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IN AND FOR THE STATE OF WASHINGTON

Plaintiff,)
v.) Case No.
Defendant.)
MEMORANDUM IN SUPPORT OF
MOTION TO SUPPRESS

“Preservation of the individual citizen’s confidence in government is [of the highest] important[ce].” *First Nat. Bank of Boston v. Bellotti*, 435 U.S. 765, 789, 98 S.Ct. 1407 (1978).

“If the citizens of the State of Washington are to have any confidence in the breath-testing program, that program has to have some credence in the scientific community as a whole.” *City of Seattle v. Clark-Munoz*, 152 Wn.2d 39, 47 (2004) (quoting Ruling by District Court Panel).

“The most important consideration for [the Court] now is the preservation of the integrity of the criminal justice system. We must handle these [] cases now before us in such a fashion that the public, the defense bar, the prosecuting attorneys, and the courts of Washington will clearly understand that we will not tolerate criminal convictions based on tainted evidence, but will insist upon proper standards of conduct and procedure.” *State v. Roche*, 114 Wn.App. 424, 446 (2002).

I. TABLE OF CONTENTS

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

I. TABLE OF CONTENTS.....ii

II. BRIEF CHRONOLOGY.....iv

III. FACTS AND BACKGROUND.....1

A. THE ROLE OF SIMULATOR SOLUTIONS.....1

 1. THE USE OF BREATH TESTS IN PROSECUTIONS FOR DUI1

 2. SIMULATOR SOLUTIONS AS REFERENCE MATERIALS.....2

 3. SOLUTION CERTIFICATION7

 a. THE PROCESS.....7

 b. DOCUMENTATION.....13

 4. BREATH TEST SECTION QAP PROTOCOLS.....15

 5. SIMULATOR SOLUTIONS IN PROSECUTIONS UTILIZING BREATH TESTS.....16

 6. ACCURACY, PRECISION AND BIAS.....22

 7. FORENSICALLY INDEFENSIBLE ERROR.....24

B. PERJURY, CONSPIRACY, COVER-UPS AND FALSE SWEARING.....26

 1. PERJURY AND THE STATE’S ONGOING RELIANCE UPON IT.....26

 a. ANN MARIE GORDON.....26

 b. MELISSA PEMBERTON.....30

 2. CONSPIRACY TO COMMIT PERJURY.....31

 3. THE COVER UP.....32

 4. FALSE SWEARING.....34

C. SYSTEMIC CARELESSNESS WITHIN THE TOXICOLOGY LAB.....37

 1. MISRECORDING AND REPORTING OF DATA.....38

 2. MIXING UP SOLUTIONS.....39

 3. WRONG VAPOR CONCENTRATIONS.....41

 4. INCLUSION OF BAD DATA.....43

 5. FAILURE TO TRAIN.....44

 6. SCIENCE FOR NONSCIENTISTS.....45

 a. COMPUTER PROGRAMMING ISSUES.....45

 b. SECRETARY SCIENTISTS.....48

 7. SIGNING OFF ON THE WRONG DATA.....49

 8. PHYSICAL IMPOSSIBILITIES.....49

 9. WASHINGTON’S CLAIRVOYANT TOXICOLOGISTS.....50

D. SYSTEMIC PATTERN AND ROUTINE OF SCIENTIFICALLY UNACCEPTABLE PRACTICES.....50

 1. SCIENTIFIC STANDARDS.....51

 a. GENERALLY.....51

 b. STANDARDS APPLICABLE TO BREATH TESTING.....51

 2. FAITH IN BLACK BOXES.....54

 3. OUTLIERS AND THE DISCARDING OF VALID DATA.....59

 4. THE PROBLEM OF MEANS ACROSS MACHINES.....69

E. DR. LOGAN AND INCOMPETENCE.....78

 1. THE AUDITS.....78

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

2. COMPLACENCY.....79
3. REPEATED BREAKDOWNS.....79
4. LACK OF SCIENTIFIC UNDERSTANDING: THE MYSTERY OF BIAS.....81
F. ADVOCACY OVER SCIENCE.....85
G. NERO’S FIDDLE.....86
1. CONTINUING PROBLEM OF MEANS ACROSS MACHINES.....87
2. THE OUTLIERS.....88
3. BREATH TEST SAFEGUARDS AND TROUBLESOME REALITY.....89
4. A QUESTION OF BIAS.....91
5. SHUNNING PERSONAL RESPONSIBILITY.....93
6. DECLARATIONS AND THE CONTINUING DISREGARD FOR TRUTH.....94
7. $\int f du \cdot 10^5 Pa = ?$96
8. UNCLEANSSED SINS.....98
9. THE UNRAVELING QUILT.....98
10. DOWSING THE FLAMES.....99
IV. ARGUMENT.....102
A. DUE PROCESS FORBIDS THE USE OF FALSE EVIDENCE AND PERJURY.....102
B. THE USE OF FALSE EVIDENCE AND PERJURY CONSTITUTES PROSECUTORIAL MISCONDUCT.....108
C. SUPPRESSION OF BREATH TESTS AFTER JENSEN: THE RULES OF EVIDENCE.....115
1. ER 702 AND ER 703.....115
2. RCW 46.61.506(3).....116
D. BREATH TESTS ARE INADMISSIBLE UNDER THE RULES OF EVIDENCE.....116
1. ER 702 – THE LACK OF EXPERTISE AND HELPFULNESS.....117
a. THE LACK OF EXPERTISE.....119
b. THE LACK OF HELPFULNESS.....120
2. ER 703 – THE ABSENCE OF A BASIS FOR REASONABLE RELIANCE.....128
3. RCW 46.61.506(3) – DEVIATIONS RENDERING TEST RESULTS UNRELIABLE.....135
E. BREATH TESTS FAIL TO SATISFY THE DUE PROCESS STANDARD OF RELIABILITY.....138
F. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)(vii).....141
1. AS APPLIED TO THE FACTS SUB JUDICE RCW 46.61.506(4)(b) IS VIOLATIVE OF DUE PROCESS.....141
a. AS APPLIED CHALLENGES TO THE CONSTITUTIONALITY OF A STATUTE.....141
b. ASSUMING THE TRUTH OF KNOWN PERJURY AND FALSE AND MISLEADING EVIDENCE.....142
c. THE APPEARANCE OF FAIRNESS DOCTRINE.....145
2. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)(vi).....146
3. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)(vii).....148
V. CONCLUSION.....149

II. BRIEF CHRONOLOGY¹

A brief chronology of the Labs recent history will provide a context and a reference guide for the more detailed background sections which follow.²

1990

- Logan named the State Toxicologist. Logan was Lab Manager of the Washington State Toxicology Lab (the "Lab") previously.

1998:

- January: Ann Marie Gordon was hired by the Lab.

1999

- Logan promoted to Director of the Forensic Laboratory Services Bureau.

2000:

- November 1: Gordon promoted to Lab manager. Informs Logan people in the Lab testing simulator solutions for one another. Logan says practice is unacceptable and orders it stopped.

2001 – 2003:

- Gordon was the last or second to last solution tester to sign most solution worksheets. Delays caused by Gordon result in slower distribution solutions. Unacceptable to Gordon and Ed Formoso (a 32 year veteran of the Lab).

2002:

- June 25: Jayne Thatcher certifies solutions 02018 and 02019. The solutions are mixed up. Approximately 9,946 tests are affected statewide.

2003 – 2004:

¹ Chronology authored by Kevin Trombold. This chronology is necessarily rough and incomplete but it is offered as a guide to assist the Court. For a more complete and supplementary analysis the court should read the Facts and Background Section.

² Throughout this brief, transcripts are designated as follows: DOL v. Arntson (Day 1 & 2: A1, p.# or A2, p.#), State v. Gilbert (Day 1, 2, or 3: S1, p.#, S2, p.# or S3, p.#), King County Hearings (Day 1-7: KC1, p.#, KC2, p.#, etc...). Exhibits are designated Skagit Ex.#, Arnston Ex.# and KC Ex. #. All transcripts and exhibits may be found at Washington DUI Center <www.washingtonduicenter.com>. King County exhibits are posted but the transcripts have not yet been posted.

1 - Gordon and Formoso began fraudulent certifications. Formoso tests solutions
2 while Gordon falsely signs sworn declarations stating that she has done the
3 testing. The purpose is so that Gordon can testify in Court that she tested
4 solutions.

5 2004:

6 - October: WSP internal audit finds Lab unable to account for lost evidence, avoid
7 damaging and destroying evidence, and document evidence status. Also finds
8 Lab to be “Non-compliant” with respect to proper record keeping procedures
9 concerning “Simulator Solution Logbooks.” Concludes that “WSP policies and
10 required procedures appear to be of secondary concern to lab
11 personnel...Accurate record keeping and quarterly auditing as required by Patrol
12 Policies and CALEA standards is severely deficient.” Gordon responds that she
13 does not have time to follow proper protocols so won’t.

14 - November 17: Melissa Pemberton prepares QAP solution 04040 with an
15 average alcohol concentration (AC) of .1871. Analyst Brian Capron signs
16 declaration swearing AC is .1790. Third analyst signs declaration for wrong
17 solution.

18 2005:

19 - January 27: Solution 05008 prepared as a field solution. Later used to QAP
20 DataMasters. Gordon falsely certified this solution. Removal of perjured data
21 results in AC of .1022, outside required range for QAP solutions. This error
22 impacted 1,679 tests.

23 - March 21: Solution 05012, a .08 QAP solution, is prepared by Asa Louis but
24 lacks a valid control test, which is required under the protocols.

- June 3: Melissa Pemberton, a quality control manager, tests solution 05017 for
Gordon knowing Gordon would fraudulently sign declaration.

- July 6: Dr. Nuwayhid prepares solution 05024 but fails to sign worksheet or
declaration indicating that she has done so.

- August: Lab reprograms solution certification software but fails to verify that
new code functions properly. Change increased number of analysts who could
enter data from 12 to 16 but software failed to include extra analysts’ data in
calculations.

- December: WSP conducts unannounced internal spot check of Lab. Gordon’s
response was “not positive”.

2006:

- 1
- 2 - January 13: Solution 06003 was prepared as a field solution with an AVC of .1024. Later used to QAP DataMasters even though outside required range for QAP solutions. 392 tests were impacted by this error.
- 3
- 4 - August 9: Lisa Piquette (now Noble) prepares solution 06028, a .08 QAP solution. Improperly discards valid test data resulting in forensically indefensible error in equivalent vapor concentration (EVC). QAPs were performed on thirty-two machines using this solution. 3,445 tests were impacted by this.
- 5
- 6
- 7 - October: Due to software error, computer miscalculates AC of QAP solution 06037 resulting in forensically indefensible error in EVC. 15 DataMasters were calibrated with this solution impacting 2,691 tests.
- 8
- 9 - November: Brian Capron improperly certifies field solution 06043 using a gas chromatograph with a stuck injector needle. This required that his data be discarded. It was not, resulting in an incorrect EVC being certified. The number of tests affected is still undetermined.
- 10
- 11 - November 6: Lisa Piquette (Noble) prepares QAP solution 06042, which has AC of .1903. Nuwayhid and Piquette both sign declarations stating AC is .15.
- 12
- 13 - November 14: Paige Long prepares QAP solution 06044, which has AC of .0500. Nuwayhid, Long, and Formoso sign declarations stating AC is .04.
- 14
- 15 - November 14: Paige Long prepares QAP solution 06045, which has AC of .0980. Long, Formoso, and Nuwayhid sign declarations stating AC is .08.
- 16
- 17 - November 14: Paige Long prepares QAP solution 06046 which has AC of .1273. Long, Formoso, and Nuwayhid sign declarations stating AC is .10.
- 18
- 19 - November: Field solution 06048 is prepared. Programming error results in incorrect AC of .1020. Solution subsequently used in QAP of DataMasters. When error corrected AC found to be .1027, outside range required for QAP solution. At least 21 tests affected.
- 20
- 21 2007:
- 22 - January: Sarah Swenson prepares QAP solution 07002 which has AC of .0473. Long, Swenson and Miranda sign declarations stating AC is .04.
- 23
- 24 - January: Sarah Swenson prepares QAP solution 07003 which has AC of .0997.

1 Long, Swenson and Miranda sign declarations stating AC is .08.

2 - January: Sarah Swenson prepares QAP solution 07004 which has AC of .1289.
Long, Swenson and Miranda sign declarations stating AC is .10.

3 - January: Sarah Swenson prepares QAP solution 07005 which has AC of .1898.
4 Long, Swenson and Miranda sign declarations stating AC is .15.

5 - March 15: The first of two anonymous tips is called into WSP stating that the
6 “simulator solutions are being falsified as far as their certifications.”

7 - March 19: Field solution 07007 is last solution Gordon’s name appears on.

8 - March 23 - 24: Logan speaks with Gordon about anonymous tip, assigns her to
investigate it.

9 - March 26: New Field solution certification protocols adopted. First update to
10 certification protocols in 2 years.

11 - April 11: Gordon and Formoso submit official investigation of first anonymous
tip. No mention made of fraudulent certifications. Conclude that “this
12 laboratory has prepared simulator solutions for over 20 years. No solution has
ever left this laboratory with an incorrect concentration.”

13 - April 15 - 17: Logan indicates Gordon first reveals fraudulent conduct to him.
He realizes that this was likely the source of the complaint. Logan nonetheless
14 releases the official investigation conducted by Gordon and Formoso without
correction. Although aware of the fraudulent certifications, Logan does nothing
15 about it.

16 - July 9: Second anonymous tip arrives at WSP stating that Gordon doesn’t really
certify all those simulator solutions.

17 - July 20: Gordon resigns. Prosecutors request Logan investigate effect of
18 withdrawing Gordon’s numbers.

19 - July 26: Lab posts a statement on their website that Gordon’s certifications have
been removed but that the test results have not changed.

20 - July 26: Gullberg sends email directing all breath test technicians to remove and
21 cease use of Ann Marie Gordon involved solution batches.

22 - August 6: Sergeant Sharp sends e-mail ordering all breath test technicians to
stop using field solutions as quality assurance solutions.

23 - August 9: Lab posts notice of August 2005 programming error and Logan’s
24

1 analysis of effects. Discovered while looking into impact of Gordon's perjury.

2 - August 7: New QAP and Field solution certification protocols adopted. Second
3 amendment since first anonymous tip. Solution 07025 is first solution certified
4 following the August 7th protocol changes.

4 - August 14: Pemberton confesses to Sergeant Penry and Detective Moate that she
5 did a test for Gordon knowing that it was for Gordon.

6 - August 21: Internal WSP audit of Lab finds that "the department is
7 unnecessarily exposed to litigation due to insufficient documentation and
8 disregard for evidence handling policies and procedures." Due to carelessness
9 and poor lab practices, "[s]uccessful prosecution of cases is compromised."
"Mandatory audits are not being completed...Non-standard evidence handling
procedures and insufficient documentation to ensure the same...and failure to
perform required audits jeopardizes operational performance as well as CALEA
accreditation."

10 - September 10: Pemberton and Thatcher testify in DOL v. Olsen, admitting to
11 False Swearing by signing declarations under oath to unqualified statements of
12 fact that they did not know to be true. The Department of Licensing matters
13 joined for that hearing are dismissed.

13 - September 12: Brianna Peterson certifies solution 07031. Her data contains so
14 many outliers that the entire solution batch should have been discarded under
15 subsequent protocols.

15 - September 22: New Breath Test Program Policy and Procedure Manual adopted.

16 - September 27: Solution 07024 is last solution certified by Formoso. He is later
17 placed on administrative leave pending the investigation into his conduct.

17 - September 27: WSP begins a new review procedure for solution certifications.
18 Solution 07025 is the first batch to be reviewed by Trooper Denton and retired
19 Sgt. Gullberg.

19 - September 28: WSP posts a notification that the procedures for preparation have
20 changed and a data review of past solutions has begun.

21 - October:

- 22 - Logan is made aware that Pemberton tested for Gordon but takes no action.
- 23 - Noble and Nuwyhid resign declarations for solutions 06042, 06044, 06045,
24 06046 and 06047 even though they still contain false information.
- ASCLD/Lab Consulting audits solution certification process finding
significant problems. Indicates that only once remedial actions have been

1 implemented will the program be deemed scientifically sound and acceptable.

- 2 - October 1: Gullberg and Denton review their first fraudulently certified batch. Both Formoso's and Gordon's data are retained in certification calculations.
- 3
- 4 - October 5: New QAP and Field solution certification protocols adopted. Third amendment since first anonymous tip.
- 5 - October 8, 9, 10: Skagit County District Court holds three days of testimony regarding current issues at the Washington State Toxicology Lab. Only one programming error revealed.
- 6
- 7 - October 8: Brian Capron and Justin Knoy would not swear under oath that the certifications "corrected" by Gullberg/Denton, and resigned by both analysts, were correct.
- 8
- 9 - October 8: Pemberton testified in Skagit County that she did not run data for Gordon. This is false as finally admitted by Logan three months later in King
- 10 County.
- 11 - October 17: First day of hearings in DOL v. Arntson. Testimony is taken from Logan and Gullberg. A second programming error is revealed. Logan admits that he is not qualified to comment on the issue of weighed means.
- 12
- 13 - October 26: Second day of hearings in DOL v. Arntson. Testimony is taken from Gullberg and Dr. Ashley Emery. Gullberg and Emery demonstrate use of weighted mean causes changes in EVC of solutions large enough to impact breath tests.
- 14
- 15 - October 26: Solution 07056 is first solution certified following the October 5th protocol changes.
- 16
- 17 - December 18: New QAP and Field solution certification protocols adopted. Fourth amendment since first anonymous tip. First to include any criteria for analyzing possible outliers.
- 18
- 19 - December 28: Jayne Thatcher's 5 ½ year old error with solutions 02018 and 02019 is discovered while preparing for King County hearings.

20 2008:

- 21 - January 2, a King County panel of judges begins seven days of testimony and
- 22 one day of arguments. Witnesses included Gullberg, Denton, Logan, Dr. Ashley Emery, Dr. Nayak Pollisar, and numerous analysts from the Lab, both in person
- 23 and by stipulated declarations.

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- January 3: Solution 08001, is first solution certified following the December 5th protocol changes.
- January 4: King County Panel hears that at least 18,178 breath tests statewide are affected by the various errors, miscalculations, and problems discovered.
- January 7: Logan reveals Pemberton tested solution 05017 for Gordon.
- July: Expected ISO compliance (at least partial) for solution certification process and breath test program.

1 III. FACTS AND BACKGROUND

2 A. THE ROLE OF SIMULATOR SOLUTIONS

3 An individual commits the crime of driving while under the influence of alcohol if they
4 operate a motor vehicle: (1) with an alcohol concentration of 0.08 or higher as shown by
5 analysis of the person’s breath or blood made under RCW 46.61.506; and/or (2) while the
6 person is under the influence of or affected by intoxicating liquor or any drug. RCW
7 46.61.502(1).

8 1. THE USE OF BREATH TESTS IN PROSECUTIONS FOR DUI

9 In order to commit the crime of driving under the influence of alcohol, an individual must
10 have operated a motor vehicle while either having a BAC in excess of the per se limit or being
11 under the influence of or affect by alcohol. *State v. Shabel*, 95 Wn.App. 469, 473 (1999); RCW
12 46.61.502(1). In this context, breath test evidence utilized to establish BAC is undeniably
13 scientific in nature.³ *City of Fircrest v. Jensen*, 158 Wn.2d 384, 397-9 (2006); *Clark-Munoz*, 152
14 Wn.2d at 47-8. “The major danger of scientific evidence is its potential to mislead the jury; an
15 aura of scientific infallibility may shroud the evidence and thus lead the jury to accept it without
16 critical scrutiny.” *Reese v. Stroh*, 74 Wn.App. 550, 558 (1994)(quotation omitted); *U.S. v.*
17 *Addison*, 498 F.2d 741, 744 (D.C.Cir. 1974). “[G]iven the significant weight that a jury [in a
18 prosecution for DUI] is likely to accord this type of evidence, the potential for prejudice...is
19 high.” Cf., *State v. Jayne*, 24 P.3d 920, 927 (Or.App. 2001)(urinalysis test).

20 Although a breath test’s significance under the per se prong is evident, its practical effect
21 on a finding pursuant to the “under the influence of or affected by” prong may be no less

22 _____
23 ³ CANADIAN SOCIETY OF FORENSIC SCIENCE ALCOHOL TEST COMMITTEE, *Recommended Standards and procedures*
24 *of The Canadian Society of Forensic Science Alcohol Test Committee*, 36(3) SOC. FORENS. SCI. J. 101, 101
(2003)(“[T]he determination of blood alcohol concentrations (BAC) by means of breath tests is a scientific
process.”).

1 profound. It is well recognized that a positive breath alcohol test may create a strong “inference
2 of intoxication.” *South Dakota v. Neville*, 459 U.S. 553, 564, 103 S.Ct. 916 (1983). In a
3 prosecution on the “under the influence” prong, “evidence of intoxication is far stronger where
4 there is a positive blood (or breath) alcohol test.” *State v. Cohen*, 125 Wn.App. 220, 225 (2005).
5 In fact, most jurors “would conclude that a person with [a] reading [in excess of the per se limit]
6 was intoxicated when it was taken, in the absence of substantial evidence to the contrary.” *State*
7 *v. McElroy*, 568 So.2d 1016, 1016-7 (La. 1990)(Dennis, J., concurring).

8 2. SIMULATOR SOLUTIONS AS REFERENCE MATERIALS

9 A reference material is “a material or substance one or more properties of which are
10 sufficiently well established to be used for the calibration of an apparatus, the assessment of a
11 measurement method”⁴ and “quality control.”⁵ “Few are the scientist around the world who
12 have not heard of [reference materials] and the value they provide for validating a method or
13 calibrating an instrument.”⁶ This holds for the State Toxicology Lab and Breath Test Program
14 which prepare and certify simulator solutions as reference materials for use in breath testing.⁷
15 Specifically, each solution is used in conjunction with a “[s]imulator”, “a device which when
16 filled with a certified simulator solution...provides a vapor sample of *known* alcohol
17 concentration.” WAC 448-16-030(11)(emphasis added). In this context:⁸

18 [T]he simulator is a device that contains a glass jar and the top portion has a
19 thermometer, a motor and heating elements and ports. The purpose of it is to
20 simulate a breath alcohol sample. And it contains a solution of alcohol and water
21 that has been prepared. The solution is heated...And then it can produce a known
vapor alcohol concentration [.08] and it can be used as a calibrating device and as
a testing device when you are testing a breath test, any type of breath test

22 ⁴ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 53 (1993).

23 ⁵ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical Principles*
for Certification, ISO Guide 35:2006(E), 2 (2006).

24 ⁶ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Handbook 150*, 20 (2001).

⁷ Testimony of Dr. Logan, KC4, p.86.

⁸ Testimony of Rod Gullberg, KC2, p.36.

1 instrument. Simulators are typically the standard for testing the calibration. The
2 solutions are received from the state toxicology laboratory, and are used for
certification purposes, they prepare and test [the] solutions then provide [them] to
[the State Patrol].

3 *State v. Straka*, 116 Wn.2d 859, 872-3 (1991).

4 The regulations governing breath testing are intended to identify “individuals who are to
5 be examined for their competence to...maintain [breath testing] equipment and [also identify]
6 certain aspects of the operation of that equipment, necessary for reliable testing.” WAC 448-16-
7 010. Pursuant to these regulations, the state toxicologist has approved “protocols of procedures
8 and methods...required in the administration of the breath test program...These protocols will
9 be updated as necessary to maintain the quality of the breath test program.” WAC 448-16-070.
10 The protocols explicitly recognize that “an accurate and reliable breath test requires a good
11 instrument, program and protocol.”⁹ In particular, “the following are required for an accurate
12 and reliable breath test...an instrument in proper working order [which has been] properly
13 calibrated.”¹⁰

14 “‘Calibration’ is the process of standardizing the DataMaster instrument to a known
15 ethanol vapor concentration using a certified simulator solution. This allows for the quantitative
16 measurement of the ethanol concentration in a person’s breath.”¹¹ The Toxicologist has
17 promulgated a one page protocol detailing how a DataMaster is to be calibrated.¹² Pursuant to
18

19 ⁹ WASHINGTON STATE PATROL BREATH TEST SECTION, *Training Outline For DataMaster and PBT, Operator*
Basic, 27 (2004).

20 ¹⁰ WASHINGTON STATE PATROL BREATH TEST SECTION, *Training Outline For DataMaster and PBT, Operator*
Basic, 27 (2004). *See also*, Patrick Harding, *Methods for Breath Analysis*, in MEDICAL-LEGAL ASPECTS OF
21 ALCOHOL 185, 187 (James Garriott ed., 4th ed. 2003)(Accurate calibration of breath test instrumentation is critical in
the determination of the concentration of ethanol in breath) and *also*, KURT DUBOWSKI, *Alcohol Testing in the*
22 *Workplace* at 428 *therein*; *Recommended Standards and procedures of The Canadian Society of Forensic Science*
Alcohol Test Committee, 36(3) SOC. FORENS. SCI. J. 101, 113 (2003); NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY, *NIST Standard Reference Materials Program , New Ethanol-Water SRMs to Support Blood- and*
23 *Breath-Alcohol Testing* (September 2004) <<http://ts.nist.gov/ts/htdocs/230/232/publicities/2891-2899.htm> >.

24 ¹¹ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 23 (2007); WASHINGTON
STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 22 (2005).

¹² WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 23 (2007); WASHINGTON

1 the DataMaster Quality Assurance Procedure (“QAP”), every instrument is calibrated at least
2 once a year.¹³

3 As will be discussed below, every simulator solution is certified out to 4 decimal places.
4 For purposes of calibrating a DataMaster, however, the value of the solution is rounded to 3
5 decimal places. The DataMaster is then told this 3 figure value and the machine adjusts its
6 internal calibration (generating a “Cal factor”) based on a single reading.¹⁴ As explained by
7 Gullberg:¹⁵

8 part of calibration is to compute a cal value...it takes [] the value you tell it you’re
9 going to receive from this simulator, 082, for example. And the instrument reads
10 that result...And by taking what the known is, what you told it, divided by what it
11 reads, it computes a constant cal that will be multiplied by every subsequent
12 measurement performed by that instrument that takes into account the difference
13 that it saw at the time of calibration.

14 There are two primary sources of error¹⁶ in this process. The first is the loss of
15 information inherent in rounding the value of the solution to 3 decimal places. Unless the 4th
16 decimal place is 0, the DataMaster is being calibrated to a value that has error built into it.
17 Second “there’s other factors that influence calibration than just that number.”¹⁷ Just as any
18 other measurement process, a single point calibration will have systematic and random error
19 associated with it.¹⁸ Thus, calibration by itself tells us little about a DataMaster’s accuracy and
20 nothing about its precision.¹⁹

21 All of this is acceptable as long as you are able to assess the magnitude of the error

22 STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 22-3 (2005).

23 ¹³ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26 (2007); WASHINGTON
24 STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24, 26 (2005).

¹⁴ Testimony of Rod Gullberg, KC2, p.72-3, 75.

¹⁵ Testimony of Rod Gullberg, KC2, p.73.

¹⁶ Testimony of Rod Gullberg, KC2, p.73.

¹⁷ Testimony of Rod Gullberg, KC1, p.139-40.

¹⁸ Testimony of Rod Gullberg, KC1, p.72-4.

¹⁹ Testimony of Rod Gullberg, KC1, p.148; A1, p.109-10.

1 involved.²⁰ “The total assessment of [the] calibration process comes from evaluating a known
2 standard in replicate and estimating the bias from that.”²¹ This is easily done after calibration is
3 completed as the next step in the QAP process.

4 In order to ensure proper calibration and proper working order of a particular DataMaster,
5 following calibration the DataMaster is checked for accuracy and reliability as part of the annual
6 QAP.²² This is done by taking 10 measurements of each of four different simulator solutions
7 with different EVC levels.²³ The mean of these measurements, reported to 4 decimal places, is
8 then compared with the “true” 4 decimal place value of the particular simulator solution tested.
9 This “evaluates the analytical properties and bias of the instrument.”²⁴ The “four bias estimates
10 at four concentrations tell you the acceptability of your calibration process.”²⁵

11 The annual QAP “evaluates critical systems within the instrument to ensure their
12 compliance with strict predetermined criteria.”²⁶ Together, the annual calibration and multi-
13 level check of accuracy and reliability help make up these procedures which “ensure[] the
14 accuracy, precision and forensic acceptability of the DataMaster instrument for the purpose of
15 quantitatively measuring the alcohol concentration of a person’s breath.”²⁷ “The simulator test
16 is of particular significance in certification of the DataMaster machine.” *Straka*, 116 Wn.2d at
17 872. “Obviously, the simulator solution is key to simulator testing.”²⁸ *Id.* at 873.

18 Proper use of a simulator also “relates to accuracy of breath testing” when employed in

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20 ²⁰ Testimony of Rod Gullberg, KC2, p.74.

²¹ Testimony of Rod Gullberg, KC2, p.77.

²² WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2007); WASHINGTON
21 STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2005).

²³ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2007); WASHINGTON
22 STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2005).

²⁴ Testimony of Rod Gullberg, KC1, p.148, KC2, p.75; A1, p.92.

²⁵ Testimony of Rod Gullberg, KC1, p.148, KC2, p.75; A1, p.110.

²⁶ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24 (2007).

²⁷ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24 (2007); WASHINGTON
23 STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24 (2005).

²⁸ See also, R.Q. Thompson, *The Thermodynamics of Drunk Driving*, 74 J. CHEM. EDUC. 532-536 (1997).

1 the field. *Straka*, 116 Wn.2d at 870. Assuming a QAP has been performed, when considering a
2 particular test the “accuracy and proper working order of the instrument is best evaluated at the
3 time of the test in question.” *Id.* at 872 (Testimony of Sergeant Rod Gullberg). In this context,
4 “[t]he simulator test is of particular significance...in the machine’s self-testing of calibration
5 which it goes through each time a breath alcohol analysis is performed.” *Id.* To be precise, the
6 “[e]xternal standard test” performed at the time of a test requires “the use of a simulator
7 containing a certified simulator solution [that] provide[s] a *known* alcohol vapor concentration.”
8 WAC 448-16-030(8)(emphasis added).

9 The requirement of a *known* alcohol concentration is “very important to ensure
10 accuracy...in the field test.”²⁹ “The accuracy of breath alcohol measurements is determined by
11 the measurement of *known* standards...The measurement of *known* and traceable standards is
12 the basis for determining accuracy and thereby confidence in all analytical results.”³⁰ Thus, use
13 of the external standard test is “necessary to ensure accuracy, precision, and confidence in each
14 test.” WAC 448-16-050. And again, “[o]bviously, the simulator solution is key to simulator
15 testing.” *Straka* at 873.

16 The results of external standard tests in the field may also be utilized to estimate
17 DataMaster bias in the region of .080 BAC values.³¹ Unlike the determination of bias made at
18 the time of the QAP, however, this method includes other uncontrolled variables and so is
19 evaluating the breath test process as a whole and not necessarily the instrument itself.³² In this
20 context, a mean is determined from the measurement of the external “field simulator standard”
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22 _____
²⁹ Testimony of Rod Gullberg, A2, p.106; KC2, p.66-7.

23 ³⁰ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196 (1990)(emphasis added).

24 ³¹ Testimony of Rod Gullberg, KC2, p.107; A1, p.92.

³² Testimony of Rod Gullberg, KC2, p.214-7.

1 on the first 10 tests performed utilizing the solution.³³ That mean is then compared to the actual
2 value reported by the Lab for the solution to see if the process is reporting values that are lower
3 or higher than the correct one.³⁴ The percent difference is the bias correction that must be
4 applied to an individual's test.³⁵

5 3. SOLUTION CERTIFICATION

6 a. THE PROCESS

7 “The goal of any (reference material) certification is to tell the user the “right” answer
8 (i.e. the true concentration).”³⁶ Given the importance of simulator solutions with *known* alcohol
9 concentrations in ensuring and determining the accuracy and reliability of not only the State's
10 DataMasters in general but the results of individual breath tests themselves, the Toxicologist has
11 promulgated strict protocols for the preparation, certification and use of simulator solutions.³⁷
12 Preparation of the solution occurs when a toxicologist mixes a solution of ethanol and water to
13 actually create the solution. Prior to this, there is no simulator solution.

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20 ³³ Testimony of Rod Gullberg, KC2, p.64, 213-4.

21 ³⁴ Testimony of Rod Gullberg, KC2, p.64, 213.

22 ³⁵ Testimony of Rod Gullberg, KC2, p.64, 213.

23 ³⁶ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *Statistical Aspects of the Certification of Chemical
Batch SRMs, NIST Special Publication 260-125, 2* (1993).

24 ³⁷ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External
Standard Solution For Use With A Breath Test Instrument*, versions (2004) – (2007); WASHINGTON STATE
TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A
Breath Test Instrument*, versions (2004) – (2007); WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and
Procedure Manual*, 23, 26, 31 (2007); WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure
Manual*, 31-3 (2005).

1 Certification of a Field simulator solution requires the following:³⁸

- 2 1) An individual with a valid Blood Analyst Permit, authorized by the State
3 Toxicologist, analyzes five separate aliquots of the simulator solution, by
4 headspace gas chromatography.
- 5 2) Record the results of the testing in the solution certification database,
6 including the date and the results of the contemporary external control.
7 Enter the control lot number.
- 8 3) A minimum of three (3) analysts must certify the solution prior to its
9 certification.
- 10 4) The average of the results from all of the analysts are computed (rounded
11 to four decimal places). The standard deviation and relative standard
12 deviation (CV) on all results are computed.
- 13 5) The solution is acceptable for use and therefore certified if it meets the
14 following criteria:
 - 15 a. The average solution concentration is between 0.098 and
16 0.108g/100mL inclusive.³⁹
 - 17 b. The CV is 5% or less.

18 Certification of a QAP solution is the same except that the acceptable range for each
19 solution is:⁴⁰

- | | |
|--|---------------|
| 20 1) For a 0.04 vapor concentration: | 0.047 – 0.052 |
| 21 2) For a 0.08 vapor concentration (used for calibration): | 0.092 – 0.102 |
| 22 3) For a 0.10 vapor concentration: | 0.123 – 0.133 |
| 23 4) For a 0.15 vapor concentration: | 0.176 – 0.194 |

24 Note that the acceptable ranges for a simulator solution are given by the average alcohol
concentration (AC) of the solution. The AC is “the concentration of alcohol in the water that’s in
[the] solution that’s prepared by the toxicology laboratory, and that they test by the gas
chromatograph.”⁴¹ The equivalent vapor concentration (EVC) of the solution is the value
actually read by, and compared to results reported by, a DataMaster when the solution is heated

³⁸ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument* all versions (2004) – (2007).

