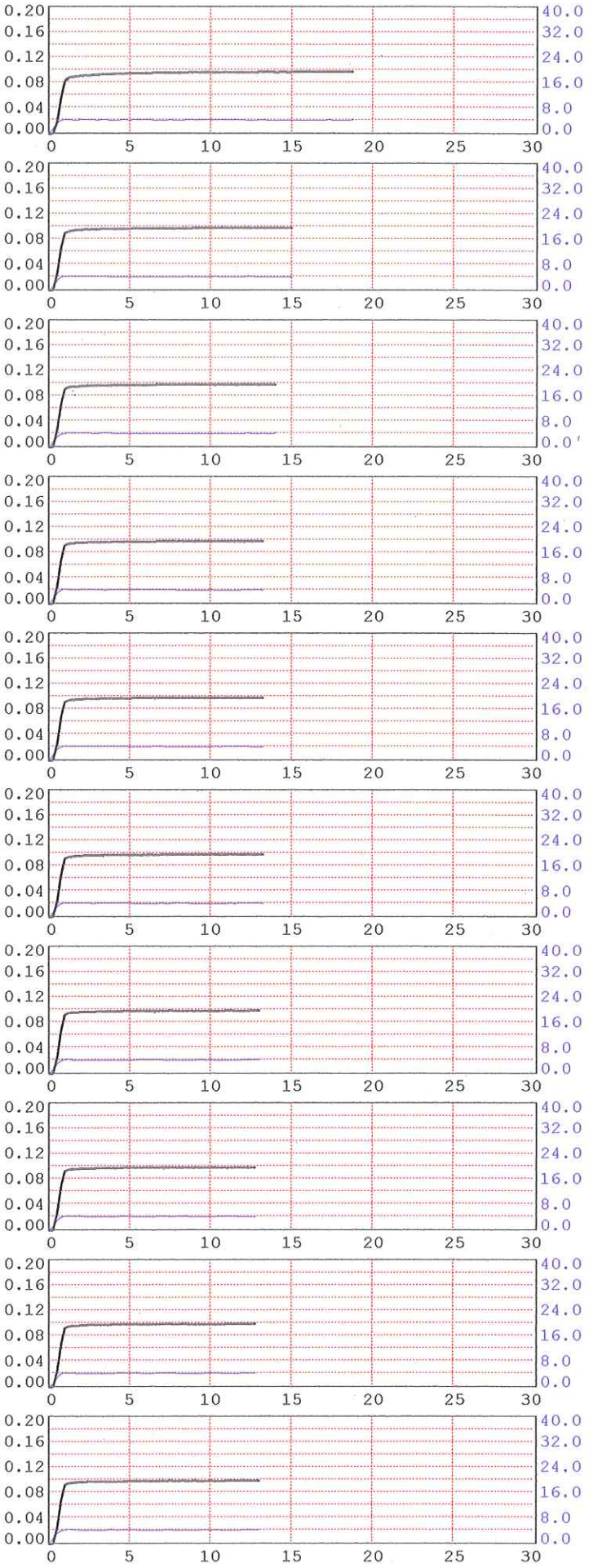
SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: GUTH 13100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	12:33
CALIBRATION CHECK	PASSED	12:33
SIMULATOR VAPOR 33.9°C	0.098	12:34
SIMULATOR VAPOR 34.0°C	0.098	12:35
SIMULATOR VAPOR 33.9°C	0.099	12:36
SIMULATOR VAPOR 34.0°C	0.098	12:37
SIMULATOR VAPOR 34.0°C	0.099	12:38
SIMULATOR VAPOR 34.0°C	0.099	12:39
SIMULATOR VAPOR 33.9°C	0.099	12:40
SIMULATOR VAPOR 33.9°C	0.099	12:41
SIMULATOR VAPOR 33.9°C	0.099	12:42
SIMULATOR VAPOR 33.9°C	0.099	12:43
BLANK TEST	0.000	12:44

Average = 0.098
Std Dev = 0.000

Interference still not detected. Replaced filter wheel, setup detector voltage, ran filter wheel test for 50 cycles, will recal and test again. RO 7/28/14



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CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/29/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

```
Ca   = 0.099
CAL  = 0.926921    0.800  <= CAL < 1.200
b1   = 0.000       0.000  <=  b1 < 0.004
b2   = 0.005       0.002  <=  b2 < 0.010
b3   = 0.000       0.000  <=  b3 < 0.004
Xq   = 0.089       0.050  <=  Xq < 0.200
a21  = 1.166758    1.050  <= a21 < 1.300
a31  = 0.489572    0.300  <= a31 < 0.800
```

Forgot to purge simulator ports - recalibrating instrument RCD 7/29/14

Performed by RCD Date 07/29/2014

CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/29/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

```
Ca   = 0.099
CAL  = 0.960737    0.800  <= CAL <  1.200
b1   = 0.000       0.000  <=  b1 <  0.004
b2   = 0.004       0.002  <=  b2 <  0.010
b3   = 0.000       0.000  <=  b3 <  0.004
Xq   = 0.090       0.050  <=  Xq <  0.200
a21  = 1.171777    1.050  <= a21 <  1.300
a31  = 0.485406    0.300  <= a31 <  0.800
```