³⁹ As an example of what is meant by “inclusive”, in certifying solution 06009 Katie Hoff properly included data equal to the boundary value of .108 as did Gullberg upon his reinspection.

⁴⁰ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument*, versions (2004) – (2007).

⁴¹ Testimony of Rod Gullberg, KC2, p.35.

1 to create a vapor.⁴² It is determined using equation 1:⁴³

$$2 \qquad \qquad \qquad EVC = AC/1.23 \qquad \qquad \qquad \text{Eq. 1}$$

3 The CV (coefficient of variation) is related to the standard deviation of the certification
4 measurements:⁴⁴

5 [Standard deviation is] a measure of variability. It's the way most commonly
6 used to quantify variation in repeated measurement results. If there's large
7 variation, large standard deviation. Small variation which is ideal, the better,
more precise, small standard deviation...[The CV is just] another way to quantify
variability [relative to] concentration.

8 The CV and Standard deviation are given by the following expressions:⁴⁵

$$9 \qquad \qquad \qquad SD = \sqrt{\sum(\bar{a} - a_i)^2/(n-1)} \qquad \qquad \qquad \text{Eq. 2}$$

$$10 \qquad \qquad \qquad CV = 100 \cdot SD/\bar{a} \qquad \qquad \qquad \text{Eq. 3}$$

11 where

12 \bar{a} = the mean of a set of measurements

13 a_i = the i^{th} individual measurement

14 n = the number of measurements

15 An individual analyst's data is not invalid simply because the values obtained fall outside
16 the prescribed range.⁴⁶ To the contrary, under these protocols, it is the average of all the
17 analysts' data that must satisfy these requirements, not the values obtained for an individual
18 analyst.⁴⁷ "The protocols are certainly violated if the results of an analyst are not included."⁴⁸

19 Other examples of violations of the solution certification protocols include: (1) mixing up
20 samples; (2) failing to run a control; (3) running the wrong control; (4) failing to include a blank;

21 ⁴² Testimony of Rod Gullberg, KC2, p.41

22 ⁴³ Testimony of Rod Gullberg, KC1, p.37-8; KC2, p.41; WASHINGTON STATE TOXICOLOGY LABORATORY,
23 *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test*
24 *Instrument* all versions (2004) – (2007); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The*
Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument, versions (2004) – (2007).

⁴⁴ Testimony of Rod Gullberg, KC2, p.37, 39-40.

⁴⁵ Rod Gullberg, *Useful Mathematical and Statistical Equations*, Course materials prepared for the Borkestein
Institute (2006).

⁴⁶ Testimony of Dr. Logan, KC4, p.26-7.

⁴⁷ Testimony of Dr. Logan, KC4, p.26; Testimony of Rod Gullberg, KC2, p.11-12.

⁴⁸ Testimony of Dr. Logan, KC5, p.24; S3, p.47.

1 or (5) failing to include the correct number of samples (aliquots) in a run.⁴⁹ Finally, it was never
2 intended nor permitted by the State Toxicologist that one toxicologist could delegate to another
3 the responsibility of testing a solution for them.⁵⁰ To the contrary, the Protocols explicitly
4 dictate that each analyst certifying a solution “analyzes five separate aliquots of the simulator
5 solution.”⁵¹

6 The primary difference between Field and QAP solutions is their intended purpose and
7 use. Each was intended to have a distinct use.⁵²

8 “The quality assurance simulator solutions...are used to verify the accuracy and precision
9 of the BAC Verifier DataMaster Quality Assurance Program of the Washington State Patrol
10 Breath Test Section.”⁵³ As a result, during calibration breath test technicians are required to
11 “[u]se a certified QAP ethanol solution from the State Toxicology Laboratory.”⁵⁴ Similarly,
12 during the 4 level check of calibration and bias that takes place during the QAP, technicians are
13 permitted to “[u]se only...simulators which contain a certified QAP ethanol solution prepared
14 and tested by the State Toxicology Laboratory.”⁵⁵ It was unequivocally the “understanding
15 and...expectation” of the State Toxicologist “that the breath test section was using the QAP

16 ⁴⁹ Testimony of Dr. Logan, KC5, p.99-100, 166-7; KC6, p.40-2; A1, p.167; WASHINGTON STATE TOXICOLOGY
17 LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath
18 Test Instrument* all versions (2004) – (2007); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The
19 Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument*, versions (2004) – (2007);
20 WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by
21 Headspace Gas Chromatography*, versions (2004) – (2006).

22 ⁵⁰ Testimony of Dr. Logan, KC4, p.105; KC5, p.30, 178-9; A1, p.140.

23 ⁵¹ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External
24 Standard Solution For Use With A Breath Test Instrument* all versions (2004) – (2007); WASHINGTON STATE
TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A
Breath Test Instrument*, versions (2004) – (2007).

⁵² Testimony of Dr. Logan, KC4, p.40, KC5, p.112-3.

⁵³ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance
Solutions For Use With A Breath Test Instrument*, 1 (2007 – all versions); WASHINGTON STATE TOXICOLOGY
LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test
Instrument*, 1 (2004).

⁵⁴ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 23 (2007). See also,
WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 22 (2005).

⁵⁵ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26 (2007). See
also, WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26 (2005).

1 solutions for QAP and calibration of the DataMaster.”⁵⁶

2 On the other hand, Field solutions are, and always have, been intended to be used solely
3 as Field Solutions.⁵⁷ Accordingly, in order to satisfy the external standard requirements at the
4 time of testing, Field Solutions are “formulated to provide a standard ethanol vapor concentration
5 when used in a breath alcohol simulator at 34 ± 0.2 degrees centigrade of between .072 and
6 .088.”⁵⁸ This purpose is made clear in the Toxicology Lab Protocols.⁵⁹ These protocols leave
7 no room for independent discretion on the matter.⁶⁰

8 The importance of adherence to a sound protocol for determining the concentration of the
9 simulator solution so that it can be *known* is well accepted:⁶¹

10 If the simulator is to be the known reference standard then it is fundamentally
11 important that the concentration of ethanol in the headspace vapor be
12 known...Fundamental to knowing the headspace concentration is knowing the
13 aqueous solution concentration of ethanol...The results of [the above] quantitative
14 measurements are the basis for assigning a reference or known value to the
15 simulator standard. The breath test instrument is...evaluated for accuracy against
16 this “known” reference value.

17 “Once a solution is certified, it may be provided to the BAC technicians for use with the
18 breath test instruments.”⁶² “Any deviations from the procedure must be documented in writing

16 ⁵⁶ Testimony of Dr. Logan, KC5, p.195.

17 ⁵⁷ Testimony of Dr. Logan, KC5, p.106.

18 ⁵⁸ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
19 *Standard Solution For Use With A Breath Test Instrument*, 1 (12/18/07); WASHINGTON STATE TOXICOLOGY
20 LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath*
21 *Test Instrument*, 1 (10/5/07); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of*
22 *.08 Simulator External Standard Solution For Use With A Breath Test Instrument*, 1 (8/8/07); WASHINGTON STATE
23 TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use*
24 *With A Breath Test Instrument*, 1 (3/26/07); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The*
Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument, 1 (2005);
WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
Standard Solution For Use With A Breath Test Instrument, 1 (2004).

⁵⁹ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
Standard Solution For Use With A Breath Test Instrument all versions (2004) – (2007).

⁶⁰ Testimony of Dr. Logan, KC5, p.211-2.

⁶¹ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196-7 (1990).

⁶² WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
Standard Solution For Use With A Breath Test Instrument (2005); WASHINGTON STATE TOXICOLOGY

1 and approved by the laboratory manager and/or the State Toxicologist.”⁶³

2 In addition to the simulator solution protocols, the protocols pertaining to Gas
3 Chromatography also govern the simulator solution certification process.⁶⁴ One requirement of
4 these protocols is that a control be included “at least every tenth injection [sample]”.⁶⁵ This
5 “ensure[s] the proper operation of the instrument and the reliability of the results obtained.”⁶⁶ If
6 a control is not included every tenth injection, the data must be rejected.⁶⁷

7 Another requirement of these protocols is that any data set that includes an ISTD area of
8 less than 900 must be discarded and rerun.⁶⁸ The reason is that such a low ISTD reading is an
9 indication that the gas chromatograph has a stuck injection needle.⁶⁹

10 These protocols also command that “[a]ny deviations from the procedure must be
11 documented in writing and approved by the laboratory manager and/or the State Toxicologist.”⁷⁰

12 If an analyst “violates [a] protocol, or [] made some identifiable error in conducting the
13 test, then it would be inappropriate to conclude or rely upon that data for any purpose,
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15

16 LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument* (2004).

17 ⁶³ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument* (2005); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument* (2004); Testimony of Dr. Logan, KC4, p.46-7.

18 ⁶⁴ Testimony of Dr. Logan, KC4, p.131-2; KC5, p. 165-7; 2007 ABFT Simulator Solution Certification Audit, p.3.

19 ⁶⁵ Testimony of Dr. Logan, KC5, p.65, 165-6; WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by Headspace Gas Chromatography*, versions (2004) – (2006).

20 ⁶⁶ Testimony of Dr. Logan, KC5, p.64-5.

21 ⁶⁷ Testimony of Dr. Logan, KC5, p.81-2.

22 ⁶⁸ Declaration of Brian Capron, KC Ex 126 (Solution 05009 - # 6); Declaration of Dr. Nuwayhid, KC Ex. 128 (Solution 07018 - # 33); Testimony of Dr. Logan, KC5, p. 169; Testimony of Dr. Nuwayhid, KC6, p.161-2, 165; WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by Headspace Gas Chromatography*, §k2, versions (2004) – (2006).

23 ⁶⁹ Declaration of Brian Capron, KC Ex 126 (Solution 05009 - # 6); Declaration of Dr. Nuwayhid, KC Ex. 128 (Solution 07018 - # 33); Testimony of Dr. Logan, KC5, p. 169; WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by Headspace Gas Chromatography*, §k2, versions (2004) – (2006).

24 ⁷⁰ WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by Headspace Gas Chromatography*, §k2, versions (2004) – (2006).

1 calculating the mean, using it in the simulator.”⁷¹

2 b. DOCUMENTATION

3 Simulator solution certification documentation has traditionally consisted of two
4 components. The first is a simulator solution worksheet. The worksheet is required to contain
5 the data obtained by each of the analysts including “the results of the contemporary external
6 control.”⁷² Each column of data represents the values obtained for the five aliquots tested by
7 each analyst as well as the value obtained for the external control. Each analyst enters his data
8 from a chromatogram generated by the chromatograph the solution was tested on. It presents a
9 problem if the analyst fails to include the external control value because then “there’s no external
10 validation of the analyst's results recorded.”⁷³

11 The worksheet also contains signature rows for each analyst to sign indicating that data
12 contained in the corresponding column of the spreadsheet is an accurate representation of the
13 data they collected. Next to an analyst’s signature, the date they tested the solution is entered. In
14 the upper right portion of the spreadsheet, the date the solution was originally created
15 (“prepared”) is listed as well as the statistical characteristics of the solution including its mean,
16 standard deviation and relative standard deviation. The statistics are intended to supply the
17 information necessary for an analyst to determine whether or not a solution complies with the
18 protocols. The protocol requires that the values entered by every analyst be included in the
19 calculation of these values.

20 The second component of the certification is a set of individual declarations for each
21

22 ⁷¹ Testimony of Dr. Logan, KC5, p.99.

23 ⁷² Testimony of Dr. Logan, KC4, p.43-44; WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The*
Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument all versions
(2004) – (2007); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality*
Assurance Solutions For Use With A Breath Test Instrument, versions (2004) – (2007).

24 ⁷³ Testimony of Dr. Logan, KC5, p.65-6.

1 analyst. Each declaration is signed and dated. For a field solution, each declaration states in
2 relevant part that:

3 I, [analyst's name], do certify under penalty of perjury that...The simulator
4 solution Lot Number [#], was prepared...on [date]. I examined and tested this
5 solution. It was found to conform to those standards established by the state
6 toxicologist for the certification of simulator solution. It should not be used for
7 evidential breath tests after [one year from the date of preparation].

8 For a QAP solution, each declaration states in relevant part that:

9 I, [analyst's name], do certify under penalty of perjury that...The quality
10 assurance solution Lot Number [#], was prepared...on [date]. I examined and
11 tested this solution. The mean concentration of the alcohol was [mean value]
12 grams per 100ml.

13 The certifications (worksheet + declarations) are posted on the Washington State Patrol
14 Discovery Website ("WebDMS"). They are intended to be relied upon by the public,
15 administrative hearing officers in proceedings pursuant to RCW 46.20.308, courts pursuant to
16 CrRLJ 6.13 and prosecutors in complying with discovery requirements.

17 Recently, the Toxicology Lab (the "Lab"), also began including the chromatograms
18 generated by each analyst during testing. In the upper left corner of the chromatogram the
19 instrument the solution was tested on is identified by instrument number. In the upper right
20 corner, the analyst who tested the solution is identified by name and the particular solution being
21 tested by batch number. Each analyst's data should be accompanied by seven chromatograms
22 containing the result of a test on either a control, a blank, or one of the five aliquots tested. The
23 data in the chromatograms must match the analyst's worksheet entries or the worksheet is
24 incorrect.

Proper documentation of certification results is more than just a book keeping matter.
"[I]f part of the data is missing or the batch identification information is missing from the
chromatograms, or the documentation for the fact that the control was conducted is not available

1 or is missing, these would all be a basis for excluding the data.”⁷⁴

2 4. BREATH TEST SECTION QAP PROTOCOLS

3 The Breath Test Section QAP Protocols were written by Rod Gullberg and approved by
4 Dr. Logan.⁷⁵ Prior to December 2007, they read that during the QAP of a DataMaster, including
5 its calibration, technicians must use a “certified ethanol solution.”⁷⁶ In approving the protocol,
6 Dr. Logan’s understanding and expectation was that by a “certified ethanol solution”, the
7 Protocol required a certified QAP solution.⁷⁷ Field Solutions were never intended to be used as
8 QAP Solutions.⁷⁸ To avoid any confusion that might result in the improper use of a Field
9 Solution during a QAP, Dr. Logan has since clarified the Breath Test Section Protocols which
10 now refer explicitly to “a certified QAP ethanol solution”.⁷⁹

11 In performing the QAP, a Breath Test Technician must insure that for each set of 10
12 measurements on the 4 solutions at different EVCs, a separate test for accuracy and precision is
13 satisfied.⁸⁰ Accuracy in this context is a measure of the instruments bias requiring the mean of
14 each set of measurements to be within $\pm 5\%$ of the reference value.⁸¹ The percent bias is given
15 by the following expression:⁸²

$$16 \quad A = [(\bar{u} - u_r) / u_r] \cdot 100 \quad \text{Eq. 4}$$
$$17 \quad \leq \pm 5\%$$

17 where

18 \bar{u} = mean of the 10 measurements rounded to 4 decimal places

18 u_r = EVC value reported by Tox Lab rounded to 4 decimal places

19 A 5% error means that an instrument which passes a QAP may still overestimate BAC

20
21 ⁷⁴ Testimony of Dr. Logan, KC5, p. 101-2.

21 ⁷⁵ Testimony of Dr. Logan, KC5, p.202.

22 ⁷⁶ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 22, 26 (2005).

22 ⁷⁷ Testimony of Dr. Logan, KC5, p.202.

23 ⁷⁸ Testimony of Dr. Logan, KC5, p.123, 202.

23 ⁷⁹ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 23, 26 (2007).

24 ⁸⁰ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2005).

24 ⁸¹ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2005).

24 ⁸² Testimony of Rod Gullberg, A1, p.93, 98.

1 such that an individual with a .077 would be over-reported as a .08.⁸³

2 Precision is determined by the CV which is defined in equation 3 except now substituting
3 \bar{u} and u_i . To satisfy the test for precision, the CV must be less than or equal to 3%.⁸⁴

4 QAPs are critical in the analysis of whether or not an instrument is accurate.⁸⁵ If a
5 DataMaster fails to satisfy either the test for accuracy or precision, it cannot be sent into the field
6 for use.⁸⁶

7 In performing its QAPs, the Breath Test Section is dependent upon the accuracy of the
8 solutions that are certified by the Tox Lab.⁸⁷ Even if a breath test technician performs the QAP
9 to the best of their ability, if the value certified for a solution is wrong the mistake will infect the
10 QAP process leading to incorrect results.⁸⁸ For example, “the physical act of calibrating the
11 instrument...requires that one have a simulator with a known solution.”⁸⁹ As result, use in the
12 QAP process of a solution that has not been properly certified results in an instrument that has
13 not been properly QAP’d.⁹⁰ In particular, use of solution with the incorrect EVC to calibrate a
14 DataMaster is a violation of the Breath Test Section Protocols.⁹¹

15 5. SIMULATOR SOLUTIONS IN PROSECUTIONS UTILIZING BREATH TESTS

16 The purpose of simulator solutions is “to ensure accuracy and precision of breath alcohol
17 measuring instruments” so that people aren’t deprived of their liberties or licenses
18 inappropriately.⁹² Simulator solutions are critical in prosecutions for DUI at several points. The
19 first is at the point of calibration. An accurate value for the QAP solution utilized is necessary if

20 ⁸³ Testimony of Rod Gullberg, A1, p.94.

21 ⁸⁴ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 26-7 (2005).

22 ⁸⁵ Testimony of Ken Denton, KC3, p.34.

23 ⁸⁶ Testimony of Rod Gullberg, KC2, p.105-6; Testimony of Ken Denton, KC3, p.103-4, 155-6.

24 ⁸⁷ Testimony of Ken Denton, KC3, p.154; Testimony of Rod Gullberg, KC1, p.27; KC2, p.165, 167-8.

⁸⁸ Testimony of Ken Denton, KC3, p.154.

⁸⁹ Testimony of Rod Gullberg, KC2, p.52.

⁹⁰ Testimony of Dr. Logan, KC5, p.82-3.

⁹¹ Testimony of Ken Denton, KC3, p.180-1.

⁹² Testimony of Rod Gullberg, A1, p.60.

1 we wish a DataMaster to report correct BAC values. For example, if during calibration we tell
2 the DataMaster that a solution with a .075 EVC is actually a .085 solution, then, barring other
3 errors, the machine will set it's calibration factor to report BACs higher than their true value by
4 approximately .01.

5 Unfortunately, there are a host of other factors, including those discussed above, that
6 introduce uncertainty into the calibration process that cannot be ignored.⁹³ Thus, while utilizing
7 an incorrect value for a QAP solution will likely result in biased measurements, simply knowing
8 the value reported for the calibration solution does not reveal whether the DataMaster is actually
9 returning incorrect BACs or how much the bias is.⁹⁴ In order to determine whether a DataMaster
10 is actually biased, one must "rely on the run of ten [readings] from the QAP or the run of ten
11 measurements in the field on a known field standard."⁹⁵

12 "Whenever the true value of the measured quantity is needed...bias can be a serious
13 problem."⁹⁶ The importance of identifying DataMaster bias "from known standards run in
14 replicate" and correcting for it lies in the fact that this gives the best estimate of the true value of
15 an individual's BAC results.⁹⁷ In this context, failure to report measurement bias may be
16 misleading as to the actual values represented by a set of BAC results.⁹⁸ In fact:⁹⁹

17 When publishing scientifically, when presenting scientific data, research results,
18 bias is an important consideration and should be included so another scientist
19 could come along and reproduce your results. So bias is very important in
20 interpreting scientific research [or the value...of a measurement].

21 Accordingly, where bias is present in the measurement of an individual's BAC, that bias

22 ⁹³ Testimony of Rod Gullberg, KC2, p.73-5.

⁹⁴ Testimony of Rod Gullberg, KC2, p.77.

⁹⁵ Testimony of Rod Gullberg, KC2, p.77, 107-8.

⁹⁶ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 4 (1993).

⁹⁷ Testimony of Rod Gullberg, KC2, p.68, 78, 102.

⁹⁸ Testimony of Rod Gullberg, KC2, p.78, 203.

⁹⁹ Testimony of Rod Gullberg, KC2, p.89, 203, 205.

1 must be added to or subtracted from the result before it is reported.¹⁰⁰

2 Whether relying on 10 QAP¹⁰¹ or Field¹⁰² measurements, the percent bias is simply the
3 difference between the mean of the simulator measurements and the EVC value reported by the
4 Lab for the solution, divided by the reported EVC, and then multiplied by a hundred.¹⁰³
5 Mathematically, this is the same expression as that used in equation 4:¹⁰⁴

$$6 \quad B\% = [(\bar{u} - u_r) / u_r] \cdot 100 \quad \text{Eq. 5}$$

7 where

\bar{u} = mean of the 10 measurements rounded to 4 decimal places

u_r = EVC value reported by Tox Lab rounded to 4 decimal places

8 Adjusting a particular result for bias utilizes these same parameters. Assuming a result
9 X, the corrected value for the measurement is given by:¹⁰⁵

$$10 \quad X_c = X \cdot (u_r / \bar{u}) \quad \text{Eq. 6}$$

11 The DataMaster truncates all test results to 3 decimal places¹⁰⁶ so that, when reporting a
12 corrected BAC value, the Toxicologist's regulations require the same truncation of the result of
13 this calculation.¹⁰⁷ WAC 448-16-060(1). Obviously, the correct value for the EVC of the
14 simulator solution, QAP or Field, is "critical" if one is to be able to determine bias.¹⁰⁸

15 Correcting for bias may impact a test in several ways. The first, and most obvious, is the
16 impact on a particular test result. Assume the certified EVC value reported by the Lab for a
17 solution is .0791 and that the mean of our 10 measurements is .0800. The percent bias of our

18 ¹⁰⁰ A.W. Jones, *Dealing with Uncertainty in Chemical Measurements*, 14(1) NEWSLETTER OF THE INT. ASSOC. FOR
19 CHEM. TESTING, 9 (2003); CANADIAN SOCIETY OF FORENSIC SCIENCE ALCOHOL TEST COMMITTEE, *Recommended
Standards and procedures of The Canadian Society of Forensic Science Alcohol Test Committee*, 36(3) SOC.
20 FORENS. SCI. J. 101, 120-1 (2003).

21 ¹⁰¹ Testimony of Rod Gullberg, KC2, p.70-2, 108; A1, p.91.

22 ¹⁰² Testimony of Rod Gullberg, KC2, p.108, 213-4; A1, p.91.

23 ¹⁰³ Testimony of Rod Gullberg, KC1, p.86-7; KC2, p.69.

24 ¹⁰⁴ Testimony of Rod Gullberg, KC1, p.86-7; KC2, p.69; KC Ex. 58 – hand written algorithm for determination of
percent bias with specific values; Rod Gullberg, *Useful Mathematical and Statistical Equations*, Course materials
prepared for the Borkenstein Institute (2006).

¹⁰⁵ Testimony of Rod Gullberg, KC1, p.85-7; KC2, p.69-70.

¹⁰⁶ Testimony of Rod Gullberg, A1, p.112.

¹⁰⁷ Testimony of Rod Gullberg, KC1, p.89-91; Testimony of Ken Denton, KC3, p.53; Testimony of Dr. Logan,
KC5, p.82; KC Ex. 58 – Example test value adjustment.

¹⁰⁸ Testimony of Rod Gullberg, KC2, p.66-7.

1 DataMaster is:¹⁰⁹

$$\begin{aligned} B\% &= [(.0800 - .0791)/.0791] \cdot 100 \\ &= 1.14\% \end{aligned}$$

3 Assuming that I submit to a breath test on this DataMaster with a resulting BAC of .100,
4 the true value corrected for bias is:¹¹⁰

$$\begin{aligned} X_c &= .100 \cdot (.0791 / .0800) \\ &= .098875 \\ &= .098 \text{ (truncated to three places)} \end{aligned}$$

7 It's critical to note that, because BAC results are always truncated to three decimal
8 places,¹¹¹ wherever a DataMaster is found to have a positive bias of .0001 or higher, the
9 corrected BAC of a particular test will always be reduced by at least .001.

10 To understand why, remember that whenever there is a positive bias, we will always
11 correct a particular result by multiplying it by a number that is less than 1. This reduces the
12 previously overestimated BAC value. Since our original BAC was given to three decimal
13 places, that means that the first three figures reported for the corrected value must be at least
14 .001 less than originally reported. Since the corrected value may have several more decimal
15 places, if we rounded it we might simply end up with the BAC originally reported. The
16 corrected value is not rounded, however, it is truncated. Truncation cuts out every number
17 beyond the third decimal place leaving just the first three figures. As a result, the corrected
18

23 ¹⁰⁹ Testimony of Rod Gullberg, KC1, p.95.

24 ¹¹⁰ Testimony of Rod Gullberg, KC1, p.88-91; KC Ex. 58 – Example test value adjustment.

¹¹¹ Testimony of Rod Gullberg, KC1, p.89-91; WAC 448-16-060(1).

1 BAC will always be less than that originally reported by at least .001.¹¹²

2 Because of this, even very small errors “may be critical” in any case with BAC values in
3 the region around any of the statutorily prescribed limits of .02, .04, .08 or .15.¹¹³

4 Instrument bias this small can also push the two results of an individual’s breath test
5 outside $\pm 10\%$ of their mean.¹¹⁴ This occurs when the original results are near the edges of the \pm
6 10% range and, because of bias, the original values must be corrected downward.¹¹⁵ Consider
7 the following example. An individual submits to a breath test with results of .139 and .114. The
8 mean of these two results is .1265 yielding a $\pm 10\%$ range of .114 – .139 so that the results are

9
10 _____
11 ¹¹² This is easily proven. Consider the following proof by contradiction:

12 1. Let:

13 A. X be the BAC reported by a DataMaster (reported to 3 decimal places);

14 B. Y_3 be the first 3 decimal places of the corrected BAC.

15 i. $Y_3 = X_c$ truncated to 3 decimal places.

16 C. Y_{4+} be all decimal places of the corrected BAC beyond the first 3.

17 i. $Y_3 Y_{4+} = X \cdot (u_r / \bar{u}) = X_c$ untruncated.

18 D. $\bar{u} - u_r \geq .0001$ (positive bias of .0001 or higher).

19 2. From this we know that:

20 A. $u_r / \bar{u} < 1$.

21 B. So that when our correction is expressed to all available decimal places:

22 i. $X > X \cdot (u_r / \bar{u})$ or, equivalently

23 ii. $X > Y_3 Y_{4+}$.

24 3. Our contention, wherever a DataMaster is found to have a positive bias of .0001 or higher the corrected BAC (truncated to 3 decimal places) of a test will always reduce the original value by at least .001, is true if $X > Y_3$.

1. Assume by way of contradiction that $X \leq Y_3$:

2. A. Case 1: $X < Y_3$

3. i. $Y_3 \leq Y_3 Y_{4+}$

4. ii. $X < Y_3 Y_{4+}$: Combining 4A and 4Ai.

5. iii. $X > Y_3 Y_{4+}$: From 2Bii.

6. iv. $\neg (X < Y_3)$: 4Aii and 4Aiii are contradictory.

7. B. Case 2: $X = Y_3$

8. i. $Y_3 \leq Y_3 Y_{4+}$

9. ii. $X \leq Y_3 Y_{4+}$: Combining 4B and 4Bi.

10. iii. $X > Y_3 Y_{4+}$: From 2Bii.

11. iv. $\neg (X = Y_3)$: 4Bii and 4Biii are contradictory.

12. C. $\neg (X \leq Y_3)$: Combining 4Aiv and 4Biv.

13. D. $\neg (X \leq Y_3) \rightarrow X > Y_3$: Law of the excluded middle.

14. 5. $X > Y_3$

15. ¹¹³ Testimony of Rod Gullberg, KC2, p.170-1.

16. ¹¹⁴ Testimony of Rod Gullberg, KC2, p.171.

17. ¹¹⁵ Testimony of Trooper Ken Denton, KC3, p.173-4, 177.

1 within the required values.¹¹⁶ WAC 448-16-060. Now assume that at the time of a QAP, the
2 mean value of 10 measurements returned by a DataMaster of a .0791 solution is .0800. This
3 results in a bias of only 1.14%.¹¹⁷ Nonetheless it changes the test values to .137 and .112.¹¹⁸
4 The mean of these two results is now .1245 yielding a $\pm 10\%$ range of .112 – .136 so that the
5 high result now falls outside the required range.¹¹⁹ WAC 448-16-060.

6 Significantly, this can occur regardless of how high or low an individual's BAC results
7 are or whether or not they are near the statutorily imposed .02, .04, .08 or .15 levels.¹²⁰

8 Bias affects the value reported by a DataMaster on an external standard test the same
9 way it does the values for an individual's BAC.¹²¹ Accordingly, when correcting for even very
10 small values of bias (.0001 or larger), an external test value originally falling just within the
11 statutorily mandated range of .072 – .088 may reasonably be expected to shift outside that range
12 rendering the test invalid.¹²² This can also happen regardless of how high or low an individual's
13 BAC results are or whether or not they are near the statutorily imposed .02, .04, .08 or .15
14 levels.¹²³

15 It is critical to note that in order to properly determine bias, we must start with an
16 accurate reference value for our simulator solution.¹²⁴ Everything assumes that that value has
17 been determined correctly.¹²⁵ If there is an error in that value, then our determination of bias

20 ¹¹⁶ Testimony of Rod Gullberg, KC1, p.95-6.

21 ¹¹⁷ Testimony of Rod Gullberg, KC1, p.94-5.

22 ¹¹⁸ Testimony of Rod Gullberg, KC1, p.95.

23 ¹¹⁹ Testimony of Rod Gullberg, KC1, p.96-7; Testimony of Dr. Logan, KC5, p.82-3.

24 ¹²⁰ Testimony of Rod Gullberg, KC1, p.97-8; KC2, p.171.

¹²¹ Testimony of Dr. Logan, KC4, p.50-1.

¹²² Testimony of Rod Gullberg, KC2, p.171; Testimony of Dr. Logan, KC4, p.51; Testimony of Trooper Denton, KC3, p.50, 52-4, 71-6; KC Ex. 77-80, 84, 85.

¹²³ Testimony of Rod Gullberg, KC2, p.171; Testimony of Ken Denton, KC3, p.52-4, 73-6; KC Ex. 78, 80 & 85.

¹²⁴ Testimony of Rod Gullberg, KC2, p.66-7.

¹²⁵ Testimony of Rod Gullberg, KC2, p.80.

1 will be wrong.¹²⁶

2 6. ACCURACY, PRECISION AND BIAS

3 Accuracy is defined as “the degree of agreement of a measured value with the true or
4 expected value of the quantity of interest.”¹²⁷ In evaluating the accuracy of a measuring
5 instrument, accuracy is determined by taking the mean of a series of measurements of a known
6 reference standard and then comparing that mean to the value for that standard. Whether or not
7 the instrument can be deemed accurate “is judged with respect to the use to be made of the
8 data.”¹²⁸ What might be deemed accurate in one set of circumstances may not be accurate in
9 another.¹²⁹ Where forensic science is involved, the acceptable level of accuracy is determined
10 by the “scientific [and] legal context” at issue and “the interpretation and application of the
11 results.”¹³⁰

12 Precision is concerned with the variability or scatter of the individual results of replicate
13 measurements.¹³¹ Measurements that are tightly grouped are considered precise while those
14 with greater scatter are less so. As was the case with accuracy, “[w]hat might be considered as
15 very precise for one purpose could be grossly imprecise for another.”¹³²

16 Although these are distinct characteristics, they work together in giving one confidence
17 in the measurements being made.

18 ¹²⁶ Testimony of Rod Gullberg, KC2, p.80-1; A1, p.115-6.

19 ¹²⁷ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 49 (1993).

20 ¹²⁸ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 2 (1993).

21 ¹²⁹ Testimony of Dr. Ashley Emery, KC7, p.139-41.

22 As an example, consider a watch that runs 2 minutes slow. If the purpose of my watch is to help me catch a
23 bus, this might be considered either accurate or inaccurate, depending on the bus schedules. If my bus runs every
24 five minutes, then even if I’m late for one bus, I only have to wait 3 minutes for the next one. The impact of the 2
minutes is low and so the watch is considered sufficiently accurate. On the other hand, if my bus runs only once
every 2 hours, then if I am 2 minutes late I’ll have to wait 1 hour 58 minutes for the next one. In this circumstance,
the inaccuracy of my watch has significant consequences and I judge it as not being very accurate. Accuracy is
always judged based on the purpose for which an instrument is being used and the impact of an error of a particular
magnitude.

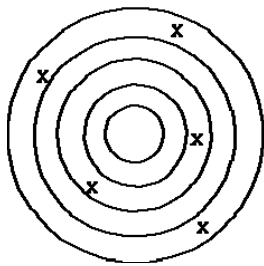
¹³⁰ Testimony of Rod Gullberg, KC2, p.84-5.

¹³¹ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 3 (1993).

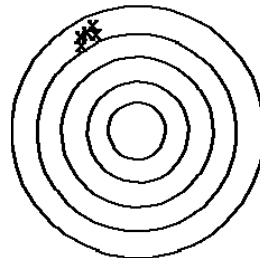
¹³² NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 3 (1993).

1 You want good repeatability [in] measurements. You want accuracy also. Both
2 are important concepts in measurement...[a set of measurements may be] neither
3 accurate or precise...[have] better precision, repeatability, but not [be]
4 accurate...[be] accurate, but the precision is not good... the goal [is] where you
5 have both accuracy and precision.¹³³

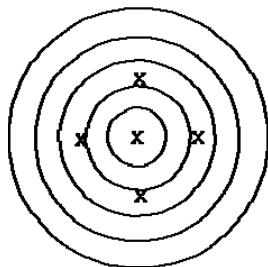
6 Neither Precise Nor Accurate



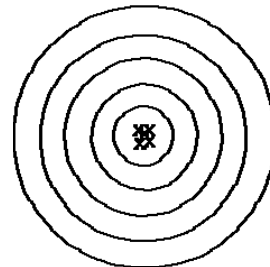
6 Precise, Not Accurate



11 Accurate, Not Precise



11 Precise and Accurate



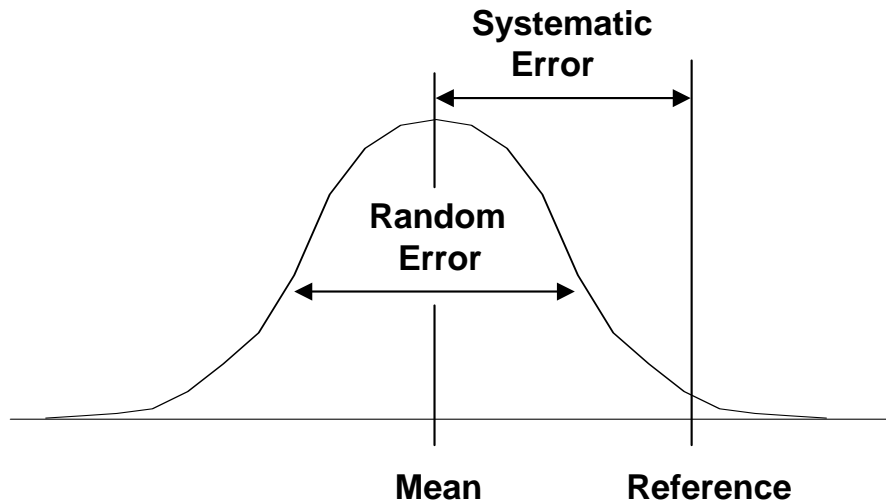
17 **Figure 1**

18
19
20 Bias, also known as systematic error, is a measure of accuracy. Systematic error/bias is
21 the tendency of an instrument to consistently underestimate or overestimate a true value by
22 a certain amount. Rarely will an instrument be completely bias free. Random error is the
23 uncontrollable fluctuation in measurement results under fixed conditions. Although random

24 ¹³³ Testimony of Rod Gullberg, KC2, p.45-6.