Performed by RD Date 07/29/2014

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

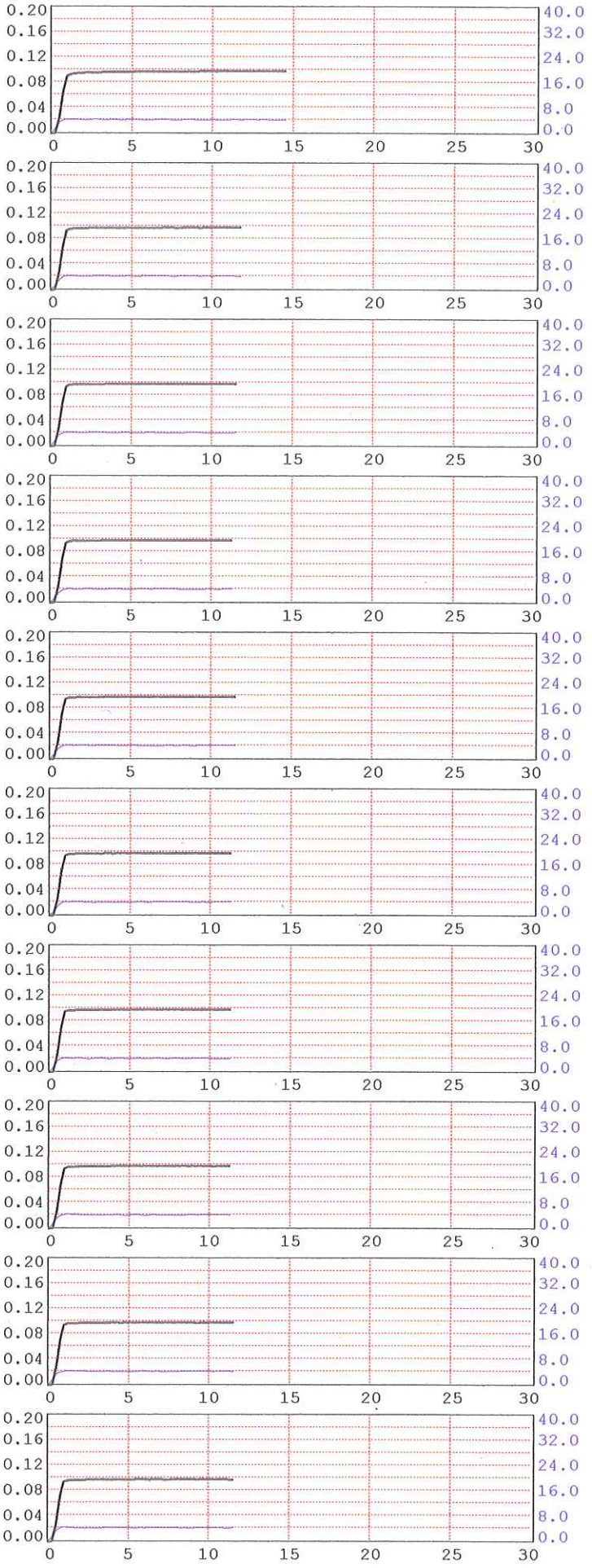
Date: 07/29/2014
Time: 09:51:40

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: GUTH 13100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	09:52
CALIBRATION CHECK	PASSED	09:52
SIMULATOR VAPOR 33.9°C	0.098	09:53
SIMULATOR VAPOR 33.9°C	0.098	09:54
SIMULATOR VAPOR 34.0°C	0.098	09:55
SIMULATOR VAPOR 33.9°C	0.098	09:56
SIMULATOR VAPOR 33.9°C	0.098	09:57
SIMULATOR VAPOR 34.0°C	0.098	09:58
SIMULATOR VAPOR 33.8°C	0.098	09:59
SIMULATOR VAPOR 33.9°C	0.098	10:00
SIMULATOR VAPOR 33.9°C	0.098	10:01
SIMULATOR VAPOR 33.9°C	0.098	10:02
BLANK TEST	0.000	10:03