1 error can be minimized, it can never be eliminated. It determines the precision of a
2 measurement.

Measurement Error



12
13 **Figure 2**

14 There are recognized scientific procedures in place to minimize measurement error.¹³⁴
15 By following those scientific procedures, we get results that most closely approximate the
16 truth.¹³⁵

17 7. FORENSICALLY INDEFENSIBLE ERROR

18 As discussed above, during a QAP a DataMaster must be shown to be accurate within \pm
19 5% before it is permitted to be placed out in the field. This range accounts for the types of
20 variables one might reasonably expect to encounter during a properly performed measurement.
21 It does not, however, permit for, or apply to, unjustified departures from acceptable scientific
22

23
24 ¹³⁴ Testimony of Rod Gullberg, KC2, p.202.

¹³⁵ Testimony of Rod Gullberg, KC2, p.203.

1 practices.¹³⁶

2 Dr. Kurt Dubowski is well recognized as an authority in the field of breath alcohol
3 testing.¹³⁷ According to him, calibration errors of 1.3% are “forensically indefensible” when
4 due to knowable error.¹³⁸ This is completely unrelated to the \pm 5% in as much as it doesn’t
5 apply to the types of variables one might reasonably expect to encounter during a properly
6 performed calibration.¹³⁹ It is limited to an objectively incorrect and “fixed factor” that
7 “systemically change[s] the reference value for [a] solution” and that would be preventable
8 through proper scientific practice.¹⁴⁰ In particular, if reliable information is reasonably available
9 but not utilized, the resulting error is “forensically indefensible”.¹⁴¹ This is recognized by the
10 State Toxicologist and is applicable to breath testing in the State of Washington.¹⁴²

11 Significantly, this figure was not proposed as a minimum for forensic defensibility. To
12 the contrary, when considering systematic error Rod Gullberg has recognized that even “1
13 percent might be too much.”¹⁴³ And Trooper Ken Denton Demonstrated that systematic error as
14 small as .24% can render a test inadmissible regardless of an individual’s BAC.¹⁴⁴ “The
15 implications of forensic evidence generally requires that the highest possible standards for
16 quality control be employed so the evidence can be received by the court with appropriate
17 confidence.”¹⁴⁵ Accordingly, whether smaller errors are forensically defensible is dependent
18
19

20 ¹³⁶ Testimony of Dr. Logan, KC6, p.79-80.

21 ¹³⁷ Testimony of Rod Gullberg, KC1, p.113.

22 ¹³⁸ Dubowski, *Breath-Alcohol Simulators: Scientific Basis and Actual Performance*, 3 J. ANAL. TOXICOL. 181
(1979); Testimony of Dr. Logan, KC6, p.23, 25, 79-80.

23 ¹³⁹ Testimony of Rod Gullberg, KC1, p.114; KC2, p.139.

24 ¹⁴⁰ Testimony of Dr. Logan, KC6, p.23, 25; Testimony of Rod Gullberg, KC2, p.137.

¹⁴¹ Testimony of Dr. Logan, KC5, p.149; KC6, p.22-3; Testimony of Rod Gullberg, KC1, p.114.

¹⁴² Testimony of Dr. Logan, KC5, p.150; KC6, p.48.

¹⁴³ Testimony of Rod Gullberg, KC2, p.84.

¹⁴⁴ Testimony of Trooper Denton, KC3, p.54, 74, 76.

¹⁴⁵ Rod Gullberg, *Glossary of Terms*, Course materials prepared for the Borckenstein Institute (2005).

1 upon their “impact on [the] interpretation” of the results.¹⁴⁶ If a systematic error can deprive an
2 individual of their liberty, it is forensically significant.¹⁴⁷

3 B. PERJURY, CONSPIRACY, COVER-UPS AND FALSE SWEARING

4 1. PERJURY AND THE STATE’S ONGOING RELIANCE UPON IT

5 “A person is guilty of perjury in the second degree [a class C felony] if...with intent to
6 mislead a public servant in the performance of his or her duty, he or she makes a materially false
7 statement, which he or she knows to be false under an oath required or authorized by law.”
8 RCW 9A.72.030. “The matter sworn to need not be directly and immediately material. It is
9 sufficient if it be so connected with the fact directly in issue as to have a legitimate tendency to
10 prove or disprove such fact by giving weight or probability to the testimony of a witness
11 testifying thereto, or otherwise.” *In re Recall of Pearsall-Stipek*, 141 Wn.2d 756, 772
12 (2000)(quotation omitted). “[W]ritten statements shall be treated as if made under oath if...It is
13 a statement, declaration, verification, or certificate, made within or outside the state of
14 Washington, which is certified or declared to be true under penalty of perjury as provided in
15 RCW 9A.72.085.” RCW 9A.72.010(2).

16 a. ANN MARIE GORDON

17 When Ann Marie Gordon was promoted to Lab Manager in 2000, she notified Dr. Logan
18 that the previous Lab Manager had had other individuals test simulator solutions for him.¹⁴⁸
19 Logan informed Gordon that the practice must be discontinued so that from that moment
20 forward, she was aware that she was not permitted to have others certify simulator solutions for
21 her.¹⁴⁹

22
23 ¹⁴⁶ Testimony of Rod Gullberg, KC2, p.92.

¹⁴⁷ Testimony of Rod Gullberg, KC2, p.158-9.

¹⁴⁸ Testimony of Dr. Logan, KC4, p.105.

24 ¹⁴⁹ Testimony of Dr. Logan, KC4, p.105, 178-9.

1 In 2003, Ed Formoso began testing simulator solutions for Gordon contrary to Dr.
2 Logan's earlier command. By itself, the fact that Formoso performed these tests for Gordon was
3 a violation of the protocols. Given Logan's command, Gordon was aware that delegation of this
4 function was impermissible.

5 For each solution tested by Formoso, Gordon signed a certification worksheet indicating
6 that she tested the solution and a corresponding declaration "under penalty of perjury" stating
7 that she "examined and tested this solution." Clearly this statement was false and known to be so
8 by Gordon. The reason Gordon engaged in this practice was so that if necessary, she could
9 testify in Court that she had in fact tested the solution and that based on that found it to be
10 accurate and in full compliance with the protocols.¹⁵⁰

11 In this context, Gordon's declaration was aimed at deceiving a judge in the performance
12 of his or her official duties concerning an issue that is obviously material, i.e., whether or not she
13 personally tested a simulator solution. Similarly, if a defendant failed to request the testimony of
14 a toxicologist, Gordon's declaration was intended to be relied upon by a court under CrRLJ 6.13
15 in place of live testimony. Clearly she intended to mislead a "public servant in the performance
16 of his or her duty." There can be no doubt that Gordon's actions constitute perjury.

17 Even where Gordon's perjury was not directly considered by a Court, her deceit was
18 nonetheless relied upon by public servants in the performance of their duties. The measurements
19 Gordon never made were considered in the calculation of the statistics required to establish
20 compliance with the Toxicologist's protocols. In testifying, Toxicologists rely on these statistics
21 in their determination of whether a solution complies with the protocols. Technicians rely on the
22 statistics to establish, and to testify in Court to, the accuracy and reliability of an instrument
23 based both on its QAP and field external standard check. As breath test technician Beth

24 ¹⁵⁰ Testimony of Dr. Logan, KC5, p.179.

1 | McCourt¹⁵¹ testified, she relies completely on the information contained in the solution
2 | certifications. If they contain deceit, then she will be deceived. Thus, even where Gordon did
3 | not testify, her perjury was relied upon by other toxicologists and/or breath test technicians, both
4 | public servants, in the performance of their official duties.

5 | The subject of this deceit is obviously material going directly to the quantitative accuracy
6 | and reliability of a particular simulator solution which in turn helps to establish the accuracy and
7 | reliability of an individual's breath test.

8 | In the end, the conclusion is as simple and obvious as WSP Detective Sergeant Steven
9 | Penry found it in the report he submitted to prosecutors:¹⁵²

10 | Gordon signed the certification forms under penalty of perjury that SHE tested
11 | and analyzed the simulator solutions; therefore she violated the law by swearing
12 | under penalty of perjury that she personally performed simulator solution tests,
13 | when in fact she did not perform the tests herself.

14 | What is most alarming about these later circumstances is that the perjurious data Gordon
15 | never actually tested is still being included in the calculation of the certification statistics. Rod
16 | Gullberg has testified that all of his recalculations include Gordon's perjurious data. Thus,
17 | Gordon's perjury is still being relied upon by public servants, whether in the Toxicology Lab, the
18 | Breath Test Lab, when giving sworn testimony in court or by prosecutors in satisfying discovery
19 | requirements. As a result, Gordon's deceptions and lies still taint any breath test evidence sought
20 | to be introduced in any court in this state.

21 | Nor is this simply the case of a misdeed or violation of the protocols without effect. One
22 | of the solutions infected by Gordon's perjury is field solution 05008. Although this was a field
23 | solution, it was used by the Breath Test Section (BTS) to perform QAPs on at least 11 separate

24 | ¹⁵¹ Technician McCourt testified in Snohomish County District Court on October 31 in the matter of State v.
Michael Lang, C616184WSP (2007).

¹⁵² Investigative report of Detective Penry, p.9.

1 DataMasters.¹⁵³ Because the original value reported for the AC was a .1020,¹⁵⁴ putting it at the
2 outer boundary of acceptability for a QAP solution, it could reasonably be argued that the
3 solution was, technically speaking, both a Field and QAP solution. This changes, however, if we
4 remove the perjured data. When Gordon's data is removed, the new AC is .1022 which now lies
5 outside the acceptable range for a QAP solution.¹⁵⁵ That means that if Gordon's data is
6 removed, each of the 11 DataMasters referenced above were not properly QAP'd in accordance
7 with the protocols. The result: at least 1,679 tests statewide were performed by machines that
8 had not been properly QAP'd.¹⁵⁶

9 While this shows a direct impact of the inclusion of Gordon's perjured data, there is a
10 more subtle impact not considered by the State. Even though these activities involved perjury
11 and constituted a clear violation of the protocols, the State has claimed that there is no need to
12 remove the perjured data. The rationale offered is that the data was in fact collected by Ed
13 Formosso and data is data regardless of who collects it. The problem is that data is not
14 necessarily data regardless of who collects it.

15 One of the sources of variation in this process, and it may be a significant source, are
16 differences that exist between analysts.¹⁵⁷ That is, based on the way they perform these
17 measurements, different analysts may consistently come up with data exhibiting different
18 characteristics from one another.¹⁵⁸ This is known as interoperator variability. If an analyst with
19 a particular trait includes more of his test data in the worksheet than do other analysts, the final
20

21 ¹⁵³ 949185 - 4/26/05, 949207 - 5/17/05, 949226 - 6/1/05, 949231 - 4/12/05, 949252 - 6/1/05, 949261 - 6/1/05,
22 949265 - 5/4/05, 949272 - 4/12/05, 949274 - 4/26/05, 949275 - 5/17/05, 140002 - 5/26/05; See also, KC Ex. 23-24,
27-34, 36.

23 ¹⁵⁴ Testimony of Rod Gullberg, KC1, p.106.

24 ¹⁵⁵ Testimony of Rod Gullberg, KC1, p.107, 111-2; KC Ex. 58.

¹⁵⁶ Testimony of Ken Denton, KC3, p.58-69; KC Ex. 73 (1,976 x .85 = 1,679).

¹⁵⁷ Testimony of Dr. Pollisar, KC7, p.159, 239; Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL. TOXICOL. 196 (1990); Testimony of Rod Gullberg, KC2, p.153-4.

¹⁵⁸ Testimony of Dr. Pollisar, KC7, p.159.

1 result of computations performed with this data will be skewed proportionately.

2 This appears to be the case with Ed Formoso. Of the 35 certifications performed by
3 Formoso for himself and Gordon over the past 3 years, the combined CV of “their” data in 32 of
4 those certifications was less than that reported by all of the analysts together.¹⁵⁹ That’s 91% of
5 the time. This is statistically significant (i.e. not likely the result of chance) and an indication
6 that this particular aspect of Formoso’s data is having twice the impact (since he is testing for
7 two) of any other analyst’s data.¹⁶⁰ Solutions 06048 and 06049 exemplify this pattern clearly.
8 In these solutions, not only is the CV significantly lower than what it is for the group as a whole,
9 but the 10 values generated by Formoso in each are much higher than those found in the rest of
10 the group. These two solutions are clear examples of a possibly measurable interoperator
11 effect.¹⁶¹

12 b. MELISSA PEMBERTON

13 On June 3, 2005, Melissa Pemberton tested 5 aliquots for certification of solution 05017.
14 At that time she was approached by Ed Formoso. Formoso had prepared 5 other aliquots of the
15 same solution for testing. Pemberton was aware that he had done so.¹⁶² Formoso asked
16 Pemberton to run the aliquots for him and to credit it to Gordon on the gas chromatograph.¹⁶³
17 Pemberton did so, entering Gordon’s initials into the chromatograph as the testing analyst.¹⁶⁴
18 Gordon did not perform the test on solution 05017 despite the fact that the chromatograms and
19 certification for that solution indicate that she did.¹⁶⁵ Pemberton did not inform anyone of the
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22 ¹⁵⁹ Testimony of Dr. Emery, KC7, p.78-9; KC Ex. 146.

¹⁶⁰ Testimony of Dr. Emery, KC7, p.79, 81-2, 87; KC Ex. 146.

¹⁶¹ Testimony of Dr. Logan, KC5, p.204-8.

¹⁶² Testimony of Dr. Logan, KC4, p.159-60; KC Ex. 168, p.2.

¹⁶³ Testimony of Dr. Logan, KC4, p.159; KC Ex. 168, p.2.

¹⁶⁴ See chromatograms for solution 05017.

¹⁶⁵ Testimony of Dr. Logan, KC4, p.159-60.

1 incident.¹⁶⁶ Pemberton knew that the only reason this was being done was so that Gordon could
2 testify in Court that she had tested the solution.¹⁶⁷ She also knew that this would require Gordon
3 to sign the same worksheet and declaration regularly signed by all analysts. Pemberton is a
4 supervisor in the Lab.¹⁶⁸

5 On October 8, 2007, Pemberton was asked, while under oath in the Skagit County
6 District Court, whether she had “ever run data for Ann Marie Gordon.”¹⁶⁹ Despite the above
7 incident, she testified: “No I have not.”¹⁷⁰

8 2. CONSPIRACY TO COMMIT PERJURY

9 “A person is guilty of criminal conspiracy when, with intent that conduct constituting a
10 crime be performed, he or she agrees with one or more persons to engage in or cause the
11 performance of such conduct, and any one of them takes a substantial step in pursuance of such
12 agreement.” RCW 9A.28.040. In this context, “[a] formal agreement is not necessary.” *State v.*
13 *Israel*, 113 Wn.App. 243, 284 (2002). All that is required for an agreement to exist under the
14 statute is a “concert of action, all the parties working together understandingly, with a single
15 design for the accomplishment of a common purpose.” *State v. Barnes*, 85 Wn.App. 638, 664
16 (1997).

17 The agreement between Formoso and Gordon to engage in illicit conduct is demonstrated
18 by their actions. Formoso entered Gordon’s initials into the chromatographs when performing
19 the tests in question, entered the data into certification worksheets under Gordon’s name and
20 assumed that she was signing declarations under penalty of perjury that she had performed those

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¹⁶⁶ KC Ex. 168, p.5.

22 ¹⁶⁷ Testimony of Melissa Pemberton, S1, p.144-5; Testimony of Dr. Logan, KC5, p.179-80.

23 ¹⁶⁸ Testimony of Melissa Pemberton, S1, p.141.

24 ¹⁶⁹ Three of the primary steps of the testing process are: 1) the aliquotting out of the specific simulator standard that is to be tested; 2) placing the vials in the instrument that will be analyzing them; and 3) running the samples through the chromatograph. Testimony of Dr. Logan, KC5, p.40-1.

¹⁷⁰ Testimony of Melissa Pemberton, S1, p.148.

1 tests.¹⁷¹ Gordon received and signed every worksheet Formoso had entered data under her name
2 into and signed a declaration for each of those solutions stating that she had in fact performed
3 those tests. Clearly, Formoso was complicit in Gordon's continuing scheme of perjury and
4 through their "concert of action" they were both guilty of participating in a conspiracy to commit
5 perjury.

6 As Department of Licensing Hearing Officer Kathryn Koehler stated in her *DoL v.*
7 *Arntson* opinion:

8 After reviewing the entire record...I have no difficulty finding that the pattern of
9 conduct engaged in by Mr. Formoso and Ms. Gordon...was carried out with full
10 knowledge that false representations were being made, even under the penalty of
11 perjury...Whether one labels this conduct fraudulent misrepresentation and
perjury, or extremely deceitful and completely dishonest...The fact that the
Laboratory management engaged in such dishonest conduct in an appalling
reflection on the credibility of the laboratory.

12 Because of this conduct, Formoso has been placed on administrative leave and has been
13 neither asked, nor permitted, to sign off on any of the "corrected" certifications every other
14 analyst in the Lab has been required to.¹⁷²

15 3. THE COVER UP

16 On March 26, 2007, Logan received a message dated March 15, 2007 that had been left
17 anonymously on a WSP tip telephone for employees. This message stated, "Simulator solutions
18 are being falsified as far as the certification."¹⁷³ Deputy Chief Beckley asked Logan to look into
19 it.¹⁷⁴ In response, Logan passed the complaint along to Gordon to investigate.¹⁷⁵ Gordon told
20 Formoso that she had advised Logan that Formoso was conducting simulator solution testing for

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22 ¹⁷¹ Testimony of Ed Formoso, S2, p.148, 150, 156, 163. As a 32 year veteran of the Toxicology Lab and a
supervisor therein, Formoso was undeniably aware that execution of a declaration was expected of each person who
signed the certification worksheet.

23 ¹⁷² Testimony of Dr. Logan, KC4, p.20-1 Testimony of Rod Gullberg, KC1, p.26.

24 ¹⁷³ Testimony of Dr. Logan, KC4, p.106; Skagit, Ex. 30.

¹⁷⁴ Testimony of Dr. Logan, KC4, p.110.

¹⁷⁵ Testimony of Dr. Logan, KC4, p.109.

1 her during this conversation in late March 2007.¹⁷⁶ According to Formoso and Ann Lang, Logan
2 ordered Gordon to stop taking part in the certification of simulator solutions at this time.¹⁷⁷ And
3 in fact the last solution Gordon's name appears on is in March.¹⁷⁸

4 Gordon subsequently enlisted Formoso to assist in the investigation of the tip.¹⁷⁹ On
5 April 11, Gordon and Formoso reported that they had reviewed the simulator solution data and
6 protocols and found no problems needing correction.¹⁸⁰ No mention was made in the report that
7 Formoso had been testing solutions in Gordon's name for her.¹⁸¹ Logan admitted that Gordon
8 informed him orally within a day or two that Formoso was testing her solutions for her.¹⁸² At
9 that point, "it appeared to [Logan] that that was likely the basis for the complaint call."¹⁸³
10 Despite discovering what he believed to be the basis for the complaint and the fact that he clearly
11 viewed this as improper, Logan informed no one, not even Deputy Chief Beckley.¹⁸⁴ Nor did he
12 assign someone else, not associated with the misconduct, to go in and do a separate investigation
13 of what had occurred.¹⁸⁵ Instead, he let the Gordon/Formoso investigative memo and its
14 conclusions stand unrebutted.¹⁸⁶

15 Logan's failure to inform even Deputy Chief Beckley of the misconduct he believed to be
16 the basis of the complaint, allowing to stand an investigative conclusion that no misconduct was
17 discovered, is clear evidence of his intent to hide Gordon's and Formoso's actions.

18 Although Logan has indicated that at this point he did not know that Gordon was also
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20 ¹⁷⁶ Testimony of Ed Formoso, S2, p.159-60.

¹⁷⁷ Testimony of Ed Formoso, S2, p.160; Testimony of Dept. of Licensing Hearing Officer Ann Lang, S3, p.78.

21 ¹⁷⁸ Testimony of Dr. Logan, A1, p.127.

¹⁷⁹ Testimony of Dr. Logan, KC4, p.109.

22 ¹⁸⁰ Skagit, Ex. 31.

¹⁸¹ Testimony of Dr. Logan, KC4, p.110.

¹⁸² Testimony of Dr. Logan, S3, p.30; A1, p.125.

23 ¹⁸³ Testimony of Dr. Logan, A1, p.125; KC4, p.110.

¹⁸⁴ Testimony of Dr. Logan, KC4, p.111.

24 ¹⁸⁵ Testimony of Dr. Logan, KC4, p.110-1.

¹⁸⁶ Testimony of Dr. Logan, KC4, p.110-1.

1 signing false declarations, he admitted that he should have.¹⁸⁷ The Skagit County Court found
2 that “Dr. Logan’s statement that he did not consider that Ms. Gordon was signing Certifications
3 incredible.” In fact, it was not until after the second anonymous complaint in July, explicitly
4 revealing that Gordon was committing perjury and making the veiled threat of disclosing the
5 information to defense attorney Francisco Duarte, that anybody other than Logan was made
6 aware that misconduct had occurred.¹⁸⁸ Thus, if we assume Logan’s competence, it’s clear that,
7 whether it includes Gordon’s perjury or just the fact that Gordon was not testing solutions she
8 was claiming to be, Logan participated in a cover-up of Gordon’s and Formoso’s crimes.

9 4. FALSE SWEARING

10 “A person is guilty of false swearing [a gross misdemeanor] if he makes a false
11 statement, which he knows to be false, under an oath required or authorized by law.” RCW
12 9A.72.040. “[W]ritten statements shall be treated as if made under oath if...It is a statement,
13 declaration, verification, or certificate, made within or outside the state of Washington, which is
14 certified or declared to be true under penalty of perjury as provided in RCW 9A.72.085.” RCW
15 9A.72.010(2). “The primary function of requiring witnesses to be sworn is to add an additional
16 security for credibility by impressing upon them their duty to tell the truth, and to provide a basis
17 for a charge of perjury.” *Appeal of Nirk*, 30 Wn.App. 214, 218 (1981). Accordingly, the law
18 treats “[e]very unqualified statement of that which one does not know to be true [as being]
19 equivalent to a statement of that which he knows to be false.” RCW 9A.72.080.

20 Moreover, in signing certification worksheets or the accompanying declarations, not one
21 of the analysts ever went back to check to see if what they were signing was correct. Despite the
22 fact that they could have gone down the hall and checked a chromatogram or a worksheet, none

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¹⁸⁷ Testimony of Dr. Logan, S3, p.38.

24 ¹⁸⁸ Skagit, Ex. 32.

1 of them considered this to be important enough to do. Accordingly, every time a toxicologist
2 signed one of these certifications, they were again making unqualified statements of fact they did
3 not know to be true because none of them considered insuring the accuracy of these documents
4 important enough to take the time to do so. As a result, their certifications are full of errors in
5 the recording and reporting of data as well as dates of preparation and testing.

6 After a solution has been tested by each analyst and the worksheet completed, a
7 declaration is drawn up for each analyst by the office secretaries and put into each analyst's
8 mailbox. The declarations are authorized under CrRLJ 6.13 and are utilized in both criminal and
9 administrative proceedings. They are to be signed under penalty of perjury by each toxicologist
10 and then included as part of the solution certification. Despite the fact that these declarations are
11 intended to be used for evidentiary purposes and that each toxicologist is signing them under
12 penalty of perjury, prior to October 2007 none of the analyst's ever checked to ensure that the
13 information being sworn to was true.

14 QAP and Field solutions are slightly different. QAP declarations state that "[t]he mean
15 concentration of the alcohol was [#####] grams per 100ml." The value to be inserted is printed on
16 the worksheet for each solution. Unfortunately, because the analyst's never bother to even look
17 at the worksheet prior to signing these declarations, they have no idea whether what they are
18 signing is correct or not.

19 As an example, all of the declarations for QAP solutions 07002, 07003, 07004 and
20 07005, signed by Swenson, Long and Miranda, reported wrong mean concentrations for those
21 solutions.¹⁸⁹ For 07002, the problem was that instead of reporting the mean of .0473 out to four
22 decimal places as required, the secretaries recorded the mean as .04.¹⁹⁰ This is more than a
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24 ¹⁸⁹ Skagit Ex. 19-22, 24-27.

¹⁹⁰ Testimony of Estuardo Miranda, S2, p.138.

1 clerical error. If a defendant attempted to use this value in the determination of bias, the value
2 for the equivalent vapor concentration arrived at would have been wrong by a BAC of .0159.¹⁹¹

3 As for the other three solutions, not only did the secretaries use the same incorrect
4 number of significant digits, but they recorded the completely wrong quantity. Instead of
5 inputting the mean alcohol concentration as was being sworn to, they inserted the value for the
6 equivalent vapor concentration. That the value for the wrong physical quantity was being sworn
7 to would have been easily discovered had even one of the toxicologist's bothered to check. If
8 defendant's had relied upon these values to determine equivalent vapor concentrations in bias
9 calculations, the values arrived at would have been wrong by BACs of .0161, .0235 and .0323
10 respectively.

11 Each of these declarations is an example of a toxicologist swearing to an unqualified
12 statement of fact concerning that which he/she did not know to be true because he/she never
13 bothered to check to see if it was true. These declarations were posted for 5 months before the
14 error was detected.

15 More alarming are those declarations wherein the wrong value for the alcohol
16 concentration was sworn to but was never discovered by the Lab. Solutions 04040, 06042,
17 06044, 06045, 06046 and 06047, signed variously by Capron, Nuwayhid, Formoso, Piquette
18 (Noble) and Long all contained the incorrect value for the alcohol concentration of their
19 respective solutions for the same reasons as cited above.¹⁹² And again, any defendant relying
20 upon those values to determine equivalent vapor concentrations in bias calculations would have
21 arrived at the wrong answer because of these errors. Each of these declarations is an example of
22 a toxicologist swearing to an unqualified statement of fact concerning that which he/she did not
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24 ¹⁹¹ Equivalent Vapor Concentration = Average solution concentration/1.23.

¹⁹² Testimony of Rod Gullberg, KC1, p.51-9, 66-7, 69-70; Testimony of Dr. Logan, KC5, p.183.

1 know to be true because he/she never bothered to check to see if it was true.

2 When Nuwayhid and Piquette (Noble) were subsequently asked to resign their
3 declarations in October after Guulberg and Denton's review,¹⁹³ they both did so, again without
4 bothering to check to see if what they were swearing to was true.¹⁹⁴ Accordingly, each resigned
5 the declaration swearing to an unqualified statement of fact concerning that which he/she did not
6 know to be true because he/she never bothered to check to see if it was true. And, in fact, the
7 values are still wrong. And this would prevent any defendant relying upon these declarations
8 from being able to determine the bias, if any, on the DataMaster he/she was tested on.

9 That all of this was the result of carelessness, laziness or ignorance does not change the
10 fact that each of these toxicologists repeatedly made unqualified statements of fact concerning
11 things they did not know to be true. Unfortunately, all such statements are viewed by the law as
12 equivalent to statements that each one knew to be false. RCW 9A.72.080. And because they
13 were made under oath, each of these statements constituted the crime of false swearing.

14 C. SYSTEMIC CARELESSNESS WITHIN THE TOXICOLOGY LAB

15 Analysts certify between forty and sixty simulator solutions a year. Throughout the Lab,
16 as a matter of routine and practice, analysts have failed to perform these duties in a diligent and
17 careful manner. "One of [the] major deficiencies that [has been] identified was the fact that there
18 was no review process in place for the collective simulator solution gas chromatography
19 results."¹⁹⁵ As a result, the simulator solution certifications generated by the Lab are full of
20 errors in the recording and reporting of data as well as dates of preparation and testing. Setting
21 aside any software related issues, there have been at least 150 documented non-software related
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23 ¹⁹³ Testimony of Rod Gullberg, KC1, p.66; Testimony of Dr. Logan, KC5, p.183.

24 ¹⁹⁴ Testimony of Rod Gullberg, KC1, p. 56-9.

¹⁹⁵ Testimony of Dr. Logan, KC5, p.163.

1 Lab errors effecting 82 separate solutions.¹⁹⁶

2 1. MISRECORDING AND REPORTING OF DATA

3 After a solution has been tested, the results are printed out on a set of chromatograms.
4 Each analyst is to take his/her chromatograms and enter the results into a computer spread sheet
5 which will ultimately be printed and included in the solution certification as the worksheet. A
6 worksheet is typically not printed up until 1 to 3 weeks following the date of testing. Once
7 printed, a worksheet is passed from toxicologist to toxicologist to sign. Each is to sign the
8 worksheet indicating that the data associated with his/her name is correct. Despite the amount of
9 time elapsed and the number of solutions tested every year, however, prior to October 2007 none
10 of the analysts ever checked the worksheets against their chromatograms before signing them to
11 ensure that they were correct. As a result, there are at least 12 instances of misrecorded data
12 already identified effecting 11 different solutions.¹⁹⁷

13 This data provides the input for the calculations necessary to determine a solutions
14 concentration and compliance with the solution certification protocols. Because the resulting
15 EVC is crucial in the QAP process, ensuring that the data is correct is important for the breath
16 test Lab to be able to perform its duties.¹⁹⁸ In this context, even a single wrong data value can,
17 and has been found to, change the reported mean of a solution enough to negatively impact an
18 individual's liberty.¹⁹⁹ Thus, where this type of error is encountered, "if there is a change in the
19 reference value concentration...used to estimate bias...that's critical."²⁰⁰ Any of these errors, as
20 long as they result in a difference in the determination of bias of at least .0001, can have a

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22 ¹⁹⁶ Testimony of Dr. Logan, KC5, p.188-9; KC Ex. 132; Testimony of Rod Gullberg, KC2, p.162-3.

¹⁹⁷ KC Ex. 132; Solutions 02035, 05005, 05032, 05042, 06003, 06009, 06015, 06041, 07010, 07012 and 07013.

¹⁹⁸ Testimony of Rod Gullberg, KC2, p.165.

¹⁹⁹ Testimony of Rod Gullberg, KC2, p.162-4; Testimony of Dr. Logan, A1, p.169-70, 188-9; See, for example, solutions 02035, 05005, 05032, 06015 and 07013.

²⁰⁰ Testimony of Rod Gullberg, KC2, p.66-7.

1 significant impact: (1) when test results are near a .02, .04, .08 or .15; (2) with respect to whether
2 the mean of two test result is within $\pm 10\%$ of each other; or (3) whether the external standard
3 test falls within .072 - .088.

4 2. MIXING UP SOLUTIONS

5 Although entering a single wrong value into a spreadsheet can be problematic, even
6 greater difficulties are experienced when every value entered by a particular analyst into a
7 worksheet is wrong. On December 27, 2007, despite persistent claims that all significant
8 problems had been rectified, a major, and previously undiscovered, error was found.²⁰¹ It
9 concerned the certification for the solution used to calibrate and QAP one of the DataMaster's a
10 defendant's test had been performed on.²⁰² For QAP solution 02019, none of the data entered
11 into the certification by analyst Jayne Thatcher matched any of the chromatograms she
12 designated as belonging to that solution.²⁰³ The certification was completely invalid.²⁰⁴ This
13 rendered the QAP of any instrument performed with this solution completely invalid.²⁰⁵ At least
14 39²⁰⁶ DataMaster QAPs were performed utilizing this solution and approximately 7,928 tests
15 were performed statewide utilizing these DataMasters.²⁰⁷

16 Further examination revealed that the same was true for Field solution 02018. None of
17 the data entered by Jayne Thatcher into the certification for this solution matched any of the
18 chromatograms she designated as belonging to this solution either.²⁰⁸ As a result, the
19 certification for this solution was completely invalid as well.²⁰⁹ Approximately 2,018 tests were

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21 ²⁰¹ Testimony of Rod Gullberg, KC1, p.125.

²⁰² KC Ex. 66.

²⁰³ Testimony of Rod Gullberg, KC1, p.125-7; KC2, p.12; KC Ex. 90.

²⁰⁴ Testimony of Dr. Logan, KC5, p.99-100.

²⁰⁵ Testimony of Ken Denton, KC3, p.181; Testimony of Dr. Logan, KC5, p.82-3.

²⁰⁶ Testimony of Rod Gullberg, KC1, p.141; KC Ex. 54, 55.

²⁰⁷ Testimony of Trooper Denton, KC3, p.67-9; KC Ex. 75 (9,328 x .85 = 7,928).

²⁰⁸ Testimony of Rod Gullberg, KC1, p.127-8; KC Ex. 89.

²⁰⁹ Testimony of Dr. Logan, KC5, p.99-100.

1 performed statewide utilizing this solution as the external standard.²¹⁰

2 The defense bar could not have discovered these errors as none of the chromatograms for
3 either of these solutions had been posted on the WSP web site. All told, approximately 9,946
4 tests statewide can be linked to these solutions while the number of actual prosecutions based
5 thereon remains a mystery. As this “mistake” was not discovered until, and as a result of, the
6 King County hearings 5 ½ years after it occurred,²¹¹ none of the defendant’s whose tests fell into
7 this group had ever been notified of the problem.