Average = 0.098
Std Dev = 0.000



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ACCURACY & PRECISION REPORT

STATE OF VERMONT

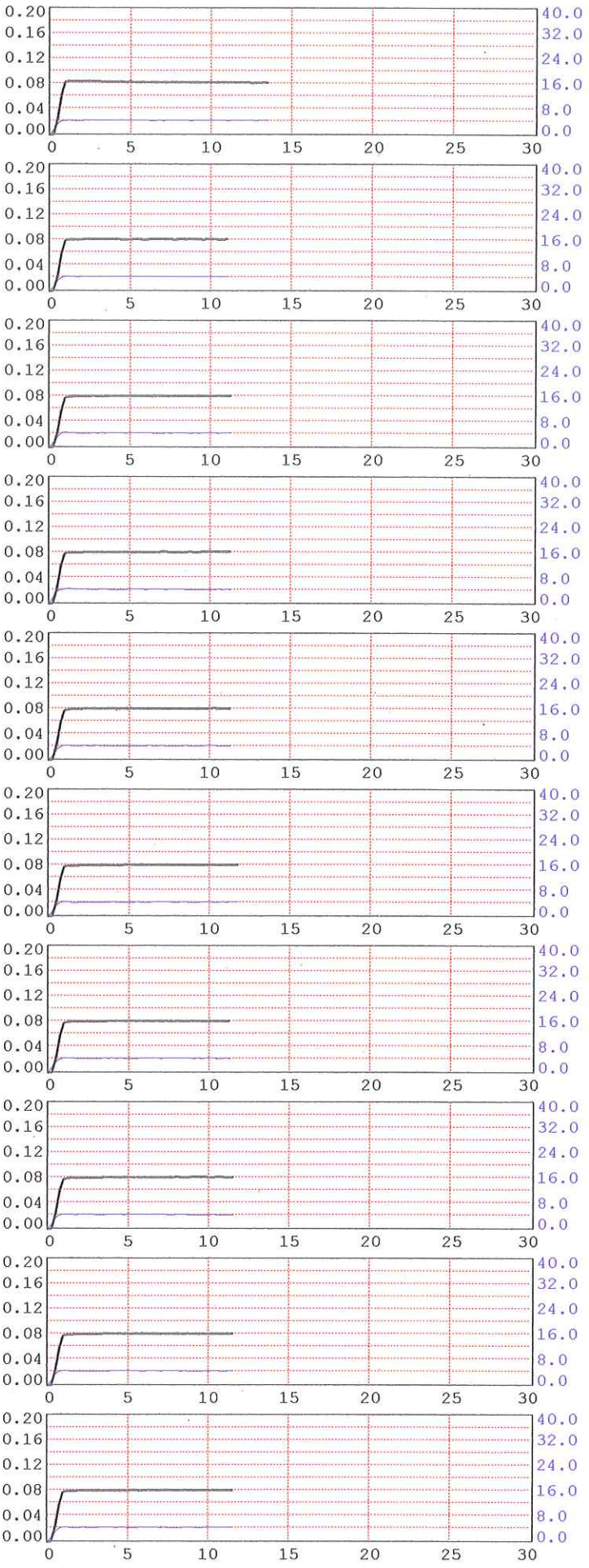
DataMater DMT: 100163

Date: 07/29/2014
Time: 10:04:59

SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST		0.000	10:05
CALIBRATION CHECK		PASSED	10:05
Xq = 0.090 (0.10%)			
SIMULATOR VAPOR	33.9°C	0.082	10:06
X[1] = 0.0828 (-0.0039) (0.0011)			
SIMULATOR VAPOR	33.9°C	0.082	10:07
X[1] = 0.0820 (-0.0044) (0.0002)			
SIMULATOR VAPOR	33.9°C	0.081	10:08
X[1] = 0.0817 (-0.0043) (0.0006)			
SIMULATOR VAPOR	33.9°C	0.082	10:09
X[1] = 0.0820 (-0.0043) (0.0007)			
SIMULATOR VAPOR	33.9°C	0.081	10:10
X[1] = 0.0817 (-0.0046) (0.0006)			
SIMULATOR VAPOR	34.0°CINTERFERENCE		10:11
X[1] = 0.0815 (-0.0051) (0.0001)			
SIMULATOR VAPOR	33.9°C	0.081	10:12
X[1] = 0.0816 (-0.0047) (0.0007)			
SIMULATOR VAPOR	33.9°C	0.082	10:13
X[1] = 0.0821 (-0.0045) (0.0010)			
SIMULATOR VAPOR	34.0°C	0.081	10:14
X[1] = 0.0818 (-0.0043) (0.0009)			
SIMULATOR VAPOR	33.9°CINTERFERENCE		10:15
X[1] = 0.0812 (-0.0052) (0.0003)			
BLANK TEST		0.000	10:16



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 103206
Location: VFL

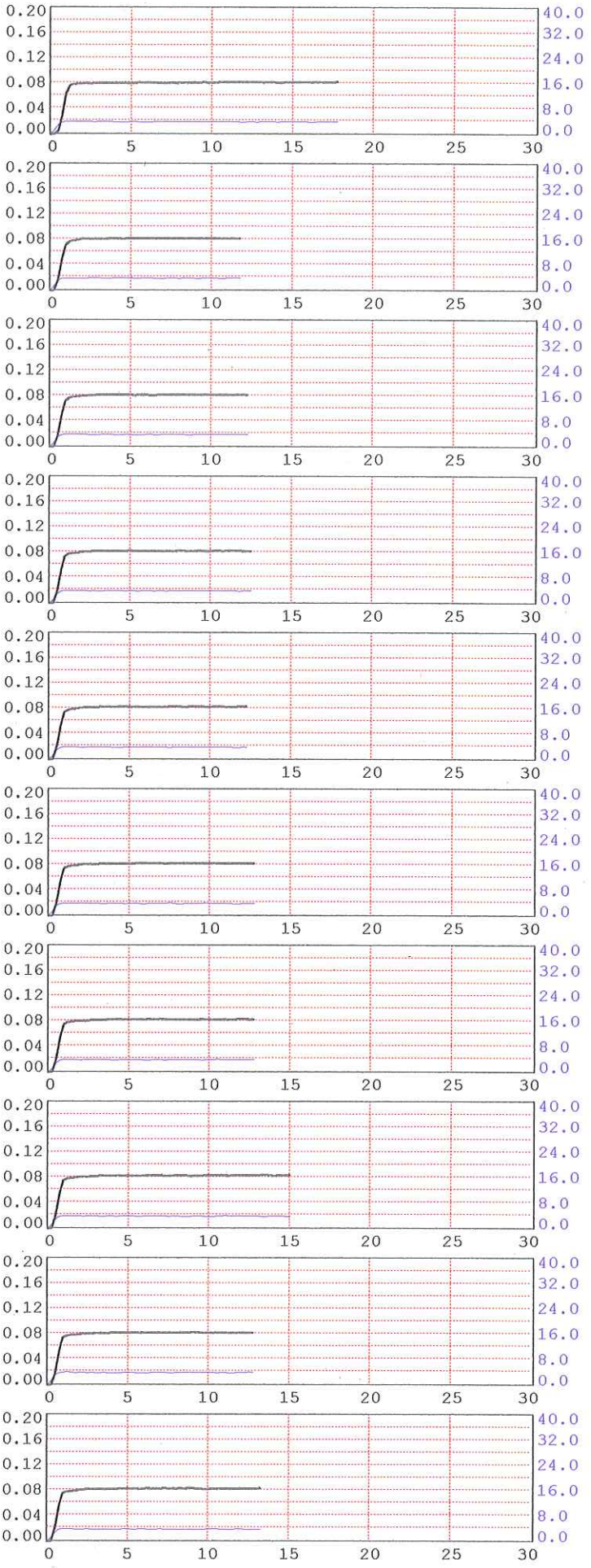
Date: 07/29/2014
Time: 12:50:18

SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	12:51
CALIBRATION CHECK	PASSED	12:51
Xq = 0.133 (0.13%)		
SIMULATOR VAPOR 34.2°C	0.082	12:51
X[1] = 0.0823 (-0.0043) (-0.0017)		
SIMULATOR VAPOR 34.2°C	0.082	12:52
X[1] = 0.0823 (-0.0048) (-0.0010)		
SIMULATOR VAPOR 34.2°C	0.082	12:53
X[1] = 0.0825 (-0.0047) (-0.0017)		
SIMULATOR VAPOR 34.2°CINTERFERENCE		12:54
X[1] = 0.0825 (-0.0053) (-0.0010)		
SIMULATOR VAPOR 34.1°C	0.083	12:55
X[1] = 0.0834 (-0.0042) (-0.0006)		
SIMULATOR VAPOR 34.2°CINTERFERENCE		12:57
X[1] = 0.0828 (-0.0053) (-0.0006)		
SIMULATOR VAPOR 34.2°C	0.083	12:58
X[1] = 0.0838 (-0.0042) (-0.0008)		
SIMULATOR VAPOR 34.2°C	0.083	12:59
X[1] = 0.0836 (-0.0044) (-0.0016)		
SIMULATOR VAPOR 34.2°CINTERFERENCE		13:00
X[1] = 0.0827 (-0.0059) (-0.0005)		
SIMULATOR VAPOR 34.1°CINTERFERENCE		13:01
X[1] = 0.0833 (-0.0051) (-0.0004)		
BLANK TEST	0.000	13:02

Still not detecting interference at 80%.
Adjusted chopper wheel to 525 Hz, will recal and test again 7/29/14 RCD



CALIBRATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/29/2014
Calibrated by: ROBERT DRISCOLL
Lot: 13-22-100

Ca	= 0.099		
CAL	= 0.982116	0.800	<= CAL < 1.200
b1	= 0.001	0.000	<= b1 < 0.004
b2	= 0.004	0.002	<= b2 < 0.010
b3	= 0.000	0.000	<= b3 < 0.004
Xq	= 0.090	0.050	<= Xq < 0.200
a21	= 1.176639	1.050	<= a21 < 1.300
a31	= 0.487123	0.300	<= a31 < 0.800

Performed by RD Date 07/29/2014

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ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