8 Both of the solutions were tested by Jayne Thatcher on the same date, June 25, 2002, and
9 at approximately the same time, 5:30 in the evening and both were accompanied by instrument
10 calibration data.²¹² In entering the solution numbers into the chromatograph, Thatcher had to
11 choose whether to identify the solution as 02018, 02019 or some other solution.²¹³ When
12 entering the data from the chromatograms into the worksheets, she had to choose whether to
13 enter the data into the worksheets for solutions 02018, 02019 or some other solution.²¹⁴

14 Whichever of those two points her error occurred at, the result is that she mixed up these
15 two solutions. The data on the chromatograms labeled 02018 matched the data entered into the
16 certification for solution 02019 and vice versa. Either the chromatograms had been labeled
17 wrong²¹⁵ so that the ones for 02018 belonged to 02019 and vice versa or the data was entered
18 into the wrong worksheets so that the data recorded for 02018 belonged to 02019 and vice
19 versa.²¹⁶ Thatcher had mixed up the two solutions during one of these two stages.²¹⁷ This
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21 ²¹⁰ See KC Ex. 72. $2,375 \times .85 = 2,018$.

22 ²¹¹ Testimony of Jayne Thatcher, KC6, p.171.

23 ²¹² Testimony of Jayne Thatcher, KC6, p.176.

24 ²¹³ Testimony of Trooper Denton, KC, p.173.

²¹⁴ Testimony of Trooper Denton, KC, p.173.

²¹⁵ Testimony of Jayne Thatcher, KC6, p.177.

²¹⁶ Testimony of Rod Gullberg, KC2, p.169-70.

²¹⁷ Testimony of Rod Gullberg, KC1, p.129.

1 violates the protocols rendering the certification invalid.²¹⁸

2 As is the case with all solutions, after each of the analyst's data had been entered into the
3 computer, the certification worksheet for each of these solutions was printed up and passed
4 around to the analysts for their signature. Thatcher signed off on the certification indicating that
5 the values she had entered were correct.²¹⁹ Nonetheless, she admitted that she had never actually
6 checked her chromatograms to ensure that the values entered were correct before signing.²²⁰ In
7 fact, she has never bothered to check her chromatograms to ensure the data in the worksheet was
8 correct before signing them.²²¹ Had she taken two minutes to look at her chromatograms, her
9 error would have been quickly discovered and she could have gone back and retested each
10 solution to make sure the data she reported for each was correct. Alarming, despite such
11 carelessness Thatcher was later promoted to Quality Assurance Manager in 2005.

12 3. WRONG VAPOR CONCENTRATIONS

13 As discussed above, the EVC reported in the worksheet for a solution is the value relied
14 upon by breath test technicians during QAPs. It can be easily determined using a hand calculator
15 by dividing the AC by 1.23.²²²

17 ²¹⁸ Testimony of Dr. Logan, KC5, p.99-100.

18 The King County Prosecutor's Office argued that the invalidity of the certification was irrelevant. Instead, it
19 reasoned that the solution identification made on the chromatograms should be credited as the correct designations
20 and the data merely substituted into the corresponding certifications. There are a number of difficulties with this.
21 First, it assumes that although the two solutions were tested at the same time, under identical conditions nearly 5 ½
22 years ago, that Thatcher can somehow now be miraculously deemed to recall what occurred during the certification
of these two otherwise unremarkable solutions. Second, it overlooks the fact that AT THE TIME OF THE TESTS
the DataMasters had not been properly QAP'd so that the instruments could not have been properly calibrated and
the associated biases could not have been known or discovered. Third, even if the values for each were permitted to
be switched, so that the State could reach back in time and retroactively certify the solution and QAP a DataMaster
instrument AFTER THE FACT, the EVC for each solution is now different from what was previously reported. In
the case of QAP solution 02019, the concentration would go from a .0814 to a .0804. This means that every
instrument QAP'd by this solution could be expected to have a bias of .001 too high, resulting in a "forensically
indefensible error" of 1.21%. See Testimony of Rod Gullberg, KC1, p.135-6; KC Ex. 58.

23 ²¹⁹ Testimony of Jayne Thatcher, KC6, p.175.

24 ²²⁰ Testimony of Jayne Thatcher, KC6, p.175-6.

²²¹ Testimony of Jayne Thatcher, KC6, p.176.

²²² Testimony of Rod Gullberg, KC1, p.115.

1 In certifying QAP solution 06037, Akins, Johnston and Swenson signed off on a
2 worksheet reporting an EVC of .0400.²²³ The correct EVC for the solution, however, was
3 .0395.²²⁴ Apparently none of the toxicologists bothered to do the simple calculation required to
4 insure the correct result was reported. Anybody attempting to use this solution to determine the
5 bias on their DataMaster would have underestimated the bias by .0005. The resulting error in the
6 EVC value is 1.25%.²²⁵ This was clearly a knowable error easily prevented by simply checking
7 the value reported with a calculator before signing off on it. Moreover, proper forensic practice
8 dictates that “[b]efore results are reported, each batch of analytical data should be reviewed [and
9 that] At a minimum this review should include [checking the] validity of...calculations.”²²⁶
10 Without more, it’s obvious that this 1.25% error satisfies what would be deemed “forensically
11 indefensible.”²²⁷

12 But there is more. The actual error discussed by Dubowski had to do with the conversion
13 factor utilized to convert the value given for a solution’s AC to it’s EVC. Although the correct
14 value is 1.226, some in the breath test community had utilized a value of 1.21.²²⁸ Use of the
15 lower value always results in an overestimation of an individual’s BAC by 1.3%. This is what
16 Dubowski pronounced forensically indefensible. In Washington, the conversion factor utilized is
17 1.23. In order to arrive at the value reported in the certification for solution 06037, though, one
18 would have to use a conversion factor of 1.215.²²⁹ Hence, the relative values in question are
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21 ²²³ Skagit Ex. 41.

22 ²²⁴ Testimony of Rod Gullberg, KC1, p.38-9; KC2, p.56; Skagit Ex. 41.

23 ²²⁵ Testimony of Rod Gullberg, KC1, p.117.

24 ²²⁶ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 10.1 (2006).

²²⁷ Testimony of Rod Gullberg, KC1, p.117, 120.

²²⁸ Dubowski, *Breath-Alcohol Simulators: Scientific Basis and Actual Performance*, 3 J. ANAL. TOXICOL. 181 (1979)

²²⁹ Testimony of Rod Gullberg, KC1, p.116.

1 nearly identical to the ones considered by Dubowski.²³⁰ The result is that any DataMaster
2 QAPd using this solution, was QAP'd utilizing a solution having a forensically indefensible error
3 of 1.25%.²³¹

4 Throughout the State, at least 15 DataMasters were QAP'd utilizing solution 06037.²³²
5 Subsequently, approximately 2,691 tests were administered on those machines.²³³

6 4. INCLUSION OF BAD DATA

7 Where there is an identifiable physical malfunction of a chromatograph during the
8 certification process that calls into question the values of the data collected, the data should be
9 discarded and rerun.²³⁴ When certifying a solution, if a chromatograph returns an ISTD area of
10 less than 900, it is an indication that the gas chromatograph has a stuck injection needle.²³⁵
11 When this occurs, the "result isn't acceptable" and the data collected must be discarded and
12 rerun.²³⁶ Both Brian Capron and Dr. Nuwayhid relied on this in justifying the data they
13 discarded in the certifications of solutions 05009 and 07018.²³⁷ Unfortunately, because of the
14 lack of care exercised by the Lab's toxicologists, such faulty data is sometimes included in a
15 solutions certification.

16 As an example, consider Field solution 06043. The ISTD area of Capron's blank was

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18 ²³⁰ Testimony of Rod Gullberg, KC2, p.180; Testimony of Dr. Logan, KC6, p.24.

²³¹ Testimony of Rod Gullberg, KC1, p.120; KC2, p.180.

²³² Testimony of Rod Gullberg, KC1, p.119-20; KC Ex. 38-52.

²³³ KC Ex. 73 (3,167 x .85 = 2,691).

²³⁴ AMERICAN SOCIETY FOR TESTING AND MATERIALS, *Standard Practice for Dealing with Outlying Observations*,
19 *ASTM Designation E 178 – 02*, § 4 (2002).

²³⁵ KC Ex 126 (Declaration of Brian Capron – solution 05009 # 6); KC Ex. 128 (Declaration of Naziha Nuwayhid
20 – solution 07018 # 33); Testimony of Dr. Logan, KC5, p. 169; WASHINGTON STATE TOXICOLOGY LABORATORY,
21 *Analysis of Alcohols in Aqueous and Biological Samples by Headspace Gas Chromatography*, §k2, versions (2004)
– (2006).

²³⁶ Testimony of Dr. Nuwayhid, KC6, p.162; Declaration of Brian Capron, KC Ex 126 (Solution 05009 - # 6);
22 Declaration of Dr. Nuwayhid, KC Ex. 128 (Solution 07018 - # 33); Testimony of Dr. Logan, KC5, p. 169;
23 WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by*
Headspace Gas Chromatography, §k2, versions (2004) – (2006).

²³⁷ Testimony of Dr. Nuwayhid, KC6, p.161-2, 165; Declaration of Brian Capron, KC Ex 126 (Solution 05009 - #
24 6); Declaration of Dr. Nuwayhid, KC Ex. 128 (Solution 07018 - # 33).

1 852. This is clearly less than the minimum limit mandated by the protocols so that Capron's data
2 should have been rejected and rerun.²³⁸ Nonetheless, Capron entered the questionable data into
3 the Lab's computer for inclusion in the calculation of the solution's EVC. This calls into
4 question the value reported and precludes confidence in the determination of bias made using
5 this solution. This error was discovered during the King County hearing so that the approximate
6 number of tests performed utilizing this improperly certified solution as the external standard has
7 not yet been determined.

8 5. FAILURE TO TRAIN

9 Training in all aspects of the Breath Test program was "not detailed and [did] not cover
10 all functions performed."²³⁹ Some Toxicologists were not trained that testing of simulator
11 solutions followed different procedures than testing of other evidentiary samples resulting in
12 discarded data.²⁴⁰ Other toxicologists were trained to discard data if a single data point laid
13 outside the range for the mean value dictated by the simulator solution protocols contrary to, and
14 in violation of, actual protocol requirements.²⁴¹ In the wake of this scandal, Dr. Logan explained
15 to current Governor Gregoire that there was an "under-emphasis of the significance of the
16 [solution certification] procedure during staff training."²⁴² And although one would expect that
17 Logan as the State Toxicologist would have been responsible for ensuring proper training, he
18 explained that:²⁴³

19 I would not have known what training they were receiving, and I would not have
20 known how rigorous the training was. I would not have known the training they
21 were receiving was being reviewed or checked by one of the supervising staff in
the laboratory. Ultimately, as the laboratory director, I'm responsible for making

22 ²³⁸ Testimony of Dr. Nuwayhid, KC6, p.164-5.

²³⁹ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit, p.7).

²⁴⁰ KC Ex. 123 (Declaration of Amanda Black).

²⁴¹ Testimony of Lisa Piquette (Noble), KC6, p.107; Testimony of Brianna Peterson, KC6, p.115; Testimony of Dr. Nuwayhid, KC6, p.157-8; Testimony of Sarah Swenson, S2, p.65.

²⁴² KC Ex. 109, p.4.

²⁴³ Testimony of Dr. Logan, KC4, p.129.

1 sure everybody is adequately trained, but I rely on my staff to do that.

2 Dr. Logan's lack of oversight in ensuring training was so severe that it even impacted the
3 ability of breath test technicians to properly perform their duties. Given the lack of training, the
4 distinction between QAP and Field solutions was never made clear to breath test technicians. As
5 a result, they exhibited confusion regarding the use and purpose of these solutions so that field
6 solutions "had been used mistakenly for [QAP] verification checks", a practice that violates the
7 protocols²⁴⁴ Although several examples are found in the record, each of which violates the
8 protocols, one highlights the problem clearly.

9 Solution 06003 was certified as a Field solution. It could not have been certified as a
10 QAP solution because its AC, .1024, fell outside the required range for a QAP solution.²⁴⁵ This
11 was the original value reported for the solution so any confusion could not have been due to
12 subsequently discovered toxicology Lab problems. Nonetheless, it was used to QAP at least two
13 DataMasters.²⁴⁶ Because the AC fell outside the required range, though, the QAP of each
14 instrument violated the protocols. Thereafter, approximately 392 tests were performed on these
15 two DataMasters.²⁴⁷

16 6. SCIENCE FOR NONSCIENTISTS

17 a. COMPUTER PROGRAMMING ISSUES

18 When certifying simulator solutions, analysts' data is entered into a computer spread
19 sheet which subsequently calculates the mean AC and CV of a solution. The statistical
20 methodology utilized by the software was, until recently, completely determined and
21 implemented by IT staff person, Sandra DeStefano. Ms. DeStefano, however, is neither a
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23 ²⁴⁴ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit, p.4).

²⁴⁵ Testimony of Rod Gullberg, KC1, p.102, 105, 111-2.

²⁴⁶ KC Ex. 23 & 24.

²⁴⁷ KC Ex. 73 (462 x .85 = 392).

1 | statistician nor a scientist. Moreover, although she is neither a scientist nor statistician, not a
2 | single scientist checked her work to ensure that the methodology or its implementation was
3 | scientifically or mathematically sound. This resulted in two programming errors²⁴⁸ in the
4 | software that returned incorrect values for the quantities in question that went undetected for a
5 | period of at least two years.

6 | The first error involved the determination of a solution's CV.²⁴⁹ This error seems to have
7 | been present since the software was first implemented. When DeStefano originally wrote the
8 | program, she did it in such a manner that when calculating the precision, the software would
9 | never include the fourth data point from the fourth analyst in a worksheet.²⁵⁰ Although by itself
10 | this likely had little impact, it is an example of careless disregard for the quality of work being
11 | done by the Lab and a violation of the protocols which require every result of every analyst be
12 | included in the calculation of a solution's CV.

13 | The second error was far more serious.²⁵¹ As originally implemented, the spread sheet
14 | would accept data from 12 analysts and determine the necessary values for compliance with the
15 | protocols by using the data from all 12 analysts. Utilization of the data from each analyst was,
16 | and still is, a requirement of the protocols. In August 2005, however, DeStefano reprogrammed
17 | the software. It was altered with the intention of expanding the software's capabilities of
18 | analyzing data from 12 analysts to a maximum of 16. And again, when DeStefano completed the
19 | assignment, not a single scientist ever checked her work to ensure that it was functioning as
20 | required.

21 | Unfortunately, while the spreadsheet now accepted data from 16 analysts, it only
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23 | ²⁴⁸ Testimony of Rod Gullberg, KC2, p.188.

24 | ²⁴⁹ Testimony of Rod Gullberg, KC1, p.28.

²⁵⁰ Testimony of Dr. Logan, A1, p.157, 184; Testimony of Rod Gullberg, KC1, p.35-6.

²⁵¹ Testimony of Rod Gullberg, KC1, p.28, 30-32, 35.

1 included the data from the first 12 in its calculations. This is a clear violation of the protocols
2 which, again, requires all the data from each analyst to be utilized in the determination of a
3 solutions mean AC and CV. More importantly, it resulted in the wrong EVC being reported for
4 nearly every Field solution certified for a period of two years until it was finally discovered in
5 August 2007.²⁵² And tens of thousands of breath tests statewide were conducted using these
6 Field solutions as external standard solutions.

7 One of the difficulties this presents is that it prevents Courts from knowing whether the
8 external standard actually lay between .072 - .088 at the time of a Citizen's test. Several
9 examples of tests that were reported as having satisfied this criteria over the past couple of years
10 but, due to unaccounted for error (bias), actually fell outside of this range, were presented during
11 the King County hearings.²⁵³ The errors yielding this result were as small as .24%.²⁵⁴ And the
12 breath tests the necessary corrections would have rendered inadmissible involved BACs ranging
13 from .118 to .242.²⁵⁵ Whether the number of tests knocked outside of this range over the past
14 two years based on programming errors is in the tens, hundreds or thousands is unknown. But
15 such tests do exist.

16 Another difficulty presented by incorrect EVC values for Field solutions resulting from
17 programming errors is that it prevents Citizens from being able to determine the bias of the
18 DataMaster their test was administered on and, thus, the true value of their test results. Although
19 bias can be determined from an instrument's QAP, the most accurate determination can often be
20 made by examining the values returned for the Field solution during external standard checks
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22

23 ²⁵² Skagit Ex. 14.

²⁵³ Testimony of Trooper Denton, KC3, p.50, 52-4, 71-6; KC Ex. 77-80, 84, 85.

²⁵⁴ Testimony of Trooper Denton, KC3, p.54, 74, 76; KC Ex. 77, 79, 84.

²⁵⁵ Testimony of Trooper Denton, KC3, p.52, 74, 76; KC Ex. 78, 80, 85.

1 performed during tests administered in the field.²⁵⁶ The programming errors discussed above
2 prevented an accurate determination of the bias from being made.

3 The effect of these errors is not confined to the impact that may be made by a Field
4 solution used as a Field solution, however. Confusion caused by the lack of training discussed
5 above resulted in technicians sometimes using Field solutions as QAP solutions in violation of
6 the protocols. The problems that result are nicely demonstrated by Field solution 06048. It was
7 originally certified to have an AC of .1020.²⁵⁷ Technically speaking its use as a QAP solution
8 was in violation of the protocols. Because its AC lay on the boundary of acceptability for a QAP
9 solution, however, it can reasonably be argued that the solution could be used as both a field and
10 QAP solution.²⁵⁸ And in fact at least one DataMaster, 949126, was put through the QAP process
11 utilizing this solution.²⁵⁹

12 When programming errors were corrected for, the actual AC of this solution was found to
13 be .1027, well outside the range for a QAP solution dictated by the protocols.²⁶⁰ This means that
14 the DataMaster in question had not been properly QAP'd as it was performed in violation of the
15 Breath Test Section Protocols.²⁶¹ Thereafter, approximately 21 tests were performed utilizing
16 this DataMaster.²⁶²

17 b. SECRETARY SCIENTISTS

18 Lab secretaries were responsible for filling in dates of solution preparation and measured
19 concentration values in certification declarations. When they had done this, the declarations
20 were placed into toxicologists' mailboxes for signature. After retrieving these declarations from

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22 ²⁵⁶ Testimony of Rod Gullberg, KC2, p.64,77, 107-8, 213-4.

²⁵⁷ Testimony of Rod Gullberg, KC1, p.108; KC Ex. 26.

²⁵⁸ Testimony of Rod Gullberg, KC1, p.108.

²⁵⁹ Testimony of Rod Gullberg, KC1, p.111-2; KC Ex. 35.

²⁶⁰ Testimony of Rod Gullberg, KC1, p.108, 111-2; Testimony of Dr. Logan, KC5, p.122.

²⁶¹ See, Testimony of Ken Denton, KC3, p.181; Testimony of Dr. Logan, KC5, p.82-3.

²⁶² KC Ex. 73 (25 x .85 = 21).

1 their mailboxes, though, not a single toxicologist ever checked their worksheets or
2 chromatograms to ensure that the dates or values these secretaries recorded was accurate or even
3 scientifically reasonable. They simply signed them and turned them in for use in legal
4 proceedings. This made the Lab's secretaries responsible for ensuring that the measurement
5 process and data in certification declarations were scientifically sound. Because these secretaries
6 are not scientists, however, the declarations are peppered with claims of physical impossibilities,
7 instances of clairvoyance, values for wrong physical quantities and values for the correct
8 quantities but incorrectly reported (see below). The Citizens of the State of Washington were
9 left to rely on the "expertise" of these nonscientists (secretaries) to ensure the scientific validity
10 of claims being sworn to by scientists. The Citizen's of this State deserve and demand better.

11 7. SIGNING OFF ON THE WRONG DATA

12 Peterson and Capron both signed off on the others data having been their own in
13 certifying QAP solution 07019.²⁶³ That is, Capron signed off identifying the data collected by
14 Peterson to be his own while Peterson signed off that Capron's data was hers. Thus, both signed
15 off indicating that their testing yielded particular results that in fact it had not. The results were
16 those of somebody else and different from their own. Although this did not change any of the
17 values reported for the solution, this again evidences the systematic lack of care exercised by Lab
18 analysts in ensuring they are reporting data accurately. If either of these individual's had
19 bothered to check their chromatograms, they would have realized that the data they were signing
20 off on was not data that they had ever actually collected or observed.

21 8. PHYSICAL IMPOSSIBILITIES

22 Peterson, Capron and Knoy all certified that they had tested QAP solutions 07019, 07020,
23

24 ²⁶³ Skagit Ex. 45.

1 07021 and 07022 before those solutions had been prepared.²⁶⁴ Both Nuwayhid and Gruendell
2 did the same in certifying solution 06003. Because a solution is created during the process of
3 preparation, this means these analysts certified that they had all tested these solutions before they
4 existed. As common sense dictates, and every witness has acknowledged, this is a physical
5 impossibility and clearly absurd. In addition to these errors, there are at least 35 other instances,
6 involving 13 analysts and 30 solutions, where analysts certified to a wrong date of analysis.²⁶⁵

7 9. WASHINGTON'S CLAIRVOYANT TOXICOLOGISTS

8 In certifying QAP solutions 05043, 05044, 05045 and 05046, Knoy, Marshall, Gruendell,
9 Capron and Formoso all signed declarations stating that they had "examined and tested this
10 solution" which were dated prior to the date the solutions had actually been tested.²⁶⁶ Unless one
11 is clairvoyant, however, swearing to an event that has not yet occurred is also physically
12 impossible. Moreover, although none of the solutions had actually been tested by the date
13 indicated on the declarations, each declaration ironically enough contained the correct value for
14 the solutions mean concentration. This is an even greater feat of sorcery and clearly absurd. As
15 to this last point, Knoy admitted that he may be signing declarations where that number has not
16 yet been filled in when he signs.²⁶⁷

17 D. SYSTEMIC PATTERN AND ROUTINE OF SCIENTIFICALLY UNACCEPTABLE PRACTICES

18 The Toxicology Labs systemic, habitual and routine failure to adhere to even the most
19 basic and well accepted scientific principles in certifying simulator solutions removes the results
20 of any such certifications from the realm of scientific validity.

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22 ²⁶⁴ Skagit Ex. 7-10, 15-18.

23 ²⁶⁵ KC Ex. 132; See also, solution #: 05010, 05022, 05031, 05036, 05037, 05038, 05039, 05040, 05042, 06002,
06003, 06006, 06007, 06010, 06011, 06012, 06013, 06019, 06025, 06026, 06027, 06031, 06041, 06043, 07001,
07006, 07008, 07010, 07016.

24 ²⁶⁶ Skagit Ex. 11-13.

²⁶⁷ Testimony of Justin Knoy, S1, p.83.

1 they would in any other area of science.²⁷⁶ They are explicitly recognized by the American
2 Society of Crime Lab Directors (ASCLD),²⁷⁷ the Forensic Specialties Accreditation Board
3 (FSAB),²⁷⁸ the Society of Forensic Toxicologists (SOFT),²⁷⁹ the American Academy of Forensic
4 Scientists (AAFS)²⁸⁰ and the International Organization of Legal Metrology (OIML)²⁸¹.
5 Significantly, the ASCLD has announced that any non-ISO compliant accreditation programs it
6 has are going to be discontinued.²⁸² In this context, a “certified reference material...must be
7 certified by a method generally recognized by the scientific community.”²⁸³

8 “[T]he determination of blood alcohol concentrations (BAC) by means of breath tests is a
9 scientific process.”²⁸⁴ The ASCLD has determined that the foundation for Lab accreditation in
10 the calibration of breath test instruments, is “the applicable requirements of ISO/IEC 17025.”²⁸⁵
11 Such accreditation “ensure[s] you are applying standards and principles of practice that are
12 consistent with the norms within the forensic toxicology community...the things that give you
13 confidence in the results that the laboratory produces.”²⁸⁶ In particular, simulator solutions serve
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16 ²⁷⁶ Testimony of Dr. Ashley Emery, KC7, p.23-4, 29, 32, 37, 40; Ex. 142, 143 (The Crime Lab Report, *How the Profession Was Revolutionized By Standards And Controls* (2007)).

17 ²⁷⁷ AMERICAN SOCIETY OF CRIME LAB DIRECTORS, *Lab International Accreditation Program*, 3-4 (2006).

18 ²⁷⁸ FORENSIC SPECIALTIES ACCREDITATION BOARD, *Standards For Accrediting Forensic Specialty Certification Boards*, 1 (2004).

19 ²⁷⁹ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 9.3.1 (2006).

20 ²⁸⁰ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 9.3.1 (2006).

21 ²⁸¹ INTERNATIONAL ORGANIZATION OF LEGAL METROLOGY, *Breath Alcohol Analysers*, 2 (2006).

22 ²⁸² Testimony of Dr. Ashley Emery, KC7, p.24; Ex. 142, 143 (The Crime Lab Report, *How the Profession Was Revolutionized By Standards And Controls* (2007)).

23 ²⁸³ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 9.3.1 (2006).

24 ²⁸⁴ CANADIAN SOCIETY OF FORENSIC SCIENCE ALCOHOL TEST COMMITTEE, *Recommended Standards and procedures of The Canadian Society of Forensic Science Alcohol Test Committee*, 36(3) SOC. FORENS. SCI. J. 101, 101 (2003).

²⁸⁵ ASCLD/LAB NEWSLETTER, *Breath Alcohol Accreditation Program*, 5 (6/1/07); AMERICAN SOCIETY OF CRIME LAB DIRECTORS, *Lab International Accreditation Program*, 5-6 (2006); Testimony of Dr. Logan, KC4, p.67, 69, 84-5, 179.

²⁸⁶ Testimony of Dr. Logan, KC4, p.177-8.

1 as reference materials for QAP and breath testing purposes in Washington.²⁸⁷ It is widely
2 recognized that NIST standards apply to the utilization of simulator solutions as reference
3 materials in forensic breath testing.²⁸⁸

4 Significantly, in the wake of the current scandal, Dr. Logan assured Governor Gregoire
5 that the Lab’s problems were being addressed by assigning “an expert in ISO (International
6 Organization of Standards for Forensic Laboratories) standards” to oversee changes in the
7 solution certification process and that the State would seek ISO compliant ASCLD/LAB
8 International accreditation for the breath test program.²⁸⁹ Why? “Because it’s good standard
9 scientific practice.”²⁹⁰

10 Moreover, an audit of the solution certification process was performed by ASCLD/Lab
11 Consulting (see below) that was critical of the Lab’s practices.²⁹¹ Audits conducted by this
12 group are done according to ASCLD/Lab (ISO) standards.²⁹² In response to issues that were
13 identified as needing attention, Dr. Logan repeatedly indicated that the Lab would address them
14 by implementing “ASCLD/Lab ISO” compliant practices.²⁹³ And in each case, the Auditor’s
15 response was that “when [these measures have been] fully implemented, [the Lab] will attain
16 compliance” with the necessary requirements.²⁹⁴

17 It is beyond dispute that the standards promulgated by ISO, NIST and the ASTM are
18 recognized not only by the forensic breath testing community in general but by Dr. Logan

19 ²⁸⁷ Testimony of Dr. Logan, KC4, p.86; KC5, p.186.

20 ²⁸⁸ Fusco, *Basic Science of Evidential Breath Alcohol Testing*, 20 (2007); Patrick Harding, *Methods for Breath*
21 *Analysis*, in *MEDICAL-LEGAL ASPECTS OF ALCOHOL* 185, 188 (James Garriott ed., 4th ed. 2003); COMMITTEE ON
22 *ALCOHOL AND OTHER DRUGS, NATIONAL SAFETY COUNCIL, RECOMMENDATION OF THE SUBCOMMITTEE ON*
TECHNOLOGY, Appendix K, 137-8 (1996); Dubowski, *Quality Assurance in Breath-Alcohol Analysis*, 18 *J. ANAL.*
TOXICOL., 310 (1994); Dubowski, *TECHNOLOGY OF BREATH-ALCOHOL ANALYSIS* 42 (DHHS, National Institute on
Alcohol Abuse and Alcoholism Publication No. ADM 92-1728, 1992); Testimony of Dr. Logan, KC4, p.90.

23 ²⁸⁹ KC Ex. 109, p.5-6; Testimony of Dr. Logan, KC4, p.77-8.

²⁹⁰ Testimony of Dr. Logan, KC5, p.190.

²⁹¹ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit).

²⁹² Testimony of Dr. Logan, KC4, p.77-8.

²⁹³ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit – Grid Response, p.2-3, 10).

²⁹⁴ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit – Grid Response, p.1-3, 10).

1 himself, and that they are as fully applicable to the discipline of forensic breath testing as they
2 would be to any other scientific discipline.

3 2. FAITH IN BLACK BOXES

4 The Lab relies on software to calculate the statistics necessary to establish compliance
5 with the protocols, including the determination of the mean AC, for each solution as well as the
6 EVC of each. No one ever validated or checked the software being relied upon, or the
7 programming done within it by Destefano, to ensure that it was functioning as required. As a
8 result, three computer software/programming errors have plagued the Lab's determination of
9 solutions' EVC for at least two years.²⁹⁵

10 The first problem was inherent to the software (FileMaker Pro) itself.²⁹⁶ It is this
11 software bug that was responsible for calculating the wrong EVC for QAP solution 06037
12 discussed above, reporting the value as .0400 as opposed to the correct value of .0395.²⁹⁷ This is
13 not simply acceptable measurement error but, because it would have been easily detected by use
14 of a simple hand calculator,²⁹⁸ it's a knowable mistake of the sort referred to by Dubowski.²⁹⁹
15 "It was basically a calculation error in the File Pro program itself, that when the last two numbers
16 were rounding up, or if they would have rounded up, it reported it to a two-digit value."³⁰⁰
17 Because no one ever validated or checked the software being relied upon, though, this solution
18 was certified with a forensically indefensible error in the EVC of 1.25%.³⁰¹ Throughout the
19 State, at least 15 DataMasters were QAP'd utilizing solution 06037.³⁰² Thereafter,

21 ²⁹⁵ Testimony of Rod Gullberg, KC1, p.28, 30-32, 35-7, 39; KC2, p.189; Testimony of Dr. Logan, A1, p.157.

22 ²⁹⁶ Testimony of Rod Gullberg, KC2, p.189; Testimony of Dr. Logan, KC6, p.24.

23 ²⁹⁷ Testimony of Rod Gullberg, KC1, p.38-9, 115; Testimony of Trooper Denton, KC3, p.125.

24 ²⁹⁸ Testimony of Rod Gullberg, KC1, p.115.

²⁹⁹ Testimony of Dr. Logan, KC6, p.24.

³⁰⁰ Testimony of Trooper Denton, KC3, p.125.

³⁰¹ Testimony of Rod Gullberg, KC1, p.117, 120.

³⁰² Testimony of Rod Gullberg, KC1, p.119-20; KC Ex. 38-52.

1 approximately 2,691 tests were administered on those machines.³⁰³

2 In addition to this purely software related error, there are the two programmer errors
3 discussed above.³⁰⁴ Not only did those two programming errors result in clear violations of the
4 protocols, but also the wrong EVC being reported for nearly every Field solution certified for a
5 period of two years. This prevented Courts from knowing whether the external standard actually
6 lay between .072 - .088 at the time of a Citizen's test, Citizens from being able to determine the
7 bias of the DataMaster their test was administered on and thus the true value of their test results
8 and caused the breath test section to violate the protocols when conducting QAPs on
9 DataMasters.³⁰⁵

10 What is so confounding about this is that if anyone had run a simple check of the
11 computer's calculations, a task that would have taken less than an hour, both of these
12 programming errors could have been found and fixed. Because no one bothered to take this
13 simple step, though, tens of thousands of breath tests statewide were conducted either using these
14 Field solutions as external standard solutions or in reliance upon improper DataMaster QAPs.

15 Unfortunately, the thought of checking the software/programming never crossed
16 anyone's mind in the Lab. Jayne Thatcher, who was a QAP manager in the Lab at the time the
17 2005 changes were made to the software, gave the excuse that no one told her that such a check
18 had to be done. The Lab's complete ignorance that such a check might be desirable is evidenced
19 by the Investigative memo submitted by Gordon and Formoso in response to the first anonymous
20 complaint concerning the certification process. Despite having not checked a single calculation,

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³⁰³ KC Ex. 73 (3,167 x .85 = 2,691).

23 ³⁰⁴ Testimony of Dr. Logan, A1, p.157; Testimony of Rod Gullberg, KC1, p.28, 30-32, 35-6; KC2, p.188; Skagit Ex.
14.

24 ³⁰⁵ Testimony of Rod Gullberg, KC1, p.108, 111-2; Testimony of Dr. Logan, KC5, p.82-3, 122; Testimony of Ken
Denton, KC3, p.181; KC Ex. 26, 35.

1 they concluded that:³⁰⁶

2 this laboratory has prepared simulator solutions for over 20 years. No solution
3 has ever left this laboratory with an incorrect concentration.

4 Unfortunately for the State, in science, just because some authority says something's so
5 doesn't make it so. And in August 2007, while trying to minimize the negative impact of
6 Gordon's and Formoso's criminal misconduct on prosecutions around the State, the Lab
7 accidentally discovered that the software was not doing calculations the way the protocols
8 required it to.³⁰⁷

9 It is an accepted minimum requirement in the field of forensic science that "[a] quality
10 assurance program must be established" in every lab.³⁰⁸ In particular, valid forensic breath
11 testing requires adherence to a comprehensive quality assurance program that extends beyond
12 testing protocols and includes all aspects of the care and use of a breath test machine.³⁰⁹ Use of
13 certified simulator solutions in the standard calibration and multi-level checks of accuracy and
14 reliability that are performed during every annual Quality Assurance Procedure is one of the
15 safeguards that "ensures the accuracy, precision and forensic acceptability of the DataMaster
16 instrument for the purpose of quantitatively measuring the alcohol concentration of a person's
17 breath."³¹⁰

18 "Quality assurance encompasses all aspects of the analytical process [including] data
19
20

21 ³⁰⁶ Skagit Ex. 31.

22 ³⁰⁷ Testimony of Dr. Logan, S3, p.56-7.

23 ³⁰⁸ THE AMERICAN SOCIETY OF CRIME LABORATORY DIRECTORS, *Guidelines For Forensic Laboratory Management*
24 *Practices*, 4 (1994).

³⁰⁹ PATRICK HARDING, *Methods for Breath Analysis*, in *MEDICAL-LEGAL ASPECTS OF ALCOHOL* 185, 189 (James
Garriott ed., 4th ed. 2003); Kurt Dubowski, *Quality Assurance in Breath-Alcohol Analysis*, 18 *J. ANAL. TOXICOL.*
306-311(1994).

³¹⁰ WASHINGTON STATE PATROL BREATH TEST SECTION, *Training Outline For DataMaster and PBT, Operator*
Basic, 27 (2004).