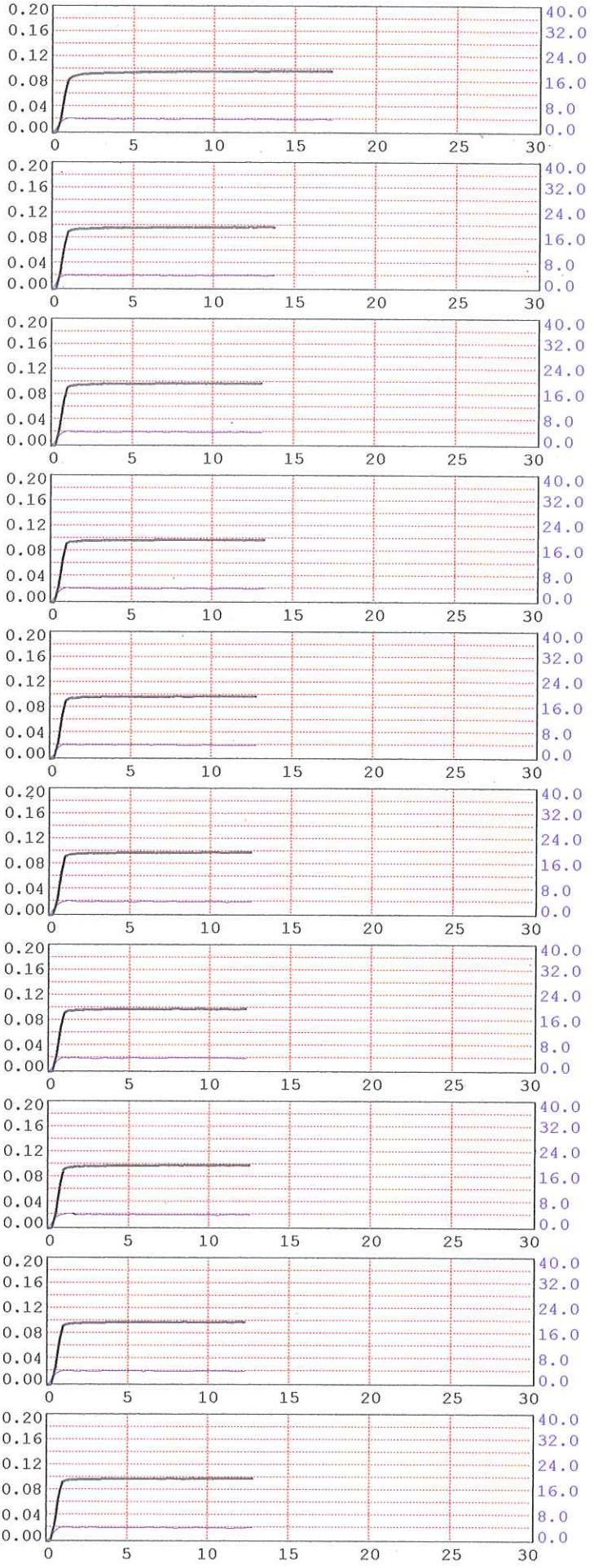
Date: 07/29/2014
Time: 13:19:57

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: GUTH 13100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	13:20
CALIBRATION CHECK	PASSED	13:20
SIMULATOR VAPOR 33.9°C	0.098	13:21
SIMULATOR VAPOR 33.9°C	0.098	13:22
SIMULATOR VAPOR 33.9°C	0.098	13:23
SIMULATOR VAPOR 33.9°C	0.099	13:24
SIMULATOR VAPOR 33.9°C	0.098	13:25
SIMULATOR VAPOR 33.9°C	0.099	13:26
SIMULATOR VAPOR 33.9°C	0.099	13:27
SIMULATOR VAPOR 33.9°C	0.099	13:28
SIMULATOR VAPOR 33.9°C	0.098	13:29
SIMULATOR VAPOR 33.9°C	0.099	13:30
BLANK TEST	0.000	13:31