1 review and reporting of results.”³¹¹ That means that all “[c]alculations and data transfers shall
2 be subject to appropriate checks in a systematic manner.”³¹² “Before results are reported, each
3 batch of analytical data should be reviewed by scientific personnel...At a minimum this review
4 should include [checking the] validity of...calculations.”³¹³ In particular, “[c]alculations and
5 data transfers which do not form part of a validated electronic process should be checked,
6 preferably by a second person.”³¹⁴ The failure to check one’s calculations when reporting
7 results does not satisfy the minimum applicable standards within the scientific community.³¹⁵

8 Rod Gullberg made the importance of accurate calculations in the solution certification
9 context clear explaining that:³¹⁶

10 if there is a change in the reference value concentration which I used to estimate
11 bias, then I need to know that. And if that's been incorrectly computed...I need to
12 know that because I'm relying on the reference value from that gas chromatograph
13 to identify this simulator solution concentration, which this DataMaster
14 instrument measured, that I'm using to estimate the bias for this person's breath
15 who is tested on that instrument. From that sense, that's critical...I do need to
16 know the true -- the reference value from the toxicology lab. I want to be
17 confident that's correct, not calculation errors...so that I know the reference value
18 of this simulator solution which this instrument, DataMaster, has measured, which
19 has also measured some defendant’s breath test.

20 “Where computers...are used for the...processing, evaluation, recording, reporting,
21 storage or retrieval of calibration or test data, the reference material producer shall ensure
22 that...computer software is validated wherever possible, especially when developed in-house,
23
24

20 ³¹¹ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 9.1.1 (2006).

21 ³¹² INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Testing and Calibration Laboratories*, ISO/IEC 17025:1999(E) § 5.4.7.1 (1999); INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Reference Material Producers*, ISO Guide 34:2000(E) § 5.13.1 (2000); Testimony of Dr. Ashley Emery, KC7, p.45-6.

22 ³¹³ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 10.1 (2006).

23 ³¹⁴ INTERNATIONAL LABORATORY ACCREDITATION CORPORATION, *Guidelines for Forensic Science Laboratories*, ILAC-G19:2002 § 4.12.2.1(e) (2002).

24 ³¹⁵ Testimony of Dr. Ashley Emery, KC7, p.46.

³¹⁶ Testimony of Rod Gullberg, KC2, p.66-7.

1 and is adequate for use.”³¹⁷ In this context, software validation testing is an ongoing process to
2 ensure that application software is operating as intended.³¹⁸ Thus, periodic checks of
3 calculations done by software are required to insure that the software is performing as
4 intended.³¹⁹

5 In particular, “[p]rocedures for validation after modifications are necessary.”³²⁰ Even
6 where “off-the-shelf software (e.g. word-processing, database and statistical programs) in
7 general use” are being utilized “laboratory software configuration/modifications should be
8 validated.”³²¹ “Change impact analysis (examination of impact of changes) is a key task to
9 ensure appropriate tests after modifications.”³²² This is generally accepted throughout the
10 scientific community.³²³ In this context, it is well known that many problems encountered in
11 software use in the lab can arise from changes to data input criteria so that data input and
12 handling requirements must be carefully checked after such changes are made.³²⁴

14 ³¹⁷ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Reference*
15 *Material Producers*, ISO Guide 34:2000(E) § 5.13.2(a) (2000); INTERNATIONAL ORGANIZATION FOR
16 STANDARDIZATION, *General Requirements for the Competence of Testing and Calibration Laboratories*, ISO/IEC
17025:1999(E) § 5.4.7.2(a) (1999); INTERNATIONAL LABORATORY ACCREDITATION CORPORATION, *Guidelines for*
18 *the Requirements for the Competence of Reference Material Producers*, ILAC-G12:2000 § 3.13.3(a) (2000),
19 NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Handbook 150* §5.4.7.1(a) (2001); Testimony of Dr.
20 Ashley Emery, KC7, p.47.

17 ³¹⁸ David Brodish, *Computer Validation in Toxicology: Historical Review for FDA and EPA Good Laboratory*
18 *Practice*, 6 QUALITY ASSURANCE 185, 194 (1999); Testimony of Dr. Ashley Emery, KC7, p.47.

18 ³¹⁹ Testimony of Katie Hof, S1, p.38-9, 47; David Brodish, *Computer Validation in Toxicology: Historical Review*
19 *for FDA and EPA Good Laboratory Practice*, 6 QUALITY ASSURANCE 185, 194 (1999).

19 ³²⁰ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST), *Reference Data: Software Fault and Failure*
20 *Characteristics – Fault Handbook – Quality Assurance*
21 <<http://hissa.ncsl.nist.gov/effProject/handbook/failure/QA.htm>> (last visited 10/03/07).

20 ³²¹ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Testing*
21 *and Calibration Laboratories*, ISO/IEC 17025:1999(E) Note to § 5.4.7.2 (1999); NATIONAL INSTITUTE OF
22 STANDARDS AND TECHNOLOGY, *NIST Handbook 150* §5.4.7.1 (2001); Testimony of Dr. Ashley Emery, KC7, p.47-
23 9.

22 ³²² NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST), *Reference Data: Software Fault and Failure*
23 *Characteristics – Fault Handbook – Quality Assurance*
24 <<http://hissa.ncsl.nist.gov/effProject/handbook/failure/QA.htm>> (last visited 10/03/07).

23 ³²³ Tr.S1, p.38-9.

24 ³²⁴ Tr.S1, p.38-9, 44; NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST), *Reference Data: Software*
25 *Fault and Failure Characteristics – Fault Handbook – Data*
26 <<http://hissa.ncsl.nist.gov/effProject/handbook/failure/Data.htm>> (last visited 10/03/07), - *Change Impact*

1 Had the Lab adhered to these universally recognized scientific requirements, the
2 consequences flowing from the three aforementioned software/programming errors could have
3 been completely avoided. With respect to the software error lurking in FileMaker Pro, simply
4 dividing the AC in each certification as it was signed by 1.23, using a hand calculator, would
5 have revealed the problem. And the performance of either a routine QA check of the software or
6 one directly aimed at testing the August 2005 changes, would have revealed the programming
7 errors.³²⁵ According to Logan himself, “the appropriate level of checking was not done when
8 [the Lab] made those changes in 2005.”³²⁶ Every current toxicologist who addressed the issue
9 indicated that they now also realized that such checks should have been done.³²⁷

10 Scientifically acceptable reliance on computer calculations requires, at a minimum,
11 periodic QA checks of software calculations and targeted checks after any changes are made to
12 such software.³²⁸ This is neither laborious nor expensive. The Citizens of Washington have the
13 right to expect at least this level of effort from those whose actions may affect their liberties.

14 3. OUTLIERS AND THE DISCARDING OF VALID DATA

15 It is well accepted that where an “experimenter is clearly aware that a gross deviation
16 from prescribed experimental procedure has taken place, the resultant observation should be
17 discarded.”³²⁹ Rejecting data for this reason has been referred to as rejection for “assignable
18 causes.”³³⁰ Examples would include where something has gone wrong in sampling or there is

20 <<http://hissa.ncsl.nist.gov/effProject/handbook/failure/Impact.htm>> (last visited 10/03/07), *Other*
21 <<http://hissa.ncsl.nist.gov/effProject/handbook/failure/Other.htm>> (last visited 10/03/07).

22 ³²⁵ Testimony of Katie Hof, S1, p.43.

23 ³²⁶ Testimony of Dr. Logan, S3, p.57.

24 ³²⁷ Testimony of Brian Capron, S1, p.130; Testimony of Justin Knoy, S1, p.88; Testimony of Jayne Thatcher, S2,
p.47; Testimony of Melissa Pemberton, S1, p.160.

³²⁸ Testimony of Katie Hof, S1, p.38-9, 43-4, 47.

³²⁹ AMERICAN SOCIETY FOR TESTING AND MATERIALS, *Standard Practice for Dealing with Outlying Observations*,
ASTM Designation E 178 – 02, § 4 (2002); Testimony of Dr. Ashley Emery, KC7, p.50.

³³⁰ Testimony of Dr. Nayak Polissar, KC7, p.181.

1 some difficulty in the operation of a machine used to make a measurement.³³¹ If data is rejected
2 for such a cause, however, the reason must be documented.³³²

3 During the solution certification process, violation of the protocols while testing is an
4 assignable cause that provides a valid basis for excluding data.³³³ As is the case in general, it is
5 necessary to document the reason the data has been rejected.³³⁴ In this context, however, it is
6 critical to remember that the protocols are not violated simply because a single analyst's data
7 falls outside the range for the certification mean.³³⁵ Only the final mean based on all of the
8 analysts' data must fall within this range.³³⁶

9 Where no assignable cause is identified, the temptation to discard what appears to be
10 anomalous data "must be resisted strongly."³³⁷ If the urge is not resisted, one runs the risk of
11 never finding anything unanticipated.³³⁸ This is simply common sense. In the context of
12 solution certification, if all data falling outside the required mean range were discarded for no
13 reason other than that it fell outside that range, there would be no reason to engage in the
14 certification process at all. Our mean would always fall within the accepted range because the
15 only measurements we chose to consider would themselves always lie within that range.

16 The natural uncertainty attendant to any measurement necessarily leads to scientifically
17 valid measurements that deviate more than others from the mean.³³⁹ "An outlying observation
18 may be merely an extreme manifestation of the random variability inherent in the data. If this is

19 ³³¹ Testimony of Dr. Nayak Polissar, KC7, p.182-3.

20 ³³² Testimony of Dr. Ashley Emery, KC7, p.50.

21 ³³³ Testimony of Dr. Logan, KC5, p.99-100.

22 ³³⁴ WASHINGTON STATE TOXICOLOGY LABORATORY, *Analysis of Alcohols in Aqueous and Biological Samples by*
23 *Headspace Gas Chromatography*, § K5 versions (2004) – (2006).

24 ³³⁵ Testimony of Dr. Logan, KC4, p.26-7; KC5, p.100.

³³⁶ Testimony of Dr. Logan, KC4, p.26.

³³⁷ Meyer, DATA ANALYSIS: FOR SCIENTISTS AND ENGINEERS, 17 (1975); Testimony of Dr. Ashley Emery, KC7,
p.51.

³³⁸ Testimony of Rod Gullberg, KC2, p.15.

³³⁹ Testimony of Dr. Ashley Emery, A2, p.47; AMERICAN SOCIETY FOR TESTING AND MATERIALS, *Standard*
Practice for Dealing with Outlying Observations, ASTM Designation E 178 – 02, § 1.1.1 (2002).

1 true, the value should be retained and processed in the same manner as the other observations in
2 the sample.”³⁴⁰ Accordingly, the mere fact that a value does not correspond to an analyst’s
3 preconceived notion of what the AC of a solution should be cannot, without more, justify
4 discarding data.³⁴¹ The whole point of certification is to check to see if that preconceived notion
5 is accurate.

6 It’s not just the mean AC that is drawn into question, though. Where the determination of
7 precision is one of the goals, valid deviate values, known as “stragglers”, are critical.³⁴² Blindly
8 discarding these “stragglers” will lead to an underestimate in the uncertainty (lack of precision)
9 in measured values.³⁴³

10 None of this means that absent an identifiable assignable cause all such values are
11 acceptable. “It is recognized that for a variety of reasons occasional analytical results will...deviate
12 significantly and spuriously from the true value.”³⁴⁴ These are known as outliers.³⁴⁵ “A single
13 result or an entire set of results is suspected to be a statistically invalid result (an outlier) if its
14 deviation either in accuracy or precision from others in the set or other sets, respectively, is
15 greater than can be justified by statistical fluctuations pertinent to a given frequency
16 distribution.”³⁴⁶ Nonetheless, “an outlier in a well behaved measurement system should be a
17

18 ³⁴⁰ AMERICAN SOCIETY FOR TESTING AND MATERIALS, *Standard Practice for Dealing with Outlying Observations*,
ASTM Designation E 178 – 02, § 1.1.1 (2002).

19 ³⁴¹ Testimony of Dr. Nayak Polissar, KC7, p.182.

20 ³⁴² INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical*
Principles for Certification, ISO Guide 35:2006(E) § 10.5.5 (2006).

21 ³⁴³ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical*
Principles for Certification, ISO Guide 35:2006(E) § 10.5.5 (2006); BEVINGTON, *Data Reduction and Error*
Analysis for the Physical Sciences, 56 (2003).

22 ³⁴⁴ SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology*
Laboratory Guidelines, § 8.3.9 (2006).

23 ³⁴⁵ Testimony of Dr. Ashley Emery, A2, p.47; SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN ACADEMY OF
FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 8.3.9 (2006).

24 ³⁴⁶ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical*
Principles for Certification, ISO Guide 35:2006(E) § 10.5.5 (2006); NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY, *NIST Special Publication 260-100*, 79 (1993).

1 rare occurrence.”³⁴⁷

2 There are a number of standard statistical methods and criteria recognized throughout the
3 scientific community for indentifying outliers.³⁴⁸ “The test for outliers should be the
4 statistician’s prerogative, both for selecting valid approaches for outlier testing as well as for
5 carrying out the analysis.”³⁴⁹ Once chosen, however, the same methodology must be utilized
6 throughout a particular lab.³⁵⁰ That is, every lab must develop “policies on treatment and
7 investigation of statistical outliers” “based on accepted statistical principles.”³⁵¹ In each
8 particular instance, “[o]utliers should not be excluded on purely statistical evidence until they
9 have been thoroughly investigated and, where possible, the reasons for the discrepancies
10 identified.”³⁵² Absent assignable cause, it “is incorrect and unacceptable scientifically” to reject
11 data without first having gone through the appropriate statistical analysis.³⁵³

12 Throughout the scientific community, whether or not a particular value is an outlier is
13 commonly determined by its relationship to the mean of the data and the standard deviation of
14 the data. The most widely used measure is the ratio of the difference between the suspected
15 outlier and the mean of the data to the standard deviation.³⁵⁴

16 ³⁴⁷ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 79 (1993);
17 Testimony of Dr. Ashley Emery, KC7, p.52.

18 ³⁴⁸ Testimony of Dr. Ashley Emery, A2, p.47; KC7, p.35-6, 51.

19 ³⁴⁹ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical
20 Principles for Certification*, ISO Guide 35:2006(E) § 10.5.5 (2006).

21 ³⁵⁰ Testimony of Dr. Ashley Emery, A2, p.50; Testimony of Dr. Logan, KC5, p.97, 165.

22 ³⁵¹ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Reference
23 Material Producers*, ISO Guide 34:2000(E) § 5.15.1(a) (2000); SOCIETY OF FORENSIC TOXICOLOGISTS/AMERICAN
24 ACADEMY OF FORENSIC SCIENTISTS, *Forensic Toxicology Laboratory Guidelines*, § 8.3.9 (2006).

³⁵² INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Reference
Material Producers*, ISO Guide 34:2000(E) § 5.15.1 (2000); NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY, *NIST Special Publication 260-100*, 79 (1993); AMERICAN SOCIETY FOR TESTING AND MATERIALS,
Standard Practice for Dealing with Outlying Observations, *ASTM Designation E 178 – 02*, § 1 (2002).

³⁵³ Testimony of Rod Gullberg, KC2, p.16; Testimony of Dr. Ashley Emery, A2, p.45-6, 58-9; NATIONAL INSTITUTE
OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 79 (1993); Taylor, AN INTRODUCTION TO
ERROR ANALYSIS: THE STUDY OF UNCERTAINTIES IN PHYSICAL MEASUREMENTS, 166-9 (2nd 1997).

³⁵⁴ Testimony of Dr. Ashley Emery, A2, p.48-9; Rod Gullberg, *Useful Mathematical and Statistical Equations*, 11
Course materials prepared for the Borkenstein Institute (2006); NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY, *NIST Special Publication 260-100*, 80 (1993); AMERICAN SOCIETY FOR TESTING AND MATERIALS,

$$C = |X_{ol} - M| / SD \quad \text{Eq. 7}$$

Although the outlier algorithm is well defined, it leaves as a matter of discretion to a particular lab what values of C will be used to define an outlier for their purposes.³⁵⁵

Prior to December 18, 2007, after more than a decade and a half under the leadership of Dr. Logan, the Toxicology Lab had no policy concerning the determination of outliers.³⁵⁶ And “it was clear that different analysts were applying different criteria.”³⁵⁷ Many analysts in fact had been trained to discard data anytime it fell outside the required certification mean range, contrary to the protocols.³⁵⁸ As a result, data had been discarded for a variety of reasons, some valid, some not and others still unknown.

Two months after the testimony in Skagit County concerning the discarding of data by analysts and a month after Dr. Ashley Emery’s testimony in DoL proceedings, Dr. Logan finally adopted an outlier policy on December 18, 2007.³⁵⁹ The methodology implemented by the Lab is that of equation 7 with C = 3.3 for Field solutions and C = 3.8 for QAP solutions.³⁶⁰ In determining whether an outlier exists, the data collected by all analysts is to be included in the calculation. Hence, data cannot be rejected until after all analysts have completed their testing. Moreover, the determination is to be made by someone other than the analyst who collected the

Standard Practice for Dealing with Outlying Observations, ASTM Designation E 178 – 02, § 6.1-§ 6.2 (2002); J. TAYLOR, An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements, 170 (2nd Ed. 1997); Meyer, DATA ANALYSIS: FOR SCIENTISTS AND ENGINEERS, 17-8 (1975).

³⁵⁵ Testimony of Dr. Ashley Emery, A2, p.49-50, 71; NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 80 (1993).

³⁵⁶ Testimony of Dr. Logan, KC5, p.164; Testimony of Rod Gullberg, A2, p.86, 92.

³⁵⁷ Testimony of Dr. Logan, KC5, p.165.

³⁵⁸ Testimony of Lisa Piquette (Noble), KC6, p.107; Testimony of Brianna Peterson, KC6, p.115; Testimony of Dr. Nuwayhid, KC6, p.157-8.

³⁵⁹ Testimony of Dr. Logan, KC5, p.96-7, 164; KC6, p.26; WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument*, G3 (2007); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument*, G3 (2007).

³⁶⁰ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument*, G3 (2007); WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test Instrument*, G3 (2007).

1 data. When an outlier is discovered, that value, and that value alone, is to be discarded.

2 Given that the December protocols implement the methodology suggested by Dr. Emery,
3 the defense can hardly deny that it is sound. Several difficulties remain, however, all centering
4 on data discarded prior to the adoption of the new protocols. The first is that even where
5 discarded data can be confirmed under the new protocols to have included an outlier, the
6 analysts' responses were still in violation of the protocol. This results because instead of simply
7 rejecting the single anomalous value, analysts discarded the entire set of data.

8 For example, consider Kelly Gross' rejection of data for solution 07023.³⁶¹ She did not
9 give any assignable cause for discarding her first set of data. She simply noted that it had been
10 rejected "due to a .108 result."³⁶² Nonetheless, under the Toxicologist's new protocols, the value
11 in question is in fact an outlier.³⁶³ And, under these provisions, a reviewer would have been
12 correct in discarding the data point. Unfortunately, Gross did not stop there. Instead, she
13 discarded all of the data from that set in violation of the protocol. Of course this can't be blamed
14 on Gross as that is likely what she was trained to do. Nonetheless, it is not in keeping with
15 proper scientific practice or the protocols.

16 _____
³⁶¹ Skagit Ex. 46; Arnston Ex. 72.

17 ³⁶² Skagit Ex. 46; Arnston Ex. 72.

18 ³⁶³ Whether the value is an outlier can be determined based on Gross' data set alone or on all of the data collected by
19 all of the analysts. Either approach is scientifically reasonable as long as it is specified in advance. The
20 Toxicologist's new protocols include the data from all of the analysts. Because this gives the benefit of the doubt to
21 the State, the defense has chosen to rely on this methodology.

22 If only Gross' data set is considered, the .108 is not an outlier and the rejection of data would not have been
23 justified on statistical grounds. This is determined as follows. Dr. Logan previously testified that he would a value
24 of $C = 2$ for purposes of outlier analysis. *Testimony of Dr. Logan*, A1, p.168. Using that value, for Gross' decision
to discard the data to have been correct, we would have to have had:

$$2 \leq |.108 - M| / SD$$

The mean and standard deviation of Gross' data are easily found to be:

$$\begin{aligned} M &= .1026 \\ SD &= .0030496 \end{aligned}$$

So that:

$$|.108 - M| / SD = |.108 - .1026| / .0030496 = 1.77$$

Because 1.77 is less than 2, under the criteria accepted by Logan this value should not have been discarded. Based
on this analysis, Rod Gullberg also testified in an earlier hearing that he would not have rejected this data.
Testimony of Rod Gullberg, A2, p.90-1.

1 One of the most significant problems, however, centers on a single solution and
2 illustrates why adherence to proper scientific standards is so important. Lisa Noble was one of
3 the analysts who certified QAP solution 06028.³⁶⁴ She first tested the solution on August 11,
4 2006, obtaining the following results:

5 .091, .090, .091, .092, .091

6 Although every single value except one fell outside the required mean range for a QAP
7 solution, there is no assignable cause to believe that these values were incorrect.³⁶⁵ The
8 chromatograph appeared to be functioning properly, as it measured the .10 control perfectly at
9 .100 and the blank as .000, and the values did not violate the protocols.³⁶⁶ Nonetheless, based
10 solely on the fact that she had been improperly trained to reject data whenever any value fell
11 outside the required mean range, this data was discarded.³⁶⁷ This was a violation of the solution
12 certification protocols.

13 If this data had been included, the certified AC for the solution would have been .0957,
14 well within the requirements of the protocol.³⁶⁸ This translates into an EVC of .0778.³⁶⁹
15 Moreover, there are no outliers and so no statistical basis for rejecting the data or the solution.³⁷⁰
16 Thus, both this data and any calculations based on it would have been scientifically valid. As a
17 result, not only did rejection of the data violate the protocols, but it was contrary to acceptable
18 scientific practice.

19 Because Noble discarded this data, however, she ran a second set. The data she collected
20 the second time, and which was included in the worksheet, was:

21 ³⁶⁴ Testimony of Lisa Noble, KC6, p.100.

22 ³⁶⁵ Testimony of Lisa Noble, KC6, p.106-8.

23 ³⁶⁶ Testimony of Lisa Noble, KC6, p.110.

24 ³⁶⁷ Testimony of Lisa Noble, KC6, p.109-10.

³⁶⁸ Testimony of Rod Gullberg, KC1, p.137; Testimony of Dr. Nayak Polissar, KC7, p.226; KC Ex. 58.

³⁶⁹ Testimony of Rod Gullberg, KC1, p.137; Testimony of Dr. Nayak Polissar, KC7, p.227; KC Ex. 58.

³⁷⁰ Testimony of Rod Gullberg, KC1, p.132, 136-7; Testimony of Dr. Nayak Polissar, KC7, p.229-30; Nayak Polissar, *Outlier info* (Calculations by Dr. Nayak Polissar contained in missing pages of KC Ex. 153); KC Ex. 58.

1 .096, .097, .096, .097, .097

2 This results in an AC of .0975 which translates into an EVC of .0793.³⁷¹ These are the
3 values that were certified and sent to the breath test section for use in QAPs of DataMasters.
4 Because the original set of data had been improperly discarded, however, these values were not
5 properly certified so that any QAP performed with the solution was a violation of the Breath Test
6 Section QAP protocols.

7 This is not simply a case of improper practice without effect, though. The change in the
8 value reported for the solution was +.0015³⁷² yielding a percent error of 1.85%, far in excess of
9 what has already been recognized as being forensically indefensible for this type of an error.³⁷³

10 There are two direct effects from this:

11 1) Use of the second value for calibration purposes would be expected to result in
12 DataMaster bias artificially elevating test results; and

13 2) Bias determinations would yield test results .0015 higher than the true values.

14 As discussed above, either can have a significant impact when test results are near a .02,
15 .04, .08 or .15, with respect to the determination of whether the mean of two test result is within
16 $\pm 10\%$ of each other or whether the external standard test falls within .072 - .088. At least 32
17 DataMaster QAPs were performed utilizing this solution.³⁷⁴ The approximate number of tests
18 performed utilizing these DataMasters Statewide was 3,445.³⁷⁵

19 In addition to the consequences mentioned above, though, the large error permitted
20 DataMasters to be approved for use in the field when they should not have been. This occurred
21 because 06028 was used to both calibrate the instrument and then to check the calibration. This

22 ³⁷¹ Testimony of Rod Gullberg, KC1, p.137; Testimony of Dr. Nayak Polissar, KC7, p.226-7.

23 ³⁷² Testimony of Rod Gullberg, KC2, p.192; Testimony of Dr. Nayak Polissar, KC7, p.227.

24 ³⁷³ Testimony of Rod Gullberg, KC1, p.137-8; KC2, p.191; Testimony of Dr. Nayak Polissar, KC7, p.195; KC Ex. 58.

³⁷⁴ Testimony of Rod Gullberg, KC1, p.140-1; KC Ex. 54, 74.

³⁷⁵ Testimony of Trooper Ken Denton, KC3, p.68; KC Ex. 74 (4,053 x .85 = 3,445).

1 is not good scientific practice because if the calibrator is incorrect, when you use the same wrong
2 value to check the calibration you cannot detect the error. When the correct EVC for solution
3 06028 is substituted back in to the QAP calibration check, we find that 3 DataMasters actually
4 fail their QAPs and should not have been sent out into the field.³⁷⁶ When informed of this fact
5 on the stand, State’s witness Dr. Polissar replied: “That’s important. And that has an affect”
6 because the instrument could no longer satisfy its quality control criteria.³⁷⁷ Thereafter,
7 approximately 244 tests were performed on these instruments.³⁷⁸

8 Still, the full scope of the problem has not yet been determined. In certifying Field
9 solution 07031, Brianna Peterson also rejected her first set of data.³⁷⁹ Although she alludes to a
10 possible assignable cause in her declaration (involving the operational characteristics of
11 chromatograph 1), she contradicted this in testimony indicating that she believed her instrument
12 was functioning in a “scientifically acceptable” manner.³⁸⁰

13 One would hope that this is the case. Instrument 1 has been utilized in the certification of
14 tens, if not hundreds, of simulator solutions over the years and the assignable cause referred to
15 was an operational characteristic of the instrument with a known history in the Lab. If the
16 assignable cause referred to in Peterson’s declaration did in fact cause the instrument to operate
17 in a “scientifically unacceptable” manner, then our discussion here does not focus on this single
18 solution. Instead, it draws into question the validity of every single solution certified using
19 Instrument 1 over the years. That is every solution until the problem was fixed a week before the
20 King County hearings began.

21 Supporting Peterson’s contention that the instrument was operating in a scientifically

22 ³⁷⁶ Testimony of Rod Gullberg, KC1, p.143-4; KC Ex. 57, 58.

23 ³⁷⁷ Testimony of Dr. Nayak Polissar, KC7, p.232.

24 ³⁷⁸ Testimony of Rod Gullberg, KC1, p.143-4; KC Ex. 57, 58, 74 (287 x .85 = 244).

³⁷⁹ Declaration of Brianna Peterson, KC Ex.127.

³⁸⁰ Testimony of Brianna Peterson, KC6, p.123.

1 acceptable manner is the fact that the control value was measured well within the acceptable
2 range of the protocols and her blank result was .000 as required.³⁸¹ In fact, Peterson testified that
3 the possible assignable cause alluded to in her declaration was not the reason she discarded this
4 data at all.³⁸² Instead, the sole reason the data was rejected was because one of her values fell
5 outside the required range for the mean.³⁸³ As she admitted, however, and has been discussed
6 above, this violated the protocols in place both at the time and now.³⁸⁴ At the time she discarded
7 the data, it was the improper thing to do.³⁸⁵ At that point, all the data was all acceptable.³⁸⁶

8 Before it could be determined whether it was appropriate to reject any of Peterson's data
9 based on an outlier analysis, a reviewer would have to wait for all the analysts' data to be
10 collected and subject it to the test found in the latest protocols.³⁸⁷ Ironically, when that is done,
11 we find that Peterson's .110 result was indeed an outlier.³⁸⁸ When we apply the outlier test to
12 the data again, as required by the protocols, we find the .108 results reported by Peterson were
13 outliers as well.³⁸⁹ This means that Peterson's original valid data, when analyzed along with the
14 data from all the other analysts, contained at least 4 outliers. Unfortunately for the Lab, the
15 protocols command that: "If more than two outliers are detected for a batch then the solution will
16
17

18 ³⁸¹ Testimony of Brianna Peterson, KC6, p.123-4, 133.

³⁸² Testimony of Brianna Peterson, KC6, p.115, 121-2, 137-8, 141.

19 ³⁸³ Testimony of Brianna Peterson, KC6, p.114, 121-2, 124.

³⁸⁴ Testimony of Brianna Peterson, KC6, p.115, 124-5.

20 ³⁸⁵ Testimony of Brianna Peterson, KC6, p.125.

³⁸⁶ Testimony of Brianna Peterson, KC6, p.134.

21 ³⁸⁷ Testimony of Brianna Peterson, KC6, p.124-5; WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For
The Preparation Of .08 Simulator External Standard Solution For Use With A Breath Test Instrument*, G3 (2007).

³⁸⁸ Utilizing the approach mandated by the protocols:

22 M=.1016

SD=.00199 so that

$|\ .110 - M | / SD = | .110 - .1016 | / .00199 = 4.22 > 3.3.$

23 ³⁸⁹ Utilizing the approach mandated by the protocols:

M=.1015

SD=.00184 so that

24 $|\ .108 - M | / SD = | .108 - .1015 | / .00184 = 3.53 > 3.3.$

1 be discarded.”³⁹⁰ Thus, solution 07031 should have been discarded.

2 Solution 07031 has not been discarded, however. In fact, it is being utilized in the field
3 as an external standard at the time this being written. How many tests have been or will be
4 performed utilizing it is still unknown.

5 4. THE PROBLEM OF MEANS ACROSS MACHINES

6 During certification of a reference material, “the goal of the...measurements is to learn
7 about the material, not the analytic method...measurements for...certification are designed to
8 maximize independent information about the concentration of the analyte in the materials.”³⁹¹
9 Accordingly, “[t]he results obtained when analyzing reference materials should be interpreted
10 with consideration given to the conditions of measurement.”³⁹² A “reference material producer
11 shall use documented procedures based on *accepted statistical principles* for the assignment of
12 property values.”³⁹³

13 Back in algebra, we all learned that if you want the mean of a particular set of numbers,
14 you simply add them all up and then divide by the number of values:

$$15 \quad M = (\sum_i X_i) / n \quad \text{Eq. 8}$$

16 This is simply a classical arithmetic mean. Whenever we are concerned merely with
17 numbers and not what they may represent in reality, this operation is appropriate.

18 Another type of mean is commonly used when analyzing scientific measurements. It is
19 known as the weighted mean. The weighted mean is utilized when distinct groups of

20 ³⁹⁰ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
21 *Standard Solution For Use With A Breath Test Instrument*, G3 (2007); Testimony of Dr. Logan, KC5, p.96.

22 ³⁹¹ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *Statistical Aspects of the Certification of Chemical*
Batch SRMs, NIST Special Publication 260-125, 11 (1993).

23 ³⁹² NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 33 (1993).

24 ³⁹³ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Reference*
Material Producers, ISO Guide 34:2000(E) § 5.15.1 (2000)(Emphasis added); INTERNATIONAL ORGANIZATION FOR
STANDARDIZATION, *General Requirements for the Competence of Testing and Calibration Laboratories*, ISO/IEC
17025:1999(E) § 5.7.1 (1999); NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication*
260-100, 20 (1993).

1 measurements are to be combined. To find the weighted mean, we calculate the arithmetic mean
2 of the data obtained from each group separately, then determine the weight to be given each of
3 those means and then combine them. The traditional weighted mean is usually expressed as:³⁹⁴

$$4 \quad \text{WM} = \sum_i (w_i M_i) / \sum_i w_i \quad \text{Eq. 9}$$

where

5 M_i = the classical weighted mean of the i^{th} set of measurements

w_i = n_i / SD_i (the weighting factor)

6 n_i = the number of measurements in the i^{th} set of measurements

SD_i = the standard deviation of the i^{th} set of measurements (precision)

7 Although in special circumstances the weighted and classical mean may be equal, in
8 general they will not be.³⁹⁵ “The weighted mean computation attaches more weight to those
9 groups of measurements that are more precise whereas the arithmetic mean attaches equal weight
10 to all measurements.”³⁹⁶ The weight given to the mean of a particular group of measurements
11 represents the scientist’s “confidence in the precision and the accuracy of that value.”³⁹⁷ Under
12 the principle of maximum likelihood, the weighted mean yields the most precise value for the
13 true mean.³⁹⁸

14 The concept of precision comes into play at two points here. The first is during the
15 measurement process. Consider Figure 3. Assume A, B and C are three different measurement

16 ³⁹⁴ Testimony of Dr. Ashley Emery, KC7, p.93-4; A2, p.80-1; Testimony of Rod Gullberg, KC2, p.147; A2, p.83;
17 Rod Gullberg, *Useful Mathematical and Statistical Equations*, 4 Course materials prepared for the Borkenstein
18 Institute (2006); Arnston Ex. 65, 67, 69-70, 73; Robert Paule, et. al., *Consensus Values and Weighting Factors*, 87 J.
19 RESEARCH, NAT’L BUREAU OF STANDARDS, 377-385 (1982); NATIONAL INSTITUTE OF STANDARDS AND
20 TECHNOLOGY, *NIST Special Publication 260-100*, 78 (1993); INTERNATIONAL ORGANIZATION FOR
21 STANDARDIZATION, *Reference Materials – General and Statistical Principles for Certification*, ISO Guide
22 35:2006(E) App. B.7 (2006); N. Zhang, *The Uncertainty Associated with the Weighted Mean of Measurement Data*,
23 43 METROLOGIA 195 (2006); Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution
24 Standards*, 14(3) J. ANAL. TOXICOL. 196-7 (1990); BEVINGTON, *Data Reduction and Error Analysis for the Physical
Sciences*, 57 (2003); J. TAYLOR, *An Introduction to Error Analysis: The Study of Uncertainties in Physical
Measurements*, 175-6 (2nd Ed. 1997).

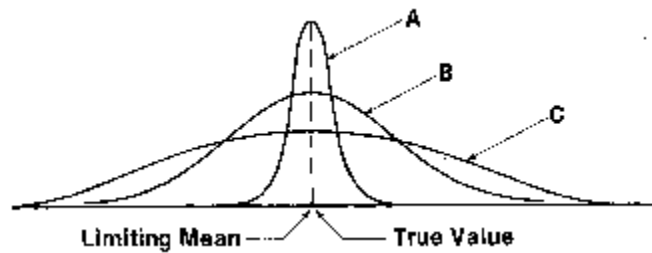
21 ³⁹⁵ Robert Paule, et. al., *Consensus Values and Weighting Factors*, 87 J. RESEARCH, NAT’L BUREAU OF STANDARDS,
377, 380 (1982).