Average = 0.098
Std Dev = 0.000



ACCURACY & PRECISION REPORT

STATE OF VERMONT

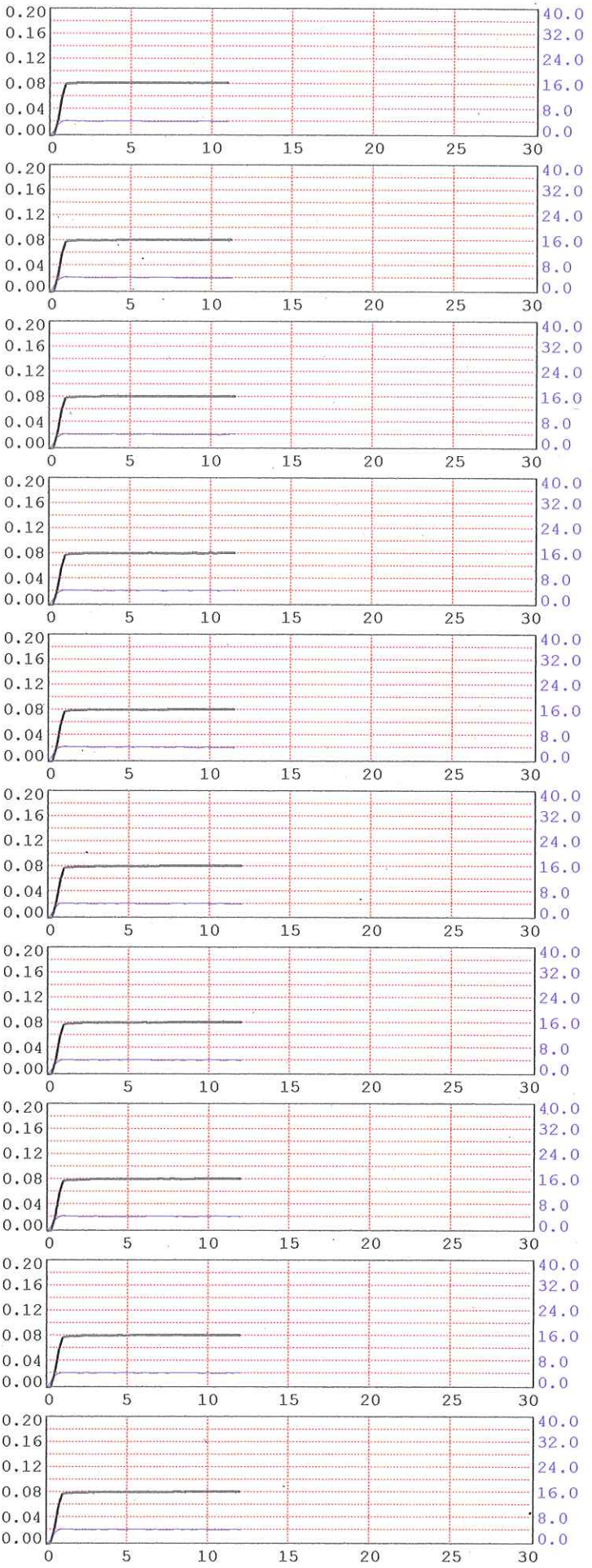
DataMater DMT: 100163

Date: 07/29/2014
Time: 13:40:33

SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	13:41
CALIBRATION CHECK	PASSED	13:41
Xq = 0.089 (0.39%)		
SIMULATOR VAPOR 33.9°C	0.083	13:41
X[1] = 0.0832 (-0.0041) (0.0025)		
SIMULATOR VAPOR 33.9°C	0.082	13:42
X[1] = 0.0824 (-0.0048) (0.0017)		
SIMULATOR VAPOR 34.0°CINTERFERENCE		13:43
X[1] = 0.0825 (-0.0051) (0.0020)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		13:44
X[1] = 0.0821 (-0.0052) (0.0015)		
SIMULATOR VAPOR 33.8°CINTERFERENCE		13:46
X[1] = 0.0823 (-0.0054) (0.0011)		
SIMULATOR VAPOR 34.0°CINTERFERENCE		13:47
X[1] = 0.0823 (-0.0052) (0.0021)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		13:48
X[1] = 0.0823 (-0.0054) (0.0012)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		13:49
X[1] = 0.0822 (-0.0051) (0.0020)		
SIMULATOR VAPOR 33.9°C	0.082	13:50
X[1] = 0.0825 (-0.0046) (0.0018)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		13:51
X[1] = 0.0823 (-0.0050) (0.0020)		
BLANK TEST	0.000	13:52



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ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 100163

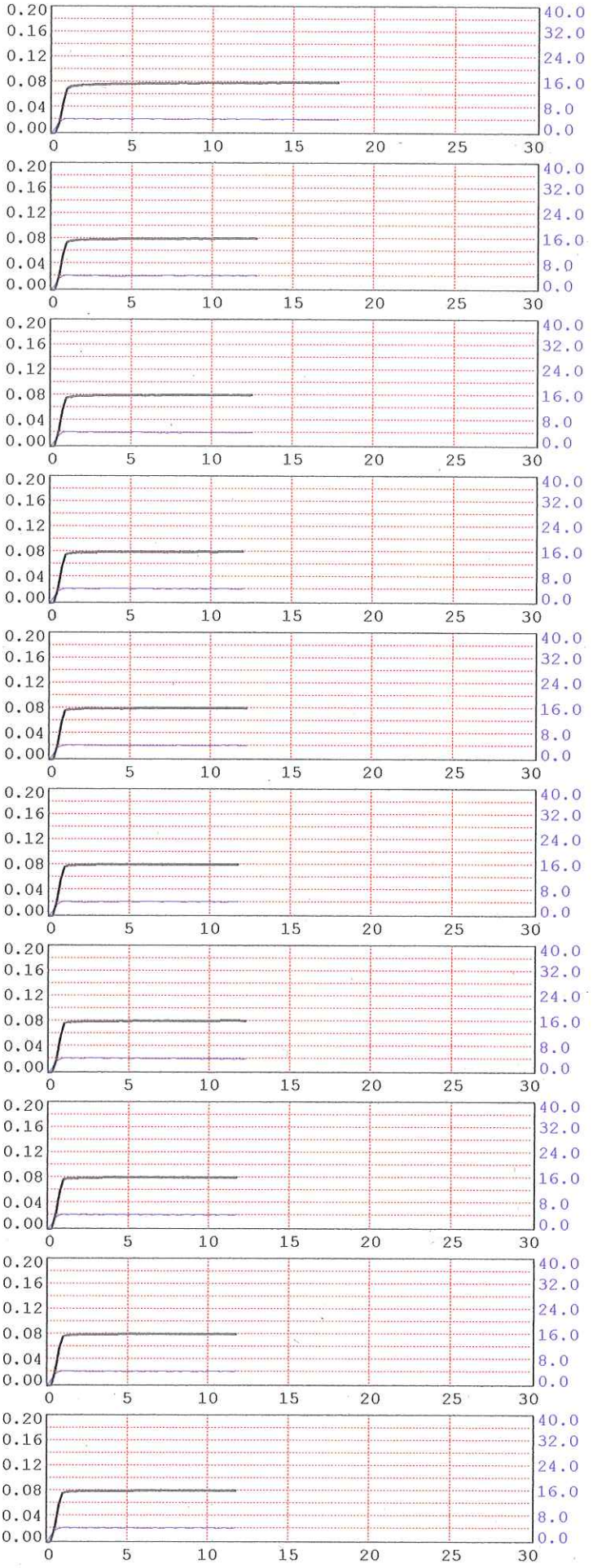
Date: 07/29/2014
Time: 14:03:56

SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-08-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	14:04
CALIBRATION CHECK	PASSED	14:04
Xq = 0.089 (0.58%)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		14:05
X[1] = 0.0805 (-0.0053) (0.0008)		
SIMULATOR VAPOR 33.8°C	0.081	14:06
X[1] = 0.0813 (-0.0046) (0.0008)		
SIMULATOR VAPOR 33.9°C	0.081	14:07
X[1] = 0.0815 (-0.0048) (0.0011)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		14:08
X[1] = 0.0814 (-0.0053) (0.0013)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		14:09
X[1] = 0.0816 (-0.0055) (0.0010)		
SIMULATOR VAPOR 33.9°C	0.081	14:10
X[1] = 0.0819 (-0.0050) (0.0011)		
SIMULATOR VAPOR 33.9°CINTERFERENCE		14:11
X[1] = 0.0816 (-0.0054) (0.0010)		
SIMULATOR VAPOR 33.9°C	0.081	14:12
X[1] = 0.0817 (-0.0048) (0.0019)		
SIMULATOR VAPOR 33.9°C	0.081	14:13
X[1] = 0.0816 (-0.0049) (0.0018)		
SIMULATOR VAPOR 33.9°C	0.081	14:14
X[1] = 0.0815 (-0.0046) (0.0012)		
BLANK TEST	0.000	14:15

Still not detecting Acetone @ 80i..
Replaced Acetone solution with different lot #. RCD 7/29/14



ACCURACY & PRECISION REPORT

STATE OF VERMONT

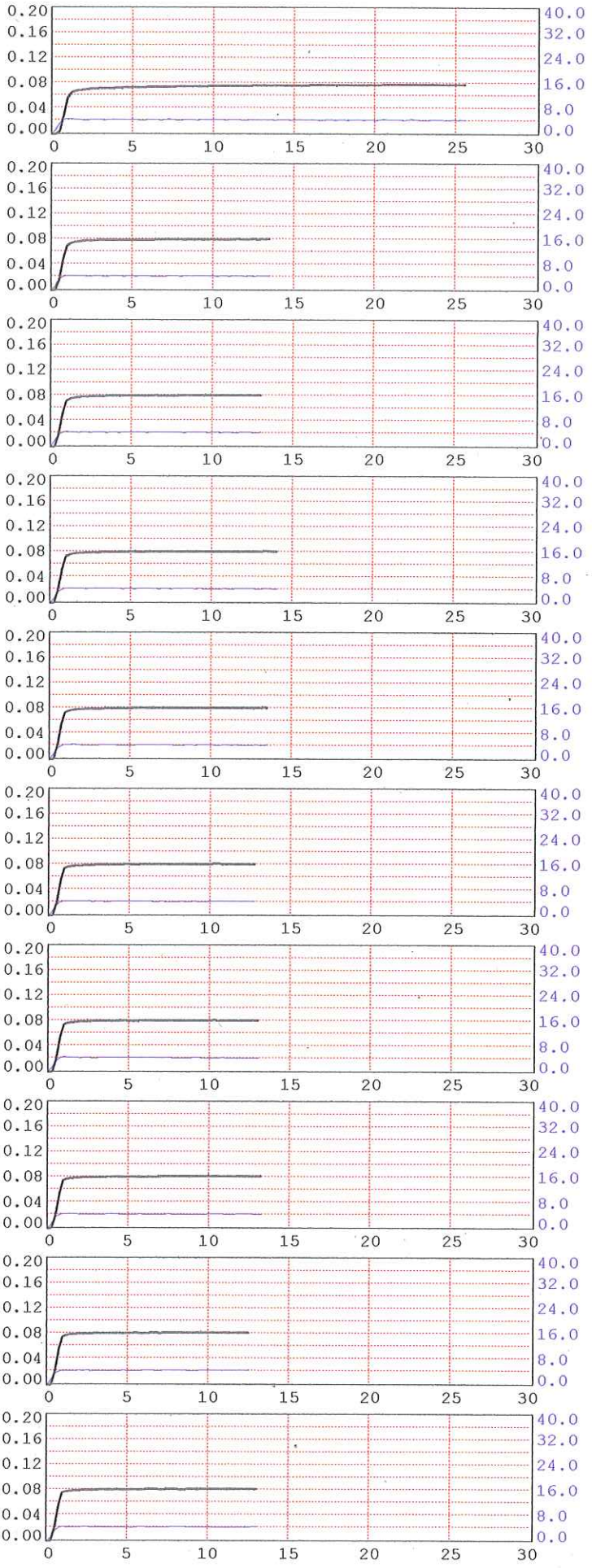
DataMater DMT: 100163

Date: 07/31/2014
Time: 08:57:52

SUPERVISOR NAME:
RCD INTERFERENCE TEST

SOLUTION LOT #: 14-11-08A1
SOLUTION CONCENTRATION: 0.079

BLANK TEST	0.000	08:58
CALIBRATION CHECK	PASSED	08:58
SIMULATOR VAPOR 33.9°C	INTERFERENCE	08:59
SIMULATOR VAPOR 33.8°C	0.081	09:00
SIMULATOR VAPOR 34.0°C	INTERFERENCE	09:01
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:02
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:03
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:04
SIMULATOR VAPOR 34.0°C	INTERFERENCE	09:05
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:06
SIMULATOR VAPOR 33.9°C	INTERFERENCE	09:07
SIMULATOR VAPOR 34.0°C	INTERFERENCE	09:09
BLANK TEST	0.000	09:09



CERTIFICATION REPORT

DataMaster DMT: 100163
Calibration Date: 07/29/2014
Certification Date: 07/31/2014
Certified by: ROBERT DRISCOLL