22 ³⁹⁶ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196-8 (1990).

23 ³⁹⁷ Testimony of Dr. Ashley Emery, KC7, p.58-9; Bevington, *DATA REDUCTION AND ERROR ANALYSIS*, 56-7 (3rd
2003).

24 ³⁹⁸ Testimony of Dr. Ashley Emery, KC7, p.59, 61, 103-4, 143; Taylor, *AN INTRODUCTION TO ERROR ANALYSIS:
THE STUDY OF UNCERTAINTIES IN PHYSICAL MEASUREMENTS* (2nd 1997); Bevington, *DATA REDUCTION AND ERROR
ANALYSIS*, 57 (3rd 2003).

1 processes. We can never know with absolute certainty whether the value of a particular
2 measurement is the true value of the quantity being measured. From the Figure, though, we see
3 that if we take an infinite number of measurements, the mean value for the quantity being
4 measured will be the same for each.



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9 **Figure 3**

10
11 Figure 3 also shows us that the precision of each process is very different. A is the most
12 precise with its measurements all bunched near the true value while C is the least with its
13 measurements spread over a wide range. Because process A is very precise, even though any
14 particular measurement may not yield the true value, we can expect it to be close to that value.³⁹⁹
15 On the other hand, while we know that any particular measurement made using process C may
16 also not yield the true value, we now cannot even have a high degree of confidence that it will be
17 near the true value.⁴⁰⁰ Therein lies the importance of the measurement process precision in the
18 use of a weighted mean.⁴⁰¹

19 If some measurements show very little variability...then you assign greater
20 confidence and greater weight to them. And to the readings which show more
21 scatter, you assign less confidence.

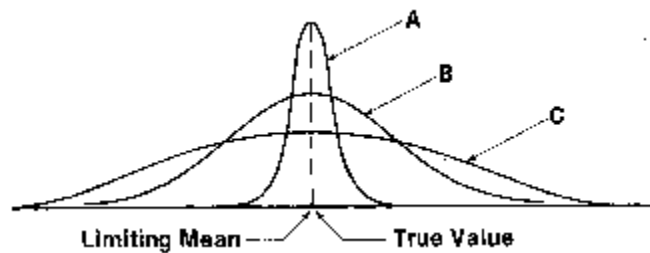
22 The second point at which the concept of precision arises is in the comparison of the
23 arithmetic and weighted means themselves. The reason the most precise statistical method is

24 ³⁹⁹ Testimony of Dr. Ashley Emery KC7, p.59.

⁴⁰⁰ Testimony of Dr. Ashley Emery KC7, p.59.

⁴⁰¹ Testimony of Dr. Ashley Emery KC7, p.87-8, 59.

1 required is easy to understand.⁴⁰² Consider Figure 4. This shows the distributions of means
2 about a true value that will be reported by each of three different statistical methods (A, B, and
3 C). Regardless of the method used, for any particular set of measurements we cannot know with
4 absolute certainty that the mean arrived at is correct. If we perform infinitely many sets of
5 measurements, however, the mean of the means returned by each method approaches the same
6 true value. In that sense, all three methods are considered unbiased.



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11 **Figure 4**

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13 The figure also illustrates that the precision of each of the three methods is very different.
14 A is the most precise with its values all bunched near the true value while C is the least with its
15 values spread over a wide range. Because method A is very precise, even though any particular
16 mean we calculate using it may not be the true value, we can expect it to be close to that value.
17 On the other hand, while we know that any particular mean we calculate using method C may
18 also not be the true value, we now cannot even have a high degree of confidence that it will be
19 near the true value. Thus, we will always trust an individual determination of the mean
20 determined by method A more than we will by method C.⁴⁰³ In this way, we say that method “C
21 is relatively inaccurate (compared with A) due to its precision.”⁴⁰⁴

22 In determining whether a weighted or arithmetic mean will be utilized, two environments

23 ⁴⁰² Testimony of Dr. Ashley Emery KC7, p.138-9.

24 ⁴⁰³ Testimony of Dr. Ashley Emery KC7, p.139.

⁴⁰⁴ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 2 (1993).

1 must be distinguished. The first, known as “within-laboratory” characterization, occurs “when a
2 substance is analyzed using the same method under the same conditions, that is, by the same
3 operator, with the same equipment, on the same day and in a single laboratory.”⁴⁰⁵ The second,
4 known as “between laboratory” characterization, “concerns results obtained when the same
5 material is analyzed by the same method under different conditions, whether different analysts,
6 operator’s, instruments or laboratories.”⁴⁰⁶

7 When certification is the result of “within-laboratory” characterization, the mean value of
8 a quantity is simply its arithmetic mean.⁴⁰⁷ This is why the breath test section can rely upon a
9 classical-arithmetic mean when performing a QAP on a particular DataMaster. Since all data
10 during a QAP is collected on a single instrument, by a single operator, on a single day, a
11 classical-arithmetic mean is appropriate for this process.⁴⁰⁸

12 On the other hand, when certification is the result of “between-laboratory”
13 characterization, use of a weighted mean must be considered.⁴⁰⁹ Rod Gullberg explicitly
14 recognized this 17 years ago in the context of the solution certification process and his opinion is
15 the same today.⁴¹⁰ Focusing on differences between operators and days of testing, in the Journal
16 of Analytical Toxicology in an article entitled “Using a Weighted Mean to Compute the Values
17 of Simulator Solution Standards”, he concluded:⁴¹¹

18 When the solution measurements are made by different individuals and on
19 different days, the simple arithmetic mean may not be the best estimate of the true

20 ⁴⁰⁵ A.W. Jones, *Dealing with Uncertainty in Chemical Measurements*, 14(1) NEWSLETTER OF THE INT. ASSOC. FOR
CHEM. TESTING, 7 (2003).

21 ⁴⁰⁶ A.W. Jones, *Dealing with Uncertainty in Chemical Measurements*, 14(1) NEWSLETTER OF THE INT. ASSOC. FOR
CHEM. TESTING, 7 (2003).

22 ⁴⁰⁷ Testimony of Ashley Emery KC7, p.56.

⁴⁰⁸ Testimony of Rod Gullberg, KC1, p.172-3; Testimony of Dr. Ashley Emery, KC7 p.128.

⁴⁰⁹ Testimony of Dr. Ashley Emery, KC7 p.58.

23 ⁴¹⁰ Testimony of Rod Gullberg, KC1, p.171-2; KC2, p.152-3; Rod Gullberg, *Using a Weighted Mean to Compute
the Values of Simulator Solution Standards*, 14(3) J. ANAL. TOXICOL. 196-8 (1990).

24 ⁴¹¹ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196-8 (1990).

1 solution value. A weighted mean may be a more appropriate estimate of the true
2 concentration.

3 ∴

4 It would seem that a weighted mean provides a better estimate of the true
5 simulator solution value and should be employed for those cases in which
6 significant inter-operator or interday variability exists. At the very least, the
7 weighted mean should be compared to the arithmetic mean to determine if
8 significant differences exist.

9 While Gullberg focused on the variability introduced by analysts and time, one of the
10 most common sources of variability involves the use of multiple independent instruments to
11 certify a reference material.⁴¹² If the precision as determined from the set of measurements
12 taken on each instrument is the same, we may be able to rely on a simple arithmetic mean.⁴¹³ If
13 the precision of measurements taken on the separate instruments is different, however, the
14 weighted mean is more appropriate and must be considered.⁴¹⁴ In this context, “[t]here are many
15 situations in which it would be very misleading to average quantities without [weighting
16 them]”.⁴¹⁵

17 As noted above, a weighted mean yields values that are more precise than the arithmetic
18 mean.⁴¹⁶ Moreover, implementation of the weighted mean calculation is easy, involving only “a
19 trivial extension of an Excel spreadsheet.”⁴¹⁷ Thus, there is no reason not to rely on a weighted
20 mean.⁴¹⁸ “It’s always safe to use the weighted mean.”⁴¹⁹

21 In the context of solution certification, “[w]hen there is significant variability in an
22 analytical method and the known concentration is the objective, then a weighted mean

23 ⁴¹² Testimony of Dr. Ashley Emery, KC7 p.120.

24 ⁴¹³ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 77 (1993).

⁴¹⁴ Testimony of Dr. Ashley Emery KC7, p.58, 60, 93-4; NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 79 (1993); Taylor, AN INTRODUCTION TO ERROR ANALYSIS: THE STUDY OF UNCERTAINTIES IN PHYSICAL MEASUREMENTS (2nd 1997).

⁴¹⁵ Freund, MODERN ELEMENTARY STATISTICS, 39 (4th 1973).

⁴¹⁶ Testimony of Dr. Ashley Emery KC7, p.104, 143.

⁴¹⁷ Testimony of Dr. Ashley Emery KC7, p.136-7.

⁴¹⁸ Testimony of Dr. Ashley Emery KC7, p.60.

⁴¹⁹ Testimony of Dr. Nayak Polissar, KC7, p.222.

1 computation is probably more appropriate.”⁴²⁰ On the other hand, if the precision of our
2 different instruments is nearly the same, there may be little effect from failing to do so.⁴²¹
3 Whether failure to use a weighted mean is scientifically unacceptable then, depends on the
4 purpose for which the mean is being determined and “the risk of error or the consequences of
5 error...are [the weighted and arithmetic means] importantly different or not?”⁴²² What might be
6 considered very precise for one purpose could be grossly imprecise for another.⁴²³ Where the
7 difference may materially affect the purpose for which the mean is being determined, a weighted
8 mean must be used to be scientifically valid.⁴²⁴

9 If the forensic uses of simulator solutions are ignored, the use of an arithmetic mean in
10 the certification process is surprisingly precise in the fourth decimal place.⁴²⁵ As discussed
11 above, however, when the law and the purposes for which simulator solutions are to be used is
12 considered, very small differences (.0001) can have significant consequences.⁴²⁶ This is so
13 regardless of how high a Citizen’s BAC results are.⁴²⁷ Accordingly, when the law is considered,
14 the scientific assessment of both the accuracy and precision must be reexamined.⁴²⁸

15 Despite the robustness of the arithmetic mean, use of the weighted mean in the solution
16 certification procession is measurably more precise.⁴²⁹ If the difference between these two
17 methods manifests itself in the fourth decimal place, that will be important and the weighted

18 ⁴²⁰ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196-8 (1990); Testimony of Rod Gullberg, KC1, p.151.

19 ⁴²¹ Testimony of Dr. Ashley Emery KC7, p.60-1.

20 ⁴²² Testimony of Rod Gullberg, KC1, p.151; KC2, p.62; Testimony of Dr. Ashley Emery KC7, p.108; Testimony of
Dr. Nayak Polissar, KC7, p.222.

21 ⁴²³ Testimony of Dr. Ashley Emery, KC7, p.54.

22 ⁴²⁴ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of
Reference Material Producers*, ISO Guide 34:2000(E) § 5.15.1 (2000); J. TAYLOR, *An Introduction to Error
Analysis: The Study of Uncertainties in Physical Measurements*, 173-7 (2nd Ed. 1997); N. Zhang, *The Uncertainty
Associated with the Weighted Mean of Measurement Data*, 43 METROLOGIA 195, 201 (2006).

23 ⁴²⁵ Testimony of Dr. Ashley Emery, KC7, p.54, 62.

24 ⁴²⁶ Testimony of Rod Gullberg, KC2, p.10-1.

⁴²⁷ Testimony of Rod Gullberg, KC2, p.181-2.

⁴²⁸ Testimony of Dr. Ashley Emery KC7, p.63, 108, 141.

⁴²⁹ Testimony of Dr. Nayak Polissar, KC7, p.205, 206.

1 mean must be considered.⁴³⁰ “If you can show that the weighted mean affects the fourth decimal
2 place and that has some subsequent affect, then, [science dictates we’ve got to rely on the
3 weighted mean.]”⁴³¹

4 Using a Field solution chosen by Rod Gullberg, 07007, Dr. Emery demonstrated that the
5 use of a weighted mean changed the EVC of the solution by .0002.⁴³² Similarly, Dr. Emery
6 demonstrated that the use of a weighted mean changed the EVC of QAP solutions 07004 and
7 06012 by .0002 and .0003 respectively.⁴³³ Rod Gullberg performed a similar calculation for
8 Field solution 07010 finding that the weighted mean changed the EVC by .0002.⁴³⁴ Dr. Polissar
9 discovered while on the stand, quite to his surprise, that use of a weighted mean changed the
10 EVC of QAP solution 06013 by .0006.⁴³⁵ Hence, it is undeniable that the use of a weighted
11 mean does affect a solution’s EVC in the fourth decimal place.

12 As discussed exhaustively above, such small changes can have serious consequences.⁴³⁶
13 This makes consideration of the fourth decimal place “important.”⁴³⁷ In fact, given the potential
14 consequences and purpose of the calculation, science dictates that we’ve got to rely on the
15 weighted mean.⁴³⁸

16 It is interesting to note that Brianna Peterson offered an actual physical reason why the
17 Lab should have implemented a weighted mean across instruments even before an analysis of
18 precision had been performed. According to her, “historically” chromatograph 1 doesn’t always
19

20 ⁴³⁰ Testimony of Dr. Ashley Emery, KC7, p.54; Testimony of Rod Gullberg, KC2, p.10.

21 ⁴³¹ Testimony of Dr. Ashley Emery, KC7, p.63.

22 ⁴³² Testimony of Dr. Ashley Emery, A2, p.81; Arnston Ex. 73.

23 ⁴³³ Testimony of Dr. Ashley Emery, A2, p.39-40, 41-2; Arnston Ex. 69, 70.

24 ⁴³⁴ Testimony of Rod Gullberg, A2, p.83.

⁴³⁵ Testimony of Dr. Nayak Polissar, KC7, p.241-3; KC Ex. 162 (AM = .18727, WM = .18809, $\Delta\text{EVC} = (.18727 - .18809)/1.23 = .00066 = .0007$).

⁴³⁶ Testimony of Dr. Nayak Polissar, KC7, p.173-4, 215-217.

⁴³⁷ Testimony of Dr. Nayak Polissar, KC7, p.216.

⁴³⁸ Testimony of Dr. Ashley Emery, KC7, p.63.

1 test solutions the same way the other chromatographs do.⁴³⁹ Thru December 2007, its
2 operational characteristics differed from the other instruments in the Lab such that, under certain
3 conditions, the results it reported would be affected.⁴⁴⁰ Instrument 1 is an auto-injection gas
4 chromatograph.⁴⁴¹

5 Although the results obtained on instrument 1 may still have been scientifically valid, this
6 should not have been occurring.⁴⁴² “[A]s a scientist, the method should be the same every
7 time.”⁴⁴³ When this does not occur, it presents the very circumstances that weighted means are
8 meant to address.⁴⁴⁴ If there is “a difference in two instruments, we would have to weight
9 them.”⁴⁴⁵

10 The protocols do not specify how the mean concentration of a solution is to be calculated
11 from the analysts’ data. The software utilized, however, calculates the mean in only one way: it
12 determines the arithmetic mean. Where all of the analysts’ data is collected on a single
13 instrument, this is a scientifically appropriate procedure for determining the mean concentration
14 from the data. When more than one chromatograph is utilized, however, the precision of each
15 instrument must be taken into account and a weighted mean determined.⁴⁴⁶ Utilization of the
16 arithmetic mean in this context is not a scientifically acceptable methodology.⁴⁴⁷

17 Since 2006, 108 solutions have been certified. Of those, 102 were certified using
18 multiple chromatographs. Thus, the mean reported for every one of these 102 solutions, 94.4%

20 ⁴³⁹ Testimony of Brianna Peterson, KC6, p. 120.

⁴⁴⁰ Testimony of Brianna Peterson, KC6, p. 116, 120; Declaration of Brianna Peterson, KC Ex.127.

21 ⁴⁴¹ Testimony of Brianna Peterson, KC6, p. 118.

⁴⁴² Testimony of Brianna Peterson, KC6, p.121.

⁴⁴³ Testimony of Brianna Peterson, KC6, p.121.

22 ⁴⁴⁴ Testimony of Dr. Ashley Emery, KC7, p.55.

⁴⁴⁵ Testimony of Dr. Ashley Emery, KC7, p.61.

23 ⁴⁴⁶ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100, 77-9* (1993); Rod
Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL. TOXICOL.
196-7 (1990).

24 ⁴⁴⁷ Testimony of Dr. Ashley Emery, KC7, p.63; A2, p.17-8.

1 of all solutions certified, was determined using a scientifically invalid and unacceptable
2 methodology. Little confidence can be given to any of the values reported.

3 4 E. DR. LOGAN AND INCOMPETENCE

5 Dr. Logan seems to have developed the defense that he simply has too many duties as the
6 Director of the State's Forensic Laboratory Services Bureau to oversee what the Toxicology Lab
7 does.⁴⁴⁸ From his failure to be aware of what documents were being posted on the Toxicology
8 Lab website to his failure to develop complete protocols, Dr. Logan repeatedly indicates that
9 oversight was not part of his responsibilities, placing the blame primarily on others.⁴⁴⁹ The facts
10 demonstrate that Dr. Logan is not competent to run a lab capable of producing scientifically
11 credible results.

12 1. THE AUDITS

13 During an internal laboratory audit in 2004,⁴⁵⁰ the Lab was found "Non-compliant" with
14 respect to proper record keeping procedures concerning "Simulator Solution Logbooks." In
15 fact, "WSP policies and required procedures appear[ed] to be of secondary concern to lab
16 personnel." Overall, the audit found that "[a]ccurate record keeping and quarterly auditing as
17 required by Patrol Policies and CALEA standards [was] severely deficient." Dr. Logan was
18 explicitly informed that "Ms. Gordon indicated that she did not have time to follow WSP
19 policies and therefore would not be doing it."

20 These findings were ignored by Dr. Logan. Over 3 years later, in August, 2007, another
21 internal audit was performed on the Lab.⁴⁵¹ This time, things were even worse. The audit found

22
23 ⁴⁴⁸ Testimony of Dr. Logan, A1, p.120-122; KC4, p.106-9, 168-174.

⁴⁴⁹ Testimony of Dr. Logan, KC4, p.106-8, 128-30.

⁴⁵⁰ Skagit Ex. 37 (Internal Audit by the Washington State Patrol, 2004).

⁴⁵¹ KC Ex. 118 (Internal Audit by the Washington State Patrol, 2007).

1 that “[t]he department is unnecessarily exposed to litigation due to insufficient documentation
2 and disregard for evidence handling policies and procedures.” Due to carelessness and poor lab
3 practices, “[s]uccessful prosecution of cases is compromised.” “Mandatory audits are not being
4 completed...Non-standard evidence handling procedures and insufficient documentation to
5 ensure the same...and failure to perform required audits jeopardizes operational performance as
6 well as CALEA accreditation.”

7 2. COMPLACENCY

8 Prior to October, 2007, the solution certification process had never been audited nor
9 subject to proper operational or quality assurance standards.⁴⁵² In a private memo to Governor
10 Gregoire, Dr. Logan explained that the “process had been in place for over twenty years and had
11 gone unchallenged, leading to complacency.”⁴⁵³ He later expanded on this testifying that “the
12 lab became complacent. Everybody involved in the process became complacent.”⁴⁵⁴ Former
13 Sergeant Gullberg agreed with this evaluation.⁴⁵⁵ One result of this was Dr. Logan’s failure to
14 adopt outlier criteria during the decade he headed up the Lab. He was aware that the adoption of
15 such criteria was proper scientific practice.⁴⁵⁶ He simply never made the effort to determine
16 how the lack of such a protocol was impacting the work being done by the Lab.⁴⁵⁷ Had Dr.
17 Emery not made Logan aware of the problem, the Lab would likely still not have any outlier
18 policy.

19 3. REPEATED BREAKDOWNS

20 With Logan as its Director, the Forensic Laboratory Services Bureau/State Toxicology
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22 ⁴⁵² Testimony of Dr. Logan, KC4, p.92, 127.

⁴⁵³ KC Ex. 109, p.4.

23 ⁴⁵⁴ Testimony of Dr. Logan, KC4, p.127.

⁴⁵⁵ Testimony of Rod Gullberg, KC2, p.17.

⁴⁵⁶ Testimony of Dr. Logan, KC4, p.56.

24 ⁴⁵⁷ Testimony of Dr. Logan, KC4, p.56.

1 Lab has been plagued by a decade of scandals and mishaps.

2 Spring 1999: Through a careless mistake, Logan fails to amend a WAC when
3 the per se limit is lowered from .10 to .08. This requires the
4 enactment of an emergency regulation to correct his oversight.
Breath tests were suppressed in various jurisdictions around State.
State v. MacKenzie, 114 Wn.App. 687 (2002).

5 Fall 1999: Logan learned that the thermometers used in DataMaster
6 simulators don't have an indefinite lifetime. He subsequently
7 found that as a result of this, 30%-40% of the thermometers used
were inaccurate. He failed to reveal the problem to the public or
defendants. Breath tests were suppressed in various jurisdictions
around State. *City of Seattle v. Allison*, 148 Wn.2d 75 (2002).

8 Fall 2000: State Patrol forensic scientist John Brown resigns while under
9 investigation for concealing an error on a DNA test.

10 Fall 2001: Forensic scientist Michael Hoover confesses to sniffing heroin
11 from evidence samples and pleads guilty to two misdemeanors and
receives an 11-month jail sentence. *State v. Roche*, 114 Wn.App.
12 424 (2002).

13 Fall 2001: Logan adopts a regulation purposefully incorporating well
14 recognized scientific terminology, NIST "traceability", without
15 taking the time to actually learn what it means so that the State
subsequently is unable to comply with the requirement. Breath
tests suppressed Statewide. *City of Seattle v. Clark-Munoz*, 152
Wn.2d 39 (2004).

16 Spring 2003: An internal audit of 100 drug-analysis tests done by Forensic
17 scientist Arnold Melnikoff finds flaws with 30 cases.

18 Sum 2004: The Seattle PI reports on 23 documented cases of DNA testing
19 mistakes including erroneous lab reports, errors in testing
procedure and/or interpretation and cross, tester and unknown
source contamination of samples.

20 Sum 2005 - 2007: Software in State Toxicology is reprogrammed but not properly
21 checked so that simulator solutions are improperly certified with
incorrect values.

22 Sum 2007: Ann Marie Gordon resigns in July when an investigation for
23 perjury is initiated. Logan admits that had he properly investigated
the matter when the first anonymous tip was made, he would have

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1 discovered Gordon's misconduct months earlier.⁴⁵⁸

2 Fall 2007: Ed Formoso is put on administrative leave for his participation in
3 Gordon's conduct.

4 Fall 2007: Over 150 non-software, and 100's of software, related errors are
5 discovered in the solution certification process spanning from 2005
6 - 2007.

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4. LACK OF SCIENTIFIC UNDERSTANDING: THE MYSTERY OF BIAS

How a breath test is affected by a particular type of error is something the State Toxicologist must know in order to do his job competently.⁴⁵⁹

If there's an error in the EVC reported for a QAP solution, it can affect the calibration of a DataMaster and whether or not the machine is accurate.⁴⁶⁰ In this context, "[b]ias quantifies accuracy."⁴⁶¹

Rod Gullberg was the supervisor of the breath test program in Washington for nearly a quarter of a century.⁴⁶² He has a Masters Degree in biostatistics⁴⁶³ and is acknowledged throughout the forensic breath test community, as well as the Washington State Breath Test Program, as an expert in the analysis of bias in breath testing.⁴⁶⁴ Moreover, he was part of the committee involved in developing the ISO compliant standards for simulator solution certification.⁴⁶⁵

Dr. Logan does not "consider [himself] to have any great expertise in statistics."⁴⁶⁶ His opinions in this area are largely based on the expertise of others. Once provided the appropriate

⁴⁵⁸ Testimony of Dr. Logan, KC4, p.114.

⁴⁵⁹ Testimony of Dr. Logan, KC4, p.164.

⁴⁶⁰ Testimony of Rod Gullberg, KC2, p.41-2.

⁴⁶¹ Testimony of Rod Gullberg, KC2, p.45.

⁴⁶² Testimony of Rod Gullberg, A1, p.29.

⁴⁶³ Testimony of Rod Gullberg, KC2, p.20-1.

⁴⁶⁴ A.W. Jones, *Dealing with Uncertainty in Chemical Measurements*, 14(1) NEWSLETTER OF THE INT. ASSOC. FOR CHEM. TESTING, 8 (2003); Testimony of Ken Denton, KC3, p.167-8.

⁴⁶⁵ Testimony of Dr. Logan, KC4, p.178.

⁴⁶⁶ Testimony of Dr. Logan, A1, p.146.

1 methodology, though, he is “able to do simple calculations involving subtraction and division
2 and multiplication.”⁴⁶⁷ Apparently, however, this does not include the calculation of a simple
3 standard deviation which he indicated he “would not attempt...on the stand.”⁴⁶⁸

4 In August 2007, Dr. Logan posted a memo to the WSP Toxicology discovery site
5 entitled “Calculation Error in Program used to calculate Reference Values for External Standard
6 Solutions.”⁴⁶⁹ The memo explained one of the programming errors discussed above and how
7 Logan believed it affected a number of breath tests. In it, Logan relies on the rounded (to three
8 decimal places) EVC of QAP solutions and the single point calibration of DataMasters to
9 determine the effect of the errors discovered.

10 According to Gullberg, Logan’s analysis was not correct.⁴⁷⁰ The rounded EVC for a
11 solution at the time of calibration does not matter when determining whether an instrument
12 actually has any bias.⁴⁷¹ The same goes for “the calibration factor [which is] not critical and not
13 relevant” in the determination of bias.⁴⁷² There are two reasons for this.

14 The first is due to the loss of information inherent in rounding the value of the solution to
15 three decimal places. When the EVC is reported out to four decimal places, the value in the
16 fourth place gives us important information.⁴⁷³ When we round that number to three places, we
17 lose that information.⁴⁷⁴ As a result, “rounding is going to introduce some error, some noise,
18 into the measurement.”⁴⁷⁵ When a DataMaster is calibrated utilizing this rounded value, it is

21 ⁴⁶⁷ Testimony of Dr. Logan, KC5, p.78.

⁴⁶⁸ Testimony of Dr. Logan, KC6, p.14-5.

⁴⁶⁹ Skagit Ex. 14.

22 ⁴⁷⁰ Testimony of Rod Gullberg, KC1, p.149; A1, p.80; Testimony of Rod Gullberg, A1, p.80.

⁴⁷¹ Testimony Rod Gullberg, A1, p.89; KC Ex. 3.

23 ⁴⁷² Testimony of Rod Gullberg, KC1, p.148.

⁴⁷³ Testimony of Dr. Logan, KC6, p.44.

⁴⁷⁴ Testimony of Dr. Logan, KC6, p.44.

24 ⁴⁷⁵ Testimony of Dr. Polissar, KC7, p.207.

1 given incomplete information.⁴⁷⁶ Thus, unless the fourth decimal place is 0, the DataMaster is
2 being calibrated to a value that has error built into it.⁴⁷⁷ An instrument calibrated using four
3 decimal places would yield more accurate results.⁴⁷⁸ Based on rounding alone, the uncertainty
4 in the calibration will be $\pm .0005$.⁴⁷⁹

5 The second reason is that, just as any other measurement process, a single point
6 calibration will have systematic and random error associated with it. This results from the fact
7 that “electronic considerations, environment temperatures, optics [and] a host of other variables
8 [] all impinge on calibration.”⁴⁸⁰ Thus, regardless of the value you enter into the DataMaster,
9 the instrument “may read it [as] something higher or less than that.”⁴⁸¹ The inescapable
10 conclusion is that “there is error built into the calibration.”⁴⁸²

11 As discussed above, calibration and the assessment of bias are two separate issues.⁴⁸³
12 One cannot rely on the cal factor⁴⁸⁴ to determine bias. Because of the error associated with a
13 single point calibration, one has no idea, without more, whether an instrument is biased or not.
14 In short, where the determination of bias is concerned, “the calibration value that you put in
15 there is almost irrelevant.”⁴⁸⁵

16 “Instead, one must “rely on the run of ten from the QAP or the run of ten measurements
17 in the field on a known field standard.”⁴⁸⁶ Thus, what is critical and relevant for purposes of
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19 ⁴⁷⁶ Testimony of Dr. Logan, KC6, p.45.

20 ⁴⁷⁷ The defense is not claiming that there is anything wrong with this. DataMasters are designed to be calibrated
using a solution reported out to three places. The only contention here is that rounding is a source of error in the
calibration process that must be checked for bias.

21 ⁴⁷⁸ Testimony of Dr. Logan, KC6, p.47.

22 ⁴⁷⁹ Testimony of Dr. Polissar, KC7, p.208-9.

23 ⁴⁸⁰ Testimony of Rod Gullberg, KC2, p.73-4.

24 ⁴⁸¹ Testimony of Rod Gullberg, KC2, p.72-73.

⁴⁸² Testimony of Dr. Logan, KC6, p.49

⁴⁸³ Testimony of Rod Gullberg, KC1, p.139.

⁴⁸⁴ Testimony of Rod Gullberg, KC2, p.77.

⁴⁸⁵ Testimony of Rod Gullberg, A1, p.89.

⁴⁸⁶ Testimony of Rod Gullberg, KC2, p.77; A1, p.89.

1 determining the impact of the software error discovered in August 2007 is:⁴⁸⁷

2 ...the mean of the ten measurements done on a known standard and what is the
3 bias there...That really evaluates the analytical properties and bias of the
4 instrument at that time. That tells me what – the acceptability of my calibration,
5 was it done acceptable or not, is it within 5 percent; and what is the bias, it might
6 be one or two or three percent. That tells me the properties of that instrument, not
7 what someone put in for a cal value.

8 Despite Logan's protestations to the contrary, there is no controversy concerning
9 Gullberg's conclusions or the ease with which bias can be adjusted for.⁴⁸⁸ Where a single point
10 calibration is performed utilizing a single method, it is universally recognized that the method
11 employed by Gullberg is the scientifically appropriate manner to determine the accuracy/bias of
12 a breath test instrument.⁴⁸⁹ It was Dr. Logan who testified that how a breath test is affected by a
13 particular type of error is something the State Toxicologist must know in order to do his job
14 competently.⁴⁹⁰ Nonetheless, despite the fact that he has been the State Toxicologist for 18
15 years, he admitted that he still doesn't find the concept of bias in breath testing a simple
16 matter.⁴⁹¹ Moreover, the methodology he employed in the August 2007 memo was,
17 scientifically speaking, meaningless.⁴⁹²

18 It is ironic that the memo which first alerted the Citizen's of this State to the technical
19 problems in the Toxicology Lab was wrong. It does not mean that the errors discussed are
20 without impact, however. As discussed above, the impact of an error as small as .0001 may be
21 very significant. What it does mean is that due to Logan's incompetence, the courts and
22 Citizen's of this State were told that the error acted on breath tests in a manner which it did not.

23 ⁴⁸⁷ Testimony of Rod Gullberg, KC1, p.148.

24 ⁴⁸⁸ As an example, throughout Europe, adjustments for bias are uniformly applied to every breath test result with little difficulty. Testimony of Dr. Logan, KC5, p.18-9.

⁴⁸⁹ CANADIAN SOCIETY OF FORENSIC SCIENCE ALCOHOL TEST COMMITTEE, *Recommended Standards and procedures of The Canadian Society of Forensic Science Alcohol Test Committee*, 36(3) SOC. FORENS. SCI. J. 101, 120-1 (2003); INTERNATIONAL ORGANIZATION OF LEGAL METROLOGY, *Breath Alcohol Analysers*, 17 (2006).

⁴⁹⁰ Testimony of Dr. Logan, KC4, p.164.

⁴⁹¹ Testimony of Dr. Logan, KC4, p.161.

⁴⁹² KC Ex. 3, p.5.

1 Moreover, it has been demonstrated that once these errors are analyzed correctly, tests Statewide
2 will be affected, not simply the handful originally claimed by Dr. Logan.

3 F. ADVOCACY OVER SCIENCE

4 Forensic Labs “hold a unique role in the balance of scientific principles, requirements of
5 the criminal justice system and the effects on the lives of individuals. The decisions and
6 judgments that are made in the laboratory must fairly represent all interests with which they have
7 been entrusted.”⁴⁹³ This means that the Toxicology Lab must represent the interests of both the
8 State and the Citizen charged with a crime equally.⁴⁹⁴

9 It has been well established by now that the reason Gordon committed perjury was so that
10 she would be able to go to court and testify for the prosecution if necessary. In fact, the sole
11 reason the software was reprogrammed in 2005 to accept more analysts was to ensure that there
12 would always be enough toxicologists to go in and testify for the prosecution if necessary.
13 Neither of these decisions had anything to do with science. And neither was done in a manner
14 consistent with proper scientific practices. Instead, proper scientific practice was ignored in
15 order to facilitate prosecutions against Citizens of this State.

16 That this was the mindset of the Lab should not come as a surprise. In an internal 2004
17 audit critical of the Lab’s practices, Sergeant Lankford concluded “that...successful case
18 prosecutions are top priorities for the lab...[while] policies and required procedures appear to be
19 of secondary concern to lab personnel.”⁴⁹⁵ Logan confirmed this in his September 2007 memo
20 to the Governor, explaining that:⁴⁹⁶

21 “Management focus was highly attuned to customer needs, which were
22 successful. However, this was not balanced with attention to internal controls and

23 ⁴⁹³ AMERICAN SOCIETY OF CRIME LAB DIRECTORS, *Lab International Accreditation Program*, 4 (2006).

⁴⁹⁴ Testimony of Dr. Logan, KC4, p.147.

⁴⁹⁵ Skagit Ex. 37 (Internal Audit by the Washington State Patrol, 2004).

⁴⁹⁶ KC Ex. 109, p.3-4.

1 agency policy compliance.”

2 The conclusion is clear: the Toxicology Lab placed advocacy over science. Indeed,
3 through deceit, carelessness and reckless disregard for proper scientific procedures, it placed
4 advocacy over the truth itself. And in the process, the Lab has victimized not only those
5 Citizen’s who have been charged with crimes. It has victimized prosecutors, judges, the officers
6 working to keep our highways safe and the justice system itself.