Diagnostic Results

```
VERSIONS
DMT: 1.01
PIC: 2.06
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.0°C
Breath Tube    = 44.2°C
Digital Sim    = 34.0°C

SETTINGS
Lamp Voltage   = 1.73 V
Cooler Voltage = 1.68 V
Bias Voltage   = 80 V
Chopper Freq   = 527 Hz

PUMP INFO
Flow Rate = 4.964 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)   -0.0140    -0.0112
MIN(V)   -0.0159    -0.0130

FILTER INFO
Filter 1  -0.012  Zero = true
Filter 2   0.746  Zero = true
Filter 3   0.495  Zero = true

CALIBRATION CHECK
Xq  = 0.089  1.07%
```

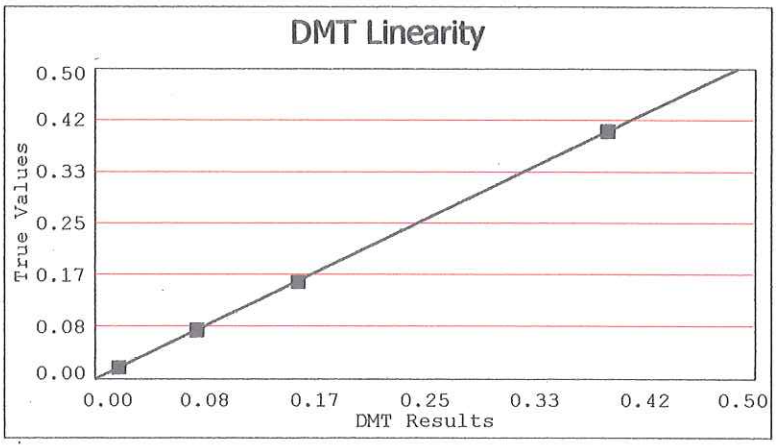
Options

```
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
0.020 g/210L	0.018 g/210L	0.0000
Lot # 13-17-020		
0.080 g/210L	0.077 g/210L	0.0000
Lot # 13-18-080		
0.158 g/210L	0.154 g/210L	0.0000
Lot # 14-06-160		
0.400 g/210L	0.388 g/210L	0.0000
Lot # 13-20-400		

$R^2 = 1$



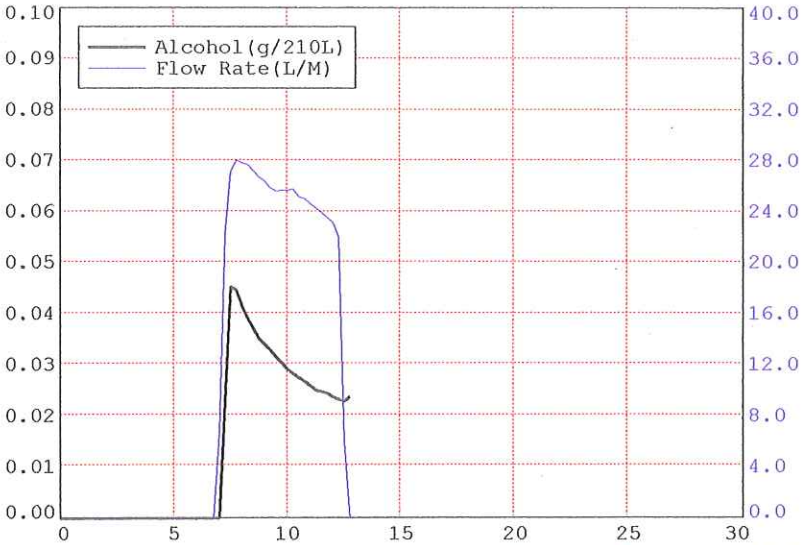
Acetone Interference Test

Lot # 14-11-08A1

Interference Detected

Mouth Alcohol Test

Mouth Alcohol Detected

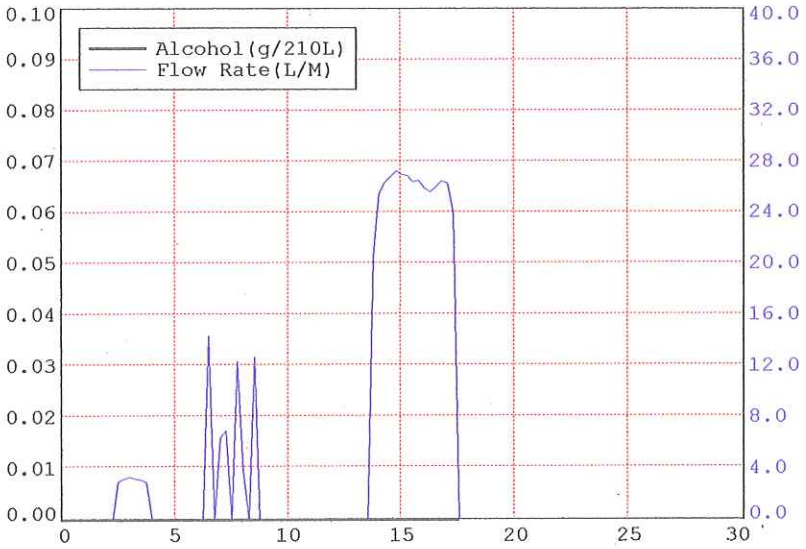


RF Detection Test

Passed

Sample Acceptance Test

Passed



CERTIFICATION PASSED

Performed by RD Date 07/31/2014

Reviewed by Date 8/4/2014