7 G. NERO’S FIDDLE

8 In addition to the software error and the two programming errors, together effecting
9 thousands of tests Statewide, Gullberg and Denton have documented at least 150 nonsoftware
10 related issues effecting thousands of others. Setting aside considerations of perjury and
11 conspiracy, Gullberg and Denton attributed all of these errors to carelessness and
12 complacency.⁴⁹⁷ “This whole process has revealed several shortcomings or problems...just lack
13 of care to detail.”⁴⁹⁸

14 A tally of the tests affected that are quantified above includes:⁴⁹⁹

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Solution	# of tests affected	Error
02018	2,018	Mixing up solutions/ wrong EVC (Field solution)
02019	7,928	Mixing up solutions/ wrong EVC (QAP solution)
05008	1,679	AMG perjury/ AC outside QAP cert. range (Field solution)
06003	392	Field solution used for QAP/ AC outside QAP cert. range (Field Solution)
06028	3,445	Data discarded/ wrong EVC (QAP solution)
06037	2,691	Software error/ wrong EVC (QAP solution)
06048	21	Programming error (12→16)/ AC outside QAP cert. range (Field Solution)
Total	18,174	

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21 This does not include those tests performed utilizing solution 06043 or 07031, both
22 discussed above, or a count of those tests near a .02, .04, .08 or .15 that were affected. Nor does

23 ⁴⁹⁷ Testimony of Rod Gullberg, KC2, p.17; Testimony of Trooper Denton, KC3, p.42.

⁴⁹⁸ Testimony of Rod Gullberg, KC2, p.209.

24 ⁴⁹⁹ This is not an exhaustive count. It is merely what the defense has been able to discover to date.

1 it take into consideration those tests, regardless of BAC level, where the question of whether the
2 external standard fell between .072 - .088 or two test were within ± 10 mean might be crucial.
3 These and other examples are yet to be counted.

4 To perform its proper function, the Breath Test Section needs to know the correct EVC of
5 a solution.⁵⁰⁰ “If you want to get down to the level for adjusting for bias, then these are
6 important errors that we’ve talked about.”⁵⁰¹ To move forward, we need “better confidence in
7 the reference now that all these errors have been taken into account.”⁵⁰² According to
8 Gullberg:⁵⁰³

9 The thing that this has revealed [] is our reference value from the tox lab. I want
10 to be confident in that. And I’ve got to recheck their results, or in some way,
11 enhance my confidence that my reference is correct because when we correct a
12 result or determine bias, that’s the value we’re talking about from the tox lab.
13 That affects any correction that’s made.

14 While many of the issues identified still persist, the Toxicology Lab continues to peddle
15 its snake oil in any courtroom that will permit it to do so.

16 At each hearing on these issues, Dr. Logan has proclaimed that he has fixed all the
17 problems plaguing his program. And after each hearing, he enacts new protocols to address the
18 issues he testified didn’t exist. Between August and December of 2007, he amended the
19 protocols governing the certification of both Field and QAP solutions three times. He had done
20 so only once in the prior three years. Perhaps the following issues will be corrected in the next
21 protocols to be issued.

22 1. CONTINUING PROBLEM OF MEANS ACROSS MACHINES

23 In “correcting” the certification calculations, Gullberg utilized the arithmetic, as opposed

24 ⁵⁰⁰ Testimony of Rod Gullberg, KC1, p.38.

⁵⁰¹ Testimony of Rod Gullberg, KC2, p.155.

⁵⁰² Testimony of Rod Gullberg, KC2, p.87.

⁵⁰³ Testimony of Rod Gullberg, KC2, p.82.

1 to the weighted, mean because Logan told him that that was the way the Lab had always done
2 it.⁵⁰⁴ Thus, all of Gullberg's mathematical "corrections" are the result of doing nothing more
3 than taking the data contained in the worksheets and plugging it into the same algorithms
4 implemented by Destefano. As he put it, his role: "was more a matter of confirming correct data
5 recording from the original chromatogram documents to the summary page."⁵⁰⁵ Moreover, in an
6 apparent act of defiance, Dr. Logan has explicitly mandated in the latest protocols that an
7 arithmetic mean be used.⁵⁰⁶ Accordingly, Gullberg's "corrections" to the certification statistics
8 have failed to fix anything for the 94.4% of solutions certified on multiple chromatographs.
9 Even the "corrected" values cannot, in general, be expected to be correct.

10 2. THE OUTLIERS

11 Much of the discarded data has now been reviewed and some of it was properly rejected.
12 On the other hand, it has now been confirmed that some of it should not have been thrown out.
13 There were no outliers in Lisa Noble's data for 06028. While Gross' data for 07023 did contain
14 an outlier, the only value that should have been discarded was the outlier itself, not the entire set.
15 And although these problems have been identified, there has been no attempt to do anything
16 about it.

17 This is particularly disturbing in the case of solution 06028. Noble's rejection of valid
18 data resulted in a change in bias of .0015. This yielded an error of 1.85%, far greater than what
19 would otherwise be considered forensically indefensible. Even ignoring the effect this change in
20 bias would have on the results of a Citizen's breath test, substitution of the correct EVC reveals

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22 ⁵⁰⁴ Testimony of Rod Gullberg, A1, p.92.

⁵⁰⁵ Testimony of Rod Gullberg, A1, p.92.

23 ⁵⁰⁶ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of .08 Simulator External*
Standard Solution For Use With A Breath Test Instrument, G3 (12/18/2007); WASHINGTON STATE TOXICOLOGY
24 LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test*
Instrument, G3 (12/18/2007).

1 that three different DataMasters were so out of calibration that they could not have passed a valid
2 QAP and should not have been deployed in the field.

3 Thus, the Lab's review has not solved the problems surrounding discarded data.

4 3. BREATH TEST SAFEGUARDS AND TROUBLESOME REALITY

5 The State has repeatedly claimed that the Gullberg/Denton review revealed that none of
6 the errors detailed above violated the Toxicologist's protocols. This is false.

7 We know that solutions 05008, 06003 and 06048 were utilized to QAP DataMasters even
8 though, for one reason or another, their ACs fell outside the range required for a valid QAP
9 solution. We know that solution 06043 was certified using data that, under the protocols, should
10 have been discarded because the ISTD area of the internal control was indicative of a stuck
11 injector needle. We know that in the certification of every field solution for at least the past two
12 years, software failed to include all analysts' data in computations as required by the protocols.
13 In short, we know that the protocols have been violated.

14 The State has also claimed that despite these violations, the QAPs performed by the
15 Breath Test Section insure us that breath tests are accurate. This is also false.

16 As discussed above, the breath test technicians rely completely on the accuracy of the
17 certifications produced by the Toxicology Lab.⁵⁰⁷ If those certifications present incorrect
18 information, then the mistake will infect the QAP process leading to incorrect results.⁵⁰⁸ This
19 leads to the troubling realization that: every one of the impacts discussed above and every test
20 tainted by use of improperly certified simulator solutions, involved a DataMaster that had passed
21 its QAP.⁵⁰⁹ The fact that a machine has passed a QAP does not stop errors, carelessness and
22 improper scientific practices in the Toxicology Lab from affecting individuals' breath test results

23 ⁵⁰⁷ Testimony of Ken Denton, KC3, p.154; Testimony of Rod Gullberg, KC1, p.27.

24 ⁵⁰⁸ Testimony of Ken Denton, KC3, p.154.

⁵⁰⁹ Testimony of Ken Denton, KC3, p.154.

1 in a material way.⁵¹⁰

2 In fact, we know that these errors can result in DataMasters being approved for use in the
3 field by the QAP process when they should not be, and in such a manner that it would escape
4 notice.⁵¹¹ Consider, for example, solution 06028. We know that three DataMasters QAP'd with
5 this solution were sent into the field that, had the correct EVC been utilized to determine bias,
6 would have failed QAP requirements for accuracy. These instruments should not have been used
7 to administer breath tests on.⁵¹²

8 The State's final refuge is that the actual testing procedures required by statute ensure
9 accurate test results. Again, this is false.

10 All we need to consider to understand this is the requirement that the result for the
11 external standard lie between .072 - .088. Although this "is an assessment of accuracy...it's a
12 general one...within the general range."⁵¹³ It does not mean that bias or the errors discovered in
13 the Toxicology Lab will not impact an individual's test.⁵¹⁴ To the contrary, as explained by
14 former Sergeant Gullberg:⁵¹⁵

15 ...if you want to know to what extent does this instrument have a bias, plus or
16 minus, that requires evaluation of several simulator results on that instrument
17 from which I would calculate a mean. I would look at the tox lab value for that
18 standard, and determine, is this instrument reading high or low? What is it? Then
19 I would need to adjust that person's results accordingly.

20 Moreover, as demonstrated above, whether or not the external standard actually lies
21 between .072 - .088 or two breath samples lie within $\pm 10\%$ of their mean can be changed as the
22 result of substituting a corrected solution EVC or adjusting for bias.

23 ⁵¹⁰ Testimony of Ken Denton, KC3, p.154; Testimony of Rod Gullberg, A1, p.73-4.

24 ⁵¹¹ Testimony of Ken Denton, KC3, p.156.

⁵¹² Testimony of Ken Denton, KC3, p.156.

⁵¹³ Testimony of Rod Gullberg, KC2, p.85, 99, 212-3.

⁵¹⁴ Testimony of Rod Gullberg, KC2, p.212-3.

⁵¹⁵ Testimony of Rod Gullberg, KC2, p. 212-3, 85, 99.

1 The point is this: regardless of whether or not the solutions are in compliance with the
2 protocols, a DataMaster has been QAPd or a test performed in accordance with statutory
3 requirements, the Labs errors can significantly affect a Citizen's test results and liberties.

4 4. A QUESTION OF BIAS

5 The breath test results in Washington are reported "without adjusting them for bias."⁵¹⁶
6 Even absent the aforementioned errors, the State's failure to account for bias in the reporting of
7 breath test results renders any value reported questionable.

8 "There's uncertainty in every measurement... virtually always some degree of bias, but
9 that's okay as long as...it can be corrected for."⁵¹⁷ For example, both Gullberg and Breath Test
10 Technician Elizabeth McCourt⁵¹⁸ have testified on a number of occasions that despite the fact
11 that a breath test may yield two samples in excess of .08, the true value may in fact be more
12 likely than not less than .08.⁵¹⁹ "We need to acknowledge there's uncertainty in every
13 measurement, and bias is part of that uncertainty."⁵²⁰ Unfortunately, many attorneys may not be
14 aware, or have a sufficient understanding, of the concepts involved to look into such issues.⁵²¹
15 And the ordinary Citizen would be expected to be even less well versed in these matters.⁵²²

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19 ⁵¹⁶ Testimony of Dr. Logan, KC5, 10-1.

20 ⁵¹⁷ Testimony of Rod Gullberg, KC2, p.65.

21 ⁵¹⁸ Technician McCourt testified in Snohomish County District Court on October 31 in the matter of State v.
22 Michael Lang, C616184WSP (2007).

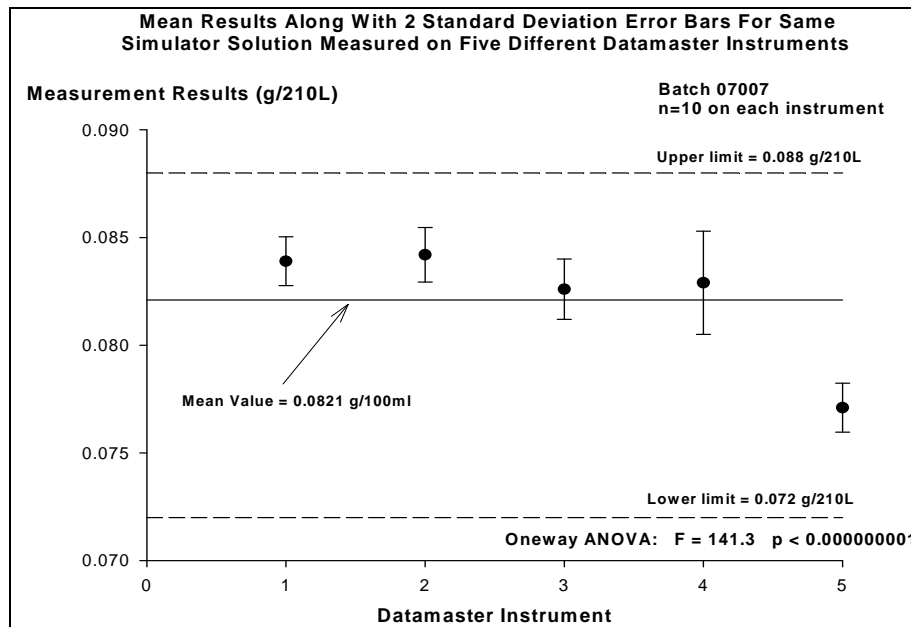
23 ⁵¹⁹ See, for example, *DoL v. Herrmann*, # HERRMJP299BJ (2004). Motorist had test results of .080 and .081.
24 Using measurements of the field solution found in the DataMaster database, Gullberg testified that the instrument in
question had a field bias and that it was actually more likely than not (56.75% likelihood) that the motorist's true
BAC was below a .08. The DataMaster and solution were all in compliance with the protocols. This simply
demonstrates that despite whether or not all the protocols have been followed, small errors can have serious
consequences for Citizens.

⁵²⁰ Testimony of Rod Gullberg, KC2, p.78.

⁵²¹ Testimony of Rod Gullberg, KC2, p.83.

⁵²² Testimony of Rod Gullberg, KC2, p.90.

1 In case it has not been made clear yet, Figure 5 illustrates the impact a biased instrument
2 can have.⁵²³



12 **Figure 5**

13 This figure was created by Rod Gullberg as a typical example in Arnston. Ten external
14 standard measurements were taken by each of five different DataMasters of a single simulator
15 solution (07007). The mean values reported by these different instruments ranges from just over
16 a .084 down to approximately a .077. This represents a difference of .007! The difference is
17 statistically significant “meaning that that variation is very unlikely to be random.”⁵²⁴ More
18 importantly, it is judicially significant. Whereas on one of these machines an individual might
19 be reported as a .080 and deemed guilty of a per se offence, on a different machine the same
20 individual would be reported as a .073 and perhaps sent on his merry way.

21 In light of the potential impact that machine bias can have, Gullberg agreed that although
22 it is not the current practice in Washington, in the State’s case “it should be discussed and [be]

23 ⁵²³ Arnston Ex. 73.

24 ⁵²⁴ Testimony of Dr. Nayak Polissar, KC7, p.234.

1 part of presentation of the evidence.”⁵²⁵

2 What is so perplexing about the State’s failure to do adjust for bias is that the
3 DataMasters can be programmed to correct for it automatically.⁵²⁶ “The instrument could do
4 it...there’s the capability and technology to internally do this, and print out the corrected
5 result.”⁵²⁷ “It could be done in the existing instruments we employ” and would not be
6 prohibitively costly to implement.⁵²⁸

7 5. SHUNNING PERSONAL RESPONSIBILITY

8 Dr. Logan’s pattern of shunning personal responsibility for the Lab’s current state has, as
9 the pundits might say, trickled down. Time and again, toxicologists failed to follow basic
10 scientific practices and even simple common sense, giving the excuse that no one told them they
11 had to.

12 Sarah Swenson, like all the other remaining analysts, was made aware of the solution
13 calculation errors and required to verify and sign off on the Gullberg/Denton “corrections”.
14 Nonetheless, although recognizing that part of her job duties are to inform others whether a
15 solution satisfies the protocols, she testified that she has still never bothered to check whether
16 any of the certification calculations are correct “because it is not part of [her] job duties.”⁵²⁹ In
17 fact, she indicated that she doesn’t even know whose job it is to ensure that the values she
18 testifies to are correct.⁵³⁰

19 Brian Capron is another. When asked whether it is appropriate to rely on secretaries to
20 ensure the accuracy of the data he is reporting he responded.⁵³¹

21 _____
22 ⁵²⁵ Testimony of Rod Gullberg, KC2, p.79; Testimony of Rod Gullberg, A1, p.79-80.

23 ⁵²⁶ Testimony of Rod Gullberg, KC2, p.91-2.

24 ⁵²⁷ Testimony of Rod Gullberg, KC2, p.89.

⁵²⁸ Testimony of Rod Gullberg, KC2, p.91-2.

⁵²⁹ Testimony of Sarah Swenson, S2, p.74.

⁵³⁰ Testimony of Sarah Swenson, S2, p.74-5.

⁵³¹ Testimony of Brian Capron, S1, p.136.

1 You know, I guess this is a tough question to answer because I don't, you know
2 there was never any procedure that said that a scientist had to do, had to generate
3 this, or to do that.

4 These are just two examples of an attitude that is endemic throughout the Lab. Unless
5 the toxicologist's are explicitly told to do or check something, or even exercise ordinary care,
6 they simply fail to do so.

6 6. DECLARATIONS AND THE CONTINUING DISREGARD FOR TRUTH

7 Even in the wake of the Lab's public meltdown, the Lab's toxicologists' continue to
8 display the same careless disregard for the truth.

9 Solution certification declarations are relied upon by courts, prosecutors and the
10 Department of Licensing in lieu of live testimony and by defense attorneys and Citizens as part
11 of discovery.⁵³² CrRLJ 6.13. Accordingly, if there are wrong values reported in a declaration it
12 must be corrected.⁵³³ Nonetheless, Gullberg and Denton were not asked to review the
13 toxicologists' declarations for accuracy.⁵³⁴ When they check off on their review that a
14 certification has been reviewed and is correct, the declarations were not included in the
15 review.⁵³⁵

16 Despite the fact that declarations are not checked for correctness, after a solution has
17 been reviewed, the toxicologists are required to resign their declaration. Amazingly, part of the
18 expectation in having analysts resign them is so that those who would ordinarily rely on them
19 can have confidence that they are accurate.⁵³⁶ The confidence would be misplaced, though,
20 because the instructions given by Dr. Logan ensured that the accuracy of the declarations was not
21

22 ⁵³² Testimony of Trooper Denton, KC3, p.128; Testimony of Dr. Logan, KC5, p.32-3.

23 ⁵³³ Testimony of Dr. Logan, KC5, p.184.

24 ⁵³⁴ Testimony of Rod Gullberg, KC1, p.57, 64-5.

⁵³⁵ Testimony of Rod Gullberg, KC1, p.58.

⁵³⁶ Testimony of Dr. Logan, KC5, p.184; Testimony of Rod Gullberg, KC1, p. 65-6.

1 something Gullberg and Denton were particularly concerned about.⁵³⁷

2 As discussed above, declarations for QAP solutions 06042, 06044, 06045, 06046 and
3 06047, were all originally signed in 2006 by several different analysts. Among these analysts
4 were Lisa Noble, Dr. Nuwayhid and Ed Formoso. The problem is that each declaration reported
5 the wrong alcohol concentration for the solution in question. Because this was not something
6 that Gullberg and Denton were asked to review, the errors went undetected by them. As a result,
7 when the declarations were returned to Nuwayhid and Noble to resign in October 2007, they still
8 contained the original errors.

9 It was reasonable to hope that in the wake of the growing scandal, at the very least the
10 toxicologists would have learned to exercise care when signing off on their work. Alas, this may
11 have been too much to hope for. Noble resigned the declaration for solution 06042 without
12 checking the solution spreadsheet to ensure its accuracy. And Dr. Nuwayhid did the same thing,
13 signing off on all 5 without making any effort to ensure that they were correct. And as a result,
14 they all still report the wrong alcohol concentration for the solutions.

15 This reckless disregard for the truth is not confined to the certifications themselves,
16 however. In an attempt to demonstrate that the data discarded by Noble for solution 06028 was
17 done so properly, the State had her submit a declaration.⁵³⁸ In the declaration she claims to have
18 prepared the solution and drawn a sample for testing by her and the other analysts in the Lab.
19 She then claims to have originally tested the solution on the 14th of the month. Based on the
20 values returned, she claimed that she determined that the sample was from unmixed solution in a
21 spigot providing “assignable cause” to reject the data. She then claimed to have replaced the
22 entire sample with a well mixed sample for testing by the rest of the analysts.

23 _____
24 ⁵³⁷ Testimony of Rod Gullberg, KC1, p. 65.

⁵³⁸ KC Ex. 122.

1 The problem begins with the fact that her chromatographs clearly demonstrate that she
2 tested her original sample on the 11th.⁵³⁹ Moreover, it was clear from the other analysts'
3 chromatographs that they had tested their solutions before she had. The fact that their results,
4 drawn from the same sample hers was, showed no signs of coming from an unmixed sample
5 demonstrated conclusively that Noble's explanation for rejecting her data had to be wrong.⁵⁴⁰
6 Noble admitted this. Had counsel not demanded to cross-examine Noble on the declaration, her
7 explanation would have been deemed fact.

8 That said, the discovery took no special technical expertise. A simple inspection of the
9 test documents before swearing "under penalty of perjury" that something was true is all that was
10 required to discover that it was not. Nor can Noble claim not to have had sufficient notice that
11 her and her colleagues Lab practices were what was being questioned. Her declaration was
12 signed December 20, 2007, well after the causes and implications of the Toxicology Lab scandal
13 had become public. Nonetheless, she swore under penalty of perjury that something was true
14 when even a little care would have demonstrated to her that it was not.

15 7. $f du \cdot 10^5 Pa = ?$

16 In an attempt to avoid responsibility for the impact that the Lab's errors have had on
17 motorists around the State, Logan has stated that:⁵⁴¹

18 all the data has been posted on the web site for the last three or four years, so
19 anybody could have in theory gone back and done one of those calculations and
20 identified the fact that there was an error there.

21 Theory indeed.

22 As was made clear in Skagit, most of the toxicologists in the Lab don't even know the

23 ⁵³⁹ Testimony of Lisa Noble, KC6, p.102.

24 ⁵⁴⁰ Testimony of Lisa Noble, KC6, p.107-8.

⁵⁴¹ Testimony of Dr. Logan, S3, p.57.

1 math involved.⁵⁴²

2 Trooper Denton admitted that although it is part of his job and he had done so only days
3 earlier, he is not capable of calculating a simple standard deviation or CV without notes to look
4 at.⁵⁴³ In fact, Denton's lack of mastery over these basic concepts was such that he misinformed
5 the King County Court as to the effect of a changing mean on the CV until he was corrected by
6 defense counsel.⁵⁴⁴

7 While Logan is "able to do simple calculations involving subtraction and division and
8 multiplication, which is all that [is] required" for some purpose,⁵⁴⁵ he "would not attempt to
9 calculate the standard deviation on the stand."⁵⁴⁶ Moreover, there is his complete lack of
10 understanding concerning the proper manner in which to determine and adjust for bias that was
11 discussed above. Even if one were to give him the benefit of the doubt as understanding the
12 concepts involved as well as Gullberg, the two of them completely disagree on the proper way to
13 do so.

14 Logan's justification that anybody could go back and do the calculations necessary to
15 identify errors and correct their test is clearly unreasonable. And it will remain so until the
16 officials whose jobs it is to actually know this stuff figure out how to do so without having to
17 rely on cheat sheets to give them the answers or can even agree on what the correct way to
18 analyze a breath test is. The Citizens of the State of Washington have a right to expect that
19 much. At least in theory.

22 ⁵⁴² Testimony of Justin Knoy, S1, p.69; Testimony of Brian Capron, S1, p.102; Testimony of Melissa Pemberton,
S1, p.146.

23 ⁵⁴³ Testimony of Trooper Denton, KC3, p.32-3, 49-50.

⁵⁴⁴ Testimony of Trooper Denton, KC3, p.147, 151.

⁵⁴⁵ Testimony of Dr. Logan, KC5, p.78.

24 ⁵⁴⁶ Testimony of Dr. Logan, KC6, p.14.

1 8. UNCLEANSED SINS

2 Although Gullberg commanded those in the breath test section to cease using all
3 solutions with Gordon's signature on them, for some reason his "corrections" still include the
4 data Gordon falsely claimed to have tested. Hence, the taint of perjury has not yet been removed
5 nor the effects the perjured data has on the values reported in the solution certifications. Until
6 Gordon's perjured data is removed, Gullberg's "corrections" cannot possibly be considered fixes
7 as they are not an honest determination of the mean of any solution Gordon's perjury is still
8 being relied upon to compute.

9 9. THE UNRAVELING QUILT

10 As early as July 26, 2007, Rod Gullberg instructed all breath test technicians that they
11 "need[ed] to remove and avoid using simulator solution batch numbers that [Ann Marie Gordon]
12 attached her signature to."⁵⁴⁷ The latest solution referred to was the last signed by Gordon,
13 07007.

14 Later, during testimony in the October Skagit County hearings, some of the Lab's own
15 analysts began to jump ship. In light of the hundreds of errors then known, neither toxicologist
16 Knoy nor Capron would swear that the statistics on even the "corrected" certifications that they
17 had gone in and resigned were correct.⁵⁴⁸ For Knoy, the specific certifications in question were
18 07019, 07020, 07021 and 07022.⁵⁴⁹ Capron's testimony applied to any certifications then in
19 effect, the latest at that point being 07049.

20 Finally, in December, a consensus developed within the Breath Test Section, and a
21 recommendation was made to King County prosecutors, that they should at least consider
22

23 ⁵⁴⁷ KC Ex. 2; Testimony of Rod Gullberg, KC1, p.24.

24 ⁵⁴⁸ Testimony of Justin Knoy, S1, p.97-8; Testimony of Brian Capron, S1, p.134, 136, 139.

⁵⁴⁹ Testimony of Justin Knoy, S1, p.97.

1 suppressing all breath tests involving solutions 07025 and earlier.⁵⁵⁰ According to Trooper Ken
2 Denton:⁵⁵¹

3 ...there was a consensus among us that maybe it would be better to wipe the slate
4 clean, and we should maybe talk to the prosecutors, which we did, about moving
5 over from 07025 on...[recommending that the prosecutors] should look at it
6 closely because this is a black eye, it doesn't look good, and perhaps we're better
7 moving on with a clean slate from this point forward.

8 10. DOWSING THE FLAMES

9 So is there light at the end of the tunnel? The breath test section views all solutions from
10 07025 back as giving the program a black eye. Solution 07031 should have been completely
11 rejected under the protocols but instead is still in the field serving as an external standard for
12 breath tests. Certain toxicologists refuse to swear to the accuracy of solutions up thru at least
13 07049. And other toxicologists are still signing declarations under penalty which, because they
14 still don't understand the importance of insuring such things are correct, are actually wrong.

15 Thru the smoke there is a glimmer, however:⁵⁵²

16 When the issues with [the Lab's] simulator solutions came to light, [it] requested
17 an audit...[to] make sure the changes [it was] anticipating making were the right
18 kind of changes. That was done by ASCLD-LAB Consulting, which...provides
19 consulting services according to ASCLD-LAB standards...It was a means to find
20 subject matter expertise to bring in to review [the Lab's] program.

21 The September ASCLD audit was very critical of the Lab's solution certification process
22 and of the management of the breath test program in general.⁵⁵³ Nonetheless, it set forth a
23 number of bench marks for the Lab to meet if it desired to fix the problems with its program.⁵⁵⁴

24 The Lab replied with a long list of remedial measures it intended to implement to meet those

22 ⁵⁵⁰ Testimony of Trooper Denton, KC3, p.175.

23 ⁵⁵¹ Testimony of Trooper Denton, KC3, p.175-6.

24 ⁵⁵² Testimony of Dr. Logan, KC4, p.61, 93.

⁵⁵³ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit).

⁵⁵⁴ Testimony of Dr. Logan, KC5, p.48; KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit and Grid Response).

1 benchmarks.⁵⁵⁵ ASCLD concluded that “when the responses are fully implemented that
2 they...are acceptable”⁵⁵⁶ and that [the Lab] will attain compliance.⁵⁵⁷

3 Some of the necessary measures were implemented as early as October 5, 2007.⁵⁵⁸ If
4 these measures are deemed sufficient to restore credibility to the work done by the Lab, that
5 means that tests and QAPs performed utilizing solutions after this date would be acceptable. The
6 first solution prepared after this date is 07056.

7 It must be remembered, however, that the primary measure being implemented to address
8 the Lab’s problems is to become accredited to ISO compliant standards.⁵⁵⁹ These are, after all,
9 the standards applied by the ASCLD/LAB program.⁵⁶⁰ And accreditation would require
10 compliance with ISO standards.⁵⁶¹

11 According to Logan there is good reason for this requirement. “[T]he general principals
12 of ISO 17025 are goals that laboratories ought to be working towards.”⁵⁶² Accreditation to these
13 standards:⁵⁶³

14 Ensure[s] you are applying standards and principals of practice that are consistent
15 with the norms within the forensic toxicology community. That you are
16 performing tests according to the appropriate kinds of standards...All of the
17 things that give you confidence in the results that the laboratory produces.

18 Should a Citizen whose liberties are being threatened by the State be forced to accept
19 anything less?

20 Given the work that still needs to be done by the Lab, accreditation to ISO standards will

21 ⁵⁵⁵ Testimony of Dr. Logan, KC5, p.48; KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit – Grid
Response).

22 ⁵⁵⁶ Testimony of Dr. Logan, KC5, p.48.

23 ⁵⁵⁷ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit – Grid Response, p.1-10).

24 ⁵⁵⁸ KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit – Grid Response, p.1-10).

⁵⁵⁹ Testimony of Dr. Logan, KC4, p.84-5, 178; KC Ex. 69 (2007 ASCLD Simulator Solution Certification Audit –
Grid Response, p.2-3, 10).

⁵⁶⁰ Testimony of Dr. Logan, KC4, p.77-8.

⁵⁶¹ Testimony of Dr. Logan, KC4, p.82-3, 85, 179; KC5 14-5.

⁵⁶² Testimony of Dr. Logan, KC4, p.82.

⁵⁶³ Testimony of Dr. Logan, KC4, p.177-8.

1 not be achieved until July, 2008, just about six months from now.⁵⁶⁴ At a minimum, “[w]hat [the
2 Lab’s] committed to doing by July of 2008 is to be employing at least some of their
3 standards.”⁵⁶⁵ Given the issues surrounding bias and uncertainty, this is critical because:⁵⁶⁶

4 the ISO requirements will require [the Lab] to develop an uncertainty budget, and
5 that means you take any estimate of error based on the value of simulator
6 solution, the calibration of the instrument, of the performance of external standard
7 performance, of the internal standard, presumably some other factors, possibly
8 contributions from acetone below the acetone threshold for the instrument. And
9 you add all those possible sources of error in the appropriate statistical manner,
10 and it gives you 95 percent confidence for the test.

11 And why has the Toxicology Lab failed to adhere to these standards concerning the
12 reporting of test up till now? According to Dr. Emery:⁵⁶⁷

13 They need to be educated. What they're doing is the simplest way. And as long
14 as people were not really concerned with high precision and high accuracy, it
15 really didn't make much difference...I think that when you now look at the
16 forensic labs saying that we want to go for ISO standardization, they are trying to
17 pull themselves up to a higher level of reporting, higher level of statistical
18 competence in what they do.

19 “If the citizens of the State of Washington are to have any confidence in the breath-
20 testing program, that program has to have some credence in the scientific community as a
21 whole.” *Clark-Munoz*, 152 Wn.2d at 47. And if their liberties are to be threatened by anything
22 other than snake oil science, compliance with recognized standards is required. While the Court
23 can choose solution 07026, 07049 or 07056 as the point at which breath tests will begin seeing
24 the light of day again, if prosecutions in this State are to be based on sound scientific principles,
some showing of compliance with appropriate ISO standards should be required first.

⁵⁶⁴ Testimony of Dr. Logan, KC4, p.94, 145, 179; KC5, p.16.

⁵⁶⁵ Testimony of Dr. Logan, KC5, p.16.

⁵⁶⁶ Testimony of Dr. Logan, KC5, p.13.

⁵⁶⁷ Testimony of Dr. Ashley Emery, KC7, p.62.

1 **IV. ARGUMENT**

2 “Preservation of the individual citizen’s confidence in government is [of the highest]
3 important[ce].” *Bellotti*, 435 U.S. at 789.

4 “If the citizens of the State of Washington are to have any confidence in the breath-
5 testing program, that program has to have some credence in the scientific community as a
6 whole.” *Clark-Munoz*, 152 Wn.2d at 47.

7 “The most important consideration for [the Court] now is the preservation of the integrity
8 of the criminal justice system. We must handle these [] cases now before us in such a fashion
9 that the public, the defense bar, the prosecuting attorneys, and the courts of Washington will
10 clearly understand that we will not tolerate criminal convictions based on tainted evidence, but
11 will insist upon proper standards of conduct and procedure.” *Roche*, 114 Wn.App. at 446.

12 A. DUE PROCESS FORBIDS THE USE OF FALSE EVIDENCE AND PERJURY

13 “No person shall be deprived of life, liberty, or property, without due process of law.”
14 WASH. CONST. art. 1, § 3; U.S. CONST. amend. XIV. Due Procoess represents “a profound
15 attitude of fairness between man and man, and more particularly between the individual and
16 government.” *Joint Anti-Fascist Refugee Committee v. McGrath*, 341 U.S. 123, 162, 71 S.Ct.
17 624 (1951). In fact, “fair play...is the essence of due process.” *Galvan v. Press*, 347 U.S. 522,
18 530, 74 S.Ct. 737 (1954). “A citizen has the right to expect fair dealing from his government.” *S*
19 *& E Contractors, Inc. v. U. S.*, 406 U.S. 1, 10, 92 S.Ct. 1411 (1972). Accordingly, “[d]ue
20 process requires governments to treat citizens in a fundamentally fair manner.” *Valley View*
21 *Indus. Park v. City of Redmond*, 107 Wn.2d 621, 636 (1987); *Quill Corp. v. North Dakota By*
22 *and Through Heitkamp*, 504 U.S. 298, 312, 112 S.Ct. 1904 (1992). Even simple indifference to
23 such fairness may offend due process. *County of Sacramento v. Lewis*, 523 U.S. 833, 850-2, 118

1 S.Ct. 1708 (1998).

2 Securing an individual's due process rights is an undertaking "inescapably involving the
3 exercise of judgment by [the judiciary] whom the Constitution entrusted with the unfolding of
4 the process." *McGrath*, 341 U.S. at 163 (Emphasis added).

5 "As applied to a criminal trial, denial of due process is the failure to observe that
6 fundamental fairness essential to the very concept of justice." *Lisenba v. People of State of*
7 *California*, 314 U.S. 219, 236, 62 S.Ct. 280 (1941). This encompasses those "fundamental
8 conceptions of justice which lie at the base of our civil and political institutions and which define
9 the community's sense of fair play and decency." *U. S. v. Lovasco*, 431 U.S. 783, 790, 97 S.Ct.
10 2044 (1977)(*citations omitted*); *Brown v. State of Mississippi*, 297 U.S. 278, 286, 56 S.Ct. 461
11 (1936). In making this determination, the Court looks "not only to historical practice, but also to
12 the logical implications of a basic principle of fairness." Jerold Israel, *Free-Standing Due*
13 *Process and Criminal Procedure: The Supreme Court's Search for Interpretive Guidelines*, 45
14 ST. LOUIS L.J. 303, 423 (2001)(citing, *Medina v. California*, 505 U.S. 437, 445-6, 112 S.Ct. 2572
15 (1992)). "That requirement, in safeguarding the liberty of the citizen against deprivation through
16 the action of the state, embodies the fundamental conceptions of justice which lie at the base of
17 our civil and political institutions." *Mooney v. Holohan*, 294 U.S. 103, 112 55 S.Ct. 340 (1935).

18 "A fair trial in a fair tribunal is a basic requirement of due process." *State v. Moreno*, 147
19 Wn.2d 500, 507 (2002). This "requirement [however] cannot be deemed to be satisfied by mere
20 notice and hearing if a state has contrived a conviction through the pretense of a trial which in
21 truth is but used as a means of depriving a defendant of liberty through a deliberate deception of
22 court and jury by the presentation of testimony known to be perjured." *Holohan*, 294 U.S. at
23 112. The "deliberate deception of a court and jurors by the presentation of known false evidence

1 is incompatible with ‘rudimentary demands of justice.’” *Giglio v. U.S.*, 405 U.S. 150, 153, 92
2 S.Ct. 763 (1972).

3 “The principle that a State may not knowingly use false evidence, including false
4 testimony, to obtain a tainted conviction [is] implicit in any concept of ordered liberty.” *Napue*
5 *v. Illinois*, 360 U.S. 264, 269, 79 S.Ct. 1173 (1959). “It is fundamentally unfair for a prosecutor
6 to knowingly [do so].” *U.S. v. LaPage*, 231 F.3d 488, 491 (9th Cir. 2000). “Such a contrivance
7 by a state to procure the conviction and imprisonment of a defendant is as inconsistent with the
8 rudimentary demands of justice as is the obtaining of a like result by intimidation.” *Holohan*,
9 294 U.S. at 112. “[A] conviction obtained through use of false evidence, known to be such by
10 representatives of the State, must fall under the Fourteenth Amendment.” *Napue*, 360 U.S. at
11 269; *Franks v. Delaware*, 438 U.S. 154, 169, 98 S.Ct. 2674 (1978); *Alcorta v. State of Tex.*, 355
12 U.S. 28, 31-2, 78 S.Ct. 103 (1957).

13 “The same result obtains when the State, although not soliciting false evidence, allows it
14 to go uncorrected when it appears.” *Napue*, 360 U.S. at 269. In fact:

15 A prosecutor's “responsibility and duty to correct what he knows to be false and
16 elicit the truth,” requires a prosecutor to act when put on notice of the real
17 possibility of false testimony. This duty is not discharged by attempting to finesse
18 the problem by pressing ahead without a diligent and a good faith attempt to
19 resolve it. A prosecutor cannot avoid this obligation by refusing to search for the
20 truth and remaining willfully ignorant of the facts.

18 *Commonwealth of Northern Mariana Islands v. Bowie*, 243 F.3d 1109, 1117-8 (9th Cir. 2001);
19 *Morris v. Ylst*, 447 F.3d 735, 744 (9th Cir. 2006); Cf., *U. S. v. Agurs*, 427 U.S. 97, 103, 96 S.Ct.
20 2392 (1976)(duty attaches where prosecutor “should have known” of possibility).

21 Even if not discovered by the parties until after the fact, when “false testimony” forms
22 part of the basis for a conviction, it “cause[s] the defendants’ trial to pass the line of tolerable
23 imperfection and fall into the field of fundamental unfairness.” requiring the conviction to be
24

1 reversed. *Curran v. State of Del*, 259 F.2d 707, 713 (3rd Cir. 1958); *U.S. v. Snoddy*, 862 F.2d
2 1154, 1156 (5th Cir. 1989); *Sanders v. Sullivan*, 863 F.2d 218, 225 (2nd Cir. 1988).

3 “It is well settled that the presentation of false evidence violates due process.” *Phillips v.*
4 *Woodford*, 267 F.3d 966, 984-5 (9th Cir. 2001).

5 Gullberg and Denton crossed out any data in the worksheets that they found to be
6 incorrect. For some reason, however, neither removed any of Gordon’s data. Because it was all
7 based on perjury and deceit, however, it was required to have been removed (whether or not
8 Formoso’s results must also be ignored is an open question which the defense may raise in oral
9 argument). Instead, all of Gordon’s data remains in every certification she perjured herself in
10 without correction. Thus, absent anything else, the worksheet data is still tainted by perjury and
11 constitutes impermissible false evidence.

12 Further, because Gullberg failed to remove Gordon’s perjured data, all his recalculations
13 of solution statistics in certifications where Gordon’s name appears were performed by including
14 the perjured data. This means that every statistical calculation in every certification with
15 Gordon’s name on it is still tainted by perjury.

16 Despite this shortcoming, it might be argued that given the fact that the Court and the
17 defense have been informed of the perjured content, the taint of perjury has been cleansed. As
18 we saw above, however, inclusion of the perjured data has a measurable impact on the values
19 reported for a solution. Including Gordon’s data in just one solution resulted in QAPs of 11
20 DataMasters by a solution whose true AC did not meet the requirements for a QAP solution
21 thereby invalidating at least 1,679 tests statewide.⁵⁶⁸ It is unknown how many other similar
22 solutions may exist. Moreover, until her data has been removed from every solution, no Citizen
23 having to defend themselves against this evidence can make an accurate determination of the

24 ⁵⁶⁸ Testimony of Ken Denton, KC3, p.58-69; KC Ex. 73 (1,976 x .85 = 1,679).

1 bias of the instrument their test was administered on. In other words, they cannot determine
2 what the actual value of their breath test is.

3 Nor should it be forgotten that none of the toxicologists in the lab perform the statistical
4 calculations on their own. Each has always, and continues to, rely upon the statistical figures
5 recorded on the worksheet. This includes the value listed for the mean vapor concentration
6 which is relied upon to determine the equivalent vapor concentration. None can give
7 independent testimony on this subject because none has actually done the calculations. In this
8 context, it is beyond dispute that any testimony based on the tainted calculations is then also
9 necessarily tainted by perjury.

10 Since due process forbids reliance upon such false evidence, the inclusion of Gordon's
11 data in the calculations, and any testimony based on the resulting calculations, is impermissible.
12 Although Gullberg's oversight was done without ill intent, it has the effect of failing to remove
13 the taint of Gordon's perjury from what are now being represented as the correct statistical
14 values in these certifications. Accordingly, the calculations and any testimony based thereon
15 constitute false evidence which cannot be introduced.

16 Significantly, if no testimony or evidence can be introduced concerning the "certified"
17 value of the solution, then no testimony or evidence concerning the breath test can be introduced
18 either. This results for several reasons, all based on a single fact: the change in EVC due to the
19 corrective action needed to be taken can have a significant impact when test results are near a
20 .02, .04, .08 or .15, with respect to whether the mean of two test results is within $\pm 10\%$ of each
21 other or whether the external standard test falls within .072 - .088. The impact in this context is
22 as follows.

23 First, given that the true value for a solution's EVC is required to determine compliance
24

1 with RCW 46.61.506(4)(a)(vii) and, as we have discovered, indirectly under section vi,
2 testimony or evidence concerning that value must be supplied as a matter of foundation.
3 Because this false and perjured evidence is precluded, however, that foundation cannot be
4 satisfied. Accordingly, the breath test must be suppressed.

5 Second, at trial “the State always has the burden of proving beyond a reasonable doubt to
6 the jury that the [breath test] reading was a correct one.” *State v. Franco*, 96 Wn.2d 816, 828
7 (1982). In this context, the external standard test is “necessary to ensure accuracy, precision, and
8 confidence in each test”, WAC 448-16-050, and “the simulator solution is key to simulator
9 testing”, *Straka*, 116 Wn.2d at 873. Accordingly, introduction of the breath test at trial requires
10 introduction of testimony or evidence concerning the “certified” EVC of the associated external
11 solution. But if such testimony or evidence is tainted by perjury, then the vehicle requiring its
12 introduction, an individual’s breath test, is of necessity equally tainted. Again, the outcome is
13 the preclusion of breath test results.

14 Finally, correction of the perjury requires removal of “Gordon’s” results. The values
15 currently reported in solution certifications baring her signature are not necessarily correct.
16 Because this prevents the determination of an individual’s true BAC, the presentation of breath
17 test results based upon these solutions perpetrates a fraud upon the Court. This, then, also
18 precludes the admissibility of breath test results.

19 The result is clear. All certifications containing Gordon’s name are still tainted by, and
20 purposefully relying upon, Gordon’s perjured data. Accordingly, every breath test that has
21 utilized such a solution must be discarded.

1 B. THE USE OF FALSE EVIDENCE AND PERJURY CONSTITUTES PROSECUTORIAL MISCONDUCT

2 “The court, in the furtherance of justice after notice and hearing, may dismiss any
3 criminal prosecution due to arbitrary action or governmental misconduct when there has been
4 prejudice to the rights of the accused which materially affect the accused's right to a fair trial.”
5 CrRLJ 8.3(b). “The purpose of the rule is to ensure that, once an individual is charged with a
6 crime, he or she is fairly treated.” *State v. Boldt*, 40 Wn.App. 798, 801 (1985). It “is intended to
7 protect against governmental misconduct or arbitrary action.” *State v. Wilke*, 28 Wn.App. 590,
8 596 (1981).

9 “Normally misconduct does not require dismissal absent actual prejudice to the
10 defendant.” *State v. Granacki*, 90 Wn.App. 598, 604 (1998). “Where the behavior is
11 egregious,” however, and strikes at the core of “fundamental” protections, “the trial court does
12 not abuse its discretion by presuming there was prejudice to the defendant’s [associated] right.”
13 *Id.* Even where prejudice has been found, “the trial court may [still] properly choose to impose a
14 lesser sanction because this is a classic example of trial court discretion.” *Id.* In this context,
15 “[d]ismissal is unwarranted in cases where suppression of evidence may eliminate whatever
16 prejudice is caused by governmental misconduct.” *State v. Marks*, 114 Wn.2d 724, 730 (1990).
17 This is particularly applicable where the misconduct includes the violation of ethical rules. *State*
18 *v. Miller*, 600 N.W.2d 457 (Minn. 1999).

19 “A lawyer shall not knowingly...make a false statement of fact or law to a tribunal[,] fail
20 to correct a false statement of material fact or law previously made to the tribunal by the lawyer[,]
21 or]...offer evidence that the lawyer knows to be false.” RPC 3.3(a)(1) & (4); see also, RPC
22 8.4(c)-(d). “A prosecutor, like any other attorney, has a duty of candor toward the tribunal which
23 precludes it from making a false statement of material fact or law to such tribunal.” *State v.*
24

1 *Talley*, 134 Wn.2d 176, 183 n.6 (1998)(quotation omitted). In fact, it is the affirmative
2 “constitutional obligation of the State and its representatives...to prevent fraud upon the court.”
3 *Bowie*, 243 F.3d at 1117. Where the potential use of false or perjured evidence is at question,
4 “[t]he prosecutor is an officer of the court whose duty is to present a...truthful case to the jury.”
5 *Shih Wei Su v. Fillion*, 335 F.3d 119, 126 (2nd Cir. 2003)(emphasis added); Cf., *State v. Charlton*,
6 90 Wn.2d 657, 664-665 (1978).⁵⁶⁹

7 The ultimate mission of the system upon which we rely to protect the liberty of
8 the accused as well as the welfare of society is to ascertain the factual truth, and to
9 do so in a manner that comports with due process of law as defined by our
10 Constitution. This important mission is utterly derailed by unchecked lying
witnesses, and by any law enforcement officer or prosecutor who finds it
tactically advantageous to turn a blind eye to the manifest potential for malevolent
disinformation.

11 *Bowie*, 243 F.3d at 1114-6.

12 As discussed above, the use of false evidence or testimony to obtain a tainted conviction
13 is “fundamentally unfair” and antithetical to “any concept of ordered liberty.” *Napue*, 360 U.S.
14 at 269; *LaPage*, 231 F.3d at 491. Subsequent resort to “perjury prosecution, administrative
15 discipline, contempt, or a civil suit are not likely to fill the gap...Self-scrutiny is a lofty ideal, but
16 its exaltation reaches new heights if we expect a District Attorney to prosecute himself or his
17 associates.” *Franks*, 438 U.S. at 169. Thus, when impacting a Citizen’s ability to receive a fair
18 trial, it is well recognized that prosecutorial misconduct involving the use of evidence at trial
19 necessitates dismissal. *State v. Martinez*, 121 Wn.App. 21, 35-6 (2004). Where suppression of
20 improper evidence can prevent such misconduct, though, suppression is the appropriate remedy.

21 _____
22 ⁵⁶⁹ “The prosecutor, in the interest of justice, must act impartially, and his trial behavior must be worthy of the
23 position he holds...some prosecutors continue to use improper, sometimes prejudicial means in an effort to obtain
24 convictions...(i)f prosecutors are permitted to convict guilty defendants by improper, unfair means, then we are but
a moment away from the time when prosecutors will convict innocent defendants by unfair means...Such officers
are reminded that a fearless, impartial discharge of public duty, accompanied by a spirit of fairness toward the
accused, is the highest commendation they can hope for. Their devotion to duty is not measured, like the prowess of
the savage, by the number of their victims.” *Charlton*, 90 Wn.2d at 664-665.

1 *Marks*, 114 Wn.2d at 730; *Granacki*, 90 Wn.App. at 604.

2 The State knows, or should know, that the solution certifications containing Gordon's
3 name are still tainted by, and purposefully relying upon, Gordon's perjured data. The State
4 knows, or should know, that Formoso participated in a conspiracy to facilitate the use of
5 Gordon's perjured data. The State knows, or should know, that Logan participated in a cover up,
6 either before or after the fact, or was willfully ignorant of, the perjury and conspiracy in order to
7 conceal these actions. Finally, the State knows, or should know, as explained above, that the use
8 of the tainted data has a material effect on the results reported for Citizen's BAC. If the State
9 knowingly goes forward utilizing these perjury tainted tests, it perpetrates a fraud upon the
10 Court.

11 The Court has the discretion to prevent this misconduct though. By simply suppressing
12 those breath tests tainted by perjury, conspiracy and cover-ups, it prevents the prosecution from
13 knowingly proceeding with fraud. This would permit the State to go forward with prosecutions,
14 but simply without breath tests.

15 On the other hand, if the State proceeds utilizing these tainted tests, it embraces, and
16 cloaks itself in, the deceptions perpetrated by Logan, Gordon and Formoso. Reliance upon false
17 evidence in this manner now constitutes prosecutorial misconduct. Moreover, it is conduct that
18 could easily be avoided by voluntarily refusing to succumb to the enticement of easy conviction
19 in reliance upon lies. Given the State's knowledge, this is the most egregious sort of misconduct
20 as it is neither inadvertent nor simple carelessness. It is the result of a conscious and knowing
21 choice of action. And it is a choice of action that strikes at the heart of every Citizen's right not
22 to have perjury and false evidence used as a tool to deprive them of their liberty. Because of the
23 egregiousness of the prosecutor's actions, and the fact that they strike at the core of Citizens'

1 fundamental constitutional rights, the trial court must presume prejudice.

2 Even if, given the egregiousness of the State's actions, the Court refuses to presume
3 prejudice, prejudice has already been established. As discussed above, an accurately reported
4 value for the concentration of a solution is necessary so that a Citizen accused of DUI may
5 determine his true BAC despite the numbers spit out on a breath test ticket. This means that a
6 Citizen must be able to rely upon the mean value reported for QAP solutions in order to
7 determine if there was bias introduced during the QAP. It also means that a Citizen must be able
8 to rely upon the mean value reported for the field solution utilized in their test in order to
9 determine if there is any apparent field bias. But since Gordon's (and Formoso's) data have not
10 been removed from the calculations of the means, Citizen's do not have access to accurate mean
11 values for these solutions. Thus, they are prevented from determining what the machine should
12 have reported as their true BAC. This is overwhelmingly prejudicial.

13 The question may legitimately be asked as to whether or not Citizens can remove the
14 taint by simply redoing the calculations themselves. The most obvious retort to this is that the
15 burden to fix errors in the State's evidence, caused by purposeful deceit, should rest with the
16 government, not the Citizens the government exists to serve. If the State wants to attempt to
17 obtain conviction through the use of false evidence and lies, then it is the State that must bear the
18 burden of removing the effect of its deceit and misconduct when discovered. That is what the
19 Citizens of this State rely upon the Lab and prosecutors around the State to do. And that is the
20 job of the Lab and prosecutors around the State. In today's "convict 'em all and let God sort 'em
21 out" political environment, it is hard to imagine that a single court would permit a Citizen
22 charged with a crime to introduce perjured or false evidence with the retort that if the State wants
23 to it can fix the deceit on its own. With this in mind:

1 Decency, security, and liberty alike demand that government officials shall be
2 subjected to the same rules of conduct that are commands to the citizen. In a
3 government of laws, existence of the government will be imperiled if it fails to
4 observe the law scrupulously. Our government is the potent, the omnipresent
5 teacher. For good or for ill, it teaches the whole people by its example. Crime is
6 contagious. If the government becomes a lawbreaker, it breeds contempt for law;
7 it invites every man to become a law unto himself; it invites anarchy. To declare
8 that in the administration of the criminal law the end justifies the means—to declare
9 that the government may commit crimes in order to secure the conviction of a
10 private criminal—would bring terrible retribution.

11 *Olmstead v. U.S.*, 277 U.S. 438, 468, 48 S.Ct. 564 (1928)(BRANDEIS, J. *dissenting*).

12 But even ignoring principle, as one must do in order not to find that such egregious
13 conduct does not require the State to be responsible for fixing the effects of its own misconduct,
14 prejudice is clear. Remember, all of the State’s own experts either cannot do the same
15 calculations themselves, need cheat sheets just to make sure they can explain things “correctly”
16 or, more alarmingly, cannot even agree on the correct way to do the necessary calculations. How
17 can a typical attorney or Citizen be expected to figure this mess out if the State’s own experts
18 cannot?

19 Moreover, most of the perjury laden certifications are field solutions containing data from
20 12 or more analysts. That means that each of these solutions was certified using multiple
21 instruments. Accordingly, the only scientifically acceptable method for determining the
22 appropriate means is to utilize a weighted average. As demonstrated by Dr. Emery, this
23 calculation is nowhere near as straightforward as calculating an arithmetic mean. Instead, it
24 takes rather more complicated analysis involving independent analysis of several sets of data
collected on several different instruments before all the data is finally recombined using the
determined weighting factors. And where sets of data on individual instruments show no
variation (this may occur where a particular instrument was utilized by a single analyst only for
her 5 aliquot test), then one must justify and utilize even more complicated techniques because

1 the weighting factor applied to such a set of data becomes infinity, a scientifically unacceptable
2 and unreasonable result.

3 The result of all of this is that in order for a Citizen or their attorney to be able to
4 determine accurate solution means so that they can even begin to determine their true BAC, they
5 must retain an expert. The cost for a single defense expert in the King County proceedings
6 exceeded twelve thousand dollars. It can easily be expected to cost a typical Citizen in excess of
7 \$2,500. This is a tax upon each Citizen for the State's misconduct. In other words, although it is
8 the State that is guilty of misconduct, it is each individual Citizen the State attempts to use this
9 false evidence against that must first pay the penalty for that misconduct before they even begin
10 to have the opportunity for a fair trial free of official deceit. And for those represented by public
11 defenders, retention of an expert is either unrealistic or will be costly to the public. According to
12 Jay Ames, supervising attorney of the Spokane County Public Defender's Office misdemeanor
13 department:

14 At this time, attorneys in the misdemeanor department represent clients on
15 approximately 245 pending DUI cases...I expect that the majority of those cases
16 involve breath tests. Paying for an expert to assist with the toxicology lab issues
17 on each individual's case would be virtually impossible. We would exhaust the
18 money in our budget allocated for expert fees very quickly. If necessary we
19 would then request that the court pay the expert expenses on each case.

20 Given that the Sixth Amendment right to effective assistance of counsel includes the right
21 of every Citizen to public funds to retain a necessary expert if they cannot afford one, a court
22 would be required to provide such funds. *State v. Punsalan*, 156 Wn.2d 875 (2006). The same
23 holds for those with private counsel who could not afford to retain such an expert. *Id.* As one
24 court has noted:

...it must be recognized that thousands of [Citizens] are criminally and civilly
prosecuted for DUI each year; and most of them are of modest means. Some do
not have lawyers, and even if they do, the vast majority of accused drivers cannot

1 afford scientific experts to challenge...evidence of intoxication...Under these
2 conditions, where liberty and valuable property interests are at stake, our legal
3 system has a particularly strong “basic fairness” obligation to see that the
4 evidence that is regularly used by the State in these proceedings, where most
5 defenses must necessarily be limited in time and cost, meets a threshold of well-
6 established scientific reliability.

7 *State v. Dilliner*, 569 S.E.2d 211, 223-4 (W.Va. 2002)(Starcher, J., concurring).

8 Unless the State is held accountable and made to shoulder the burden of its own
9 misconduct, the alternatives we will be left with are: (1) each Citizen charged will have to pay
10 for an expert, in effect a ransom, to overcome the State’s misconduct before they can receive a
11 fair trial; (2) each taxpayer will have to begin paying for experts, again a ransom, for the accused
12 to overcome the State’s misconduct before a fair trial can be conducted; or (3) some Citizens
13 charged will be prevented from retaining an expert, because they cannot pay the ransom, and so
14 will be unable to overcome the State’s misconduct or receive a fair trial. The first and third
15 alternatives demonstrate real and serious prejudice to any Citizen charged. The second shows
16 the externality imposed upon all Citizens of this State because of the prosecutions choice to
17 proceed with perjured and false evidence. The egregiousness of the State’s actions and the
18 shamelessness with which it is willing to ignore responsibility for them, content to allow
19 everybody else shoulder the cost, is unconscionable.

20 Whether presumed or demonstrated, the State’s misconduct requires proper relief. The
21 Court can preserve the State’s prosecutions by simply suppressing these breath tests. And this is
22 all the defense requests. On the other hand, if the court is to decide that such obvious and blatant
23 deceit and the willingness to rely upon it to brutalize the rights of the Citizens of this State will
24 be permitted in proceedings before it, then every conviction so obtained will be required to be
reversed on appeal. And, just as important, the Citizen’s of this State will no longer be able to
trust that this Court can be relied upon to ensure that the search for truth and justice will be

1 carried out in a manner consistent with this Nation's most basic conceptions of fairness. Instead,
2 the Court will have become a rubber stamp for the misconduct engaged in by both the Lab and
3 misguided, overzealous prosecutors. In the words of Justice Brandeis:

4 When these unlawful acts were committed they were crimes only of the officers
5 individually. The government was innocent, in legal contemplation; for no federal
6 official is authorized to commit a crime on its behalf. When the government,
7 having full knowledge, sought, through the Department of Justice, to avail itself
8 of the fruits of these acts in order to accomplish its own ends, it assumed moral
responsibility for the officers' crimes...and if this court should permit the
government, by means of its officers' crimes, to effect its purpose of punishing
the defendants, there would seem to be present all the elements of a ratification. If
so, the government itself would become a lawbreaker.

9 *Olmstead*, 277 U.S. at 483.

10 C. SUPPRESSION OF BREATH TESTS AFTER JENSEN: THE RULES OF EVIDENCE

11 1. ER 702 AND ER 703

12 “The ultimate concern of the judiciary is that the methods approved result in an accurate
13 test, competently administered, so that a defendant is assured that the test results do in fact reflect
14 a reliable and accurate measure of his or her breath content.” *State v. Ford*, 110 Wn.2d 827, 833
15 (1988). The 2004 amendments to RCW 46.61.506 were intended to eliminate challenges to
16 breath tests “based on technical deficiencies that do not adversely affect the accuracy or
17 reliability” of breath test results. *Ludvigsen v. City of Seattle*, ___ Wn ___, 174 P.3d 43, 53-4
18 (2007)(MADSEN, J., concurring)(emphasis added). It must not be forgotten, however, that “[t]he
19 statute is permissive, not mandatory...There is nothing in the bill, either implicit or explicit,
20 indicating a trial court could not use its discretion to exclude [breath] test results under the rules
21 of evidence.” *Jensen*, 158 Wn.2d at 399. That is, the trial court may still utilize the rules of
22 evidence, including ER 702 and ER 703, to suppress a test based on challenges to the accuracy
23 or reliability of tests, the testing instruments, or any maintenance procedures. *Jensen*, 158
24

1 Wn.2d at 395-9; *Ludvigsen*, 174 P.3d at 54.

2 2. RCW 46.61.506(3)

3 Under RCW 46.61.506(3), “[a]nalysis of the person’s blood or breath to be considered
4 valid...shall have been performed according to methods approved by the state toxicologist.”
5 RCW 46.61.506(3). The provisions defining a valid test are made up of the “regulations and
6 protocols” promulgated by the State Toxicologist. *State v. Wittenbarger*, 124 Wn.2d 467, 487
7 (1994); *Straka*, 116 Wn.2d at 867-70; WAC 448-16-010; WAC 448-16-070. The regulations
8 “are intended to implement the direction of the statute by...identifying classifications of
9 individuals who are to be examined for their competence to conduct such tests, and operate or
10 maintain that equipment, and []identifying certain aspects of the operation of that equipment,
11 necessary for reliable testing.” WAC 448-16-010. The “protocols will be updated as necessary
12 to maintain the quality of the breath test program.” WAC 448-16-070.

13 Although RCW 46.61.506(3) still carries the full force of law, “our legislature has now
14 mandated that breath test results will be suppressed due to procedural deficiencies only if shown
15 to adversely affect the accuracy or reliability of a breath test.” *Ludvigsen*, 174 P.3d at 54.
16 However, “[w]hen deviations from...testing procedures or machine maintenance protocols are so
17 serious as to render test results unreliable, a court has discretion to exclude them in accordance
18 with the rules of evidence.” *Ludvigsen*, 174 P.3d at 54.

19 D. BREATH TESTS ARE INADMISSIBLE UNDER THE RULES OF EVIDENCE

20 Under ER 702, “the trial court is given broad discretion in determining whether an
21 expert’s testimony is admissible.” 5B, K. TEGLAND, WASH. PRAC., EVIDENCE, §702.15 (5th Ed.
22 2007). Likewise, ER 703 grants the Court the necessary discretion needed to apply it.
23 TEGLAND, §703.2.

1 testimony be admissible if it would “mislead the jury to the prejudice of the opposing party.”
2 *State v. Guilliot*, 106 Wn.App. 355, 363 (2001).

3 Under the first prong, the subject matter upon which an expert gives an opinion must lie
4 within his actual area of expertise. *Dobias v. Western Farmers Ass’n*, 6 Wn.App. 194, 197
5 (1971). That is, “the expert testimony of an otherwise qualified witness is not admissible if the
6 issue at hand lies outside the witness’ area of expertise.” *State v. Farr-Lenzini*, 93 Wn.App. 453,
7 461 (1999); *Esparza v. Skyreach Equipment, Inc.*, 103 Wn.App. 916, 924 (2000). This holds
8 because when a witness strays “beyond his field of expertise...he lack[s] the factual ‘knowledge,
9 skill, experience, training, or education’ required by ER 702” rendering his testimony little more
10 than “conjecture and speculation.” *Queen City Farms, Inc. v. Central Nat. Ins. Co. of Omaha*,
11 126 Wn.2d 50, 104 (1995); *Farr-Lenzini*, 93 Wn.App. at 461.

12 Even when testifying within his/her area of expertise, however, “[i]f there is a precise
13 problem identified by the defense which would render [a scientific] test unreliable, then [expert]
14 testimony might not meet the requirements of ER 702 because it would not be helpful to the trier
15 of fact.” *Cauthron*, 120 Wn.2d at 890. This determination “requires the trial court to assess
16 ‘whether the reasoning or methodology underlying the testimony is scientifically valid
17 and...whether that reasoning or methodology properly can be applied to the facts in issue.’”
18 *Stroh*, 74 Wn.App. at 560.

19 “Under ER 702, if [] lab error or error rates are so serious that results are not helpful to
20 the jury, the trial court may in its discretion rule the evidence inadmissible.” *Copeland*, 130
21 Wn.2d at 270. In general, “challenges...concerning laboratory error rates, the size, quality, and
22 randomness of [a lab’s] data bases, and [a lab’s] methodology and practices...involve questions
23 of admissibility under ER 702.” *State v. Cannon*, 130 Wn.2d 313, 325 (1996). A proper
24

1 foundation [should also] include...a showing that [a] test was properly administered.” *State v.*
2 *Baity*, 140 Wn.2d 1, 18 (2000). Where an expert opinion requires an appropriate statistical
3 foundation, the State must demonstrate that the “empirical evidence utilized...is valid.”
4 *Cauthron*, 120 Wn.2d at 909. Finally, “the admissibility of computer-generated [evidence] as
5 substantive proof...is conditioned upon a sufficient showing that (1) the computer is functioning
6 properly [and] (2) the input and underlying equations are sufficiently complete and accurate.”
7 *State v. Sipin*, 130 Wn.App. 403, 415 (2005).

8 a. THE LACK OF EXPERTISE

9 Several issues arise under this provision in the case at bar. First, every toxicologist who
10 has testified, aside from Logan, has indicated that they have not been trained in breath testing,
11 have never actually administered a breath test and are not experts in breath testing.⁵⁷⁰
12 Accordingly, since by their own admissions none is an expert in breath testing, none can be
13 permitted to give any opinion as to whether any breath test anywhere in this State is accurate.

14 Second, aside from Rod Gullberg, most of the State’s “experts” don’t know the math
15 necessary to address even the simplest of questions, including some of the very questions they
16 are called by the State as experts to testify concerning. Those that do, including Dr. Logan
17 himself, need cheat sheets to do the same simple calculations and, worse, to correctly explain the
18 concepts involved. Clearly, none of these individuals can be considered an expert in the
19 mathematical analysis of breath testing or simulator solution certification.

20 Finally, and worst of all, Dr. Logan lacks even the rudimentary understanding necessary
21 to determine or analyze breath test bias. His August 2007 memo is a travesty which not only
22 confuses the science but vastly underestimates the individuals affected by the software errors
23 addressed therein. His extreme and utter incompetence clearly preclude him from being deemed

24 ⁵⁷⁰ Testimony of Jayne Thatcher, S2, p.9-10.

1 an expert concerning the impact of errors on individuals' breath test results.

2 Clearly, none of these individuals is an expert with respect to the matters discussed.
3 Further, because they are cloaked with the aura of scientific experts, their testimony can only
4 "mislead the jury to the prejudice of the opposing party." Under ER 702, their testimony with
5 respect to the accuracy and reliability of simulator solutions and/or breath tests is
6 inadmissible.⁵⁷¹

7 b. THE LACK OF HELPFULNESS

8 Before this scandal broke, there was the smugly arrogant conclusion in an official
9 investigation of simulator solutions that:⁵⁷²

10 this laboratory has prepared simulator solutions for over 20 years. No solution
11 has ever left this laboratory with an incorrect concentration.

12 If it wasn't for some anonymous whistleblower or the investigations carried out by
13 defense attorneys, every toxicologist would still be marching into court, looking judges and
14 juries in the eyes, and saying the exact same thing.⁵⁷³ Fortunately, we now know the truth.

15 The sheer number of errors already discovered is astounding, climbing into the hundreds.
16 And it cannot simply be blamed on a few bad apples, the problem is endemic. Not only does the

17 ⁵⁷¹ Nor, can these individuals simply rely upon materials supplied by others to testify beyond the scope of their own
18 expertise. ER 703 "allows admission of expert opinion based on data interpreted by another when certain
19 requirements...are met." *State v. Nation*, 110 Wn.App. 651, 662 (2002). Nonetheless, this testimony may not
20 simply be a "conduit" for the opinion of another. *State v. Towne*, 453 A.2d 1133, 1135 (Vt. 1982)(accord, *Nation* at
21 662). Instead, the opinion testified to by an expert must be his/her own. *State v. Ecklund*, 30 Wn.App. 313, 318
(1981). "[A]bsent an exception to the hearsay rule, hearsay statements of the opinions of third parties are
inadmissible." *Nation* at 662. In particular, "[a]n expert witness may not, on direct examination, reveal the content
of reports prepared or opinions expressed by non-testifying experts." *People v. Campos*, 32 Cal.App.4th 304, 308
(Cal.App. 1995)(accord, *Nation* at 662). Moreover, the State is prohibited from relying upon such hearsay as
"substantive evidence...to prove [the] truth" of the matters asserted. *State v. Martinez*, 78 Wn.App. 870, 879
(1995). In short:

22 While Rule 703 permits an expert witness to take into account matters which are unadmitted and
inadmissible, it does not follow that such a witness may simply report such matters to the trier of fact: The
Rule was not designed to enable a witness to summarize and reiterate all manner of inadmissible evidence.
23 *Martinez* at 880 (quoting, 3 D. LOUISELL & C. MUELLER, *Federal Evidence* § 389, at 663)(accord, *State v. DeVries*,
149 Wn.2d 842, 848 n.2 (2003)).

24 ⁵⁷² Skagit Ex. 31.

⁵⁷³ Testimony of Dr. Logan, S3, p.56-7; A1, p.138.

1 Lab have an alarmingly high error rate, though, but the apparent inability to discover such errors
2 on its own. Despite all their QA procedures, warnings from internal audits and other sources and
3 supposed scientific expertise, the work produced by the lab is incompetent and riddled with
4 errors that materially affect Citizen's breath test results around the State.

5 The Lab's inability to discover these errors on its own must be severely scrutinized.
6 After all, these are the individuals we count on to deliver scientific certainty and knowledge to
7 lay jurors who may not be able to distinguish a chromatograph from a DataMaster. So how
8 disturbing is it then that many of the errors already discovered are absurdities on the face of the
9 certifications themselves that even two minutes worth of care would have discovered.
10 Declarations signed evidencing clairvoyant powers and physical impossibilities. Data obviously
11 incorrectly reported but left to secretaries to figure out. And despite having been made aware of
12 all of these problems, toxicologists went back after the Gullberg/Denton review and, seemingly
13 without a care, resigned incorrect declarations containing the same errors.⁵⁷⁴

14 Whether it's more alarming that Dr. Logan never asked Gullberg and Denton to look for
15 and correct these types of errors or that the toxicologists themselves never bothered to take the
16 time to ensure that the declarations they signed were correct the second time around is hard to
17 determine. At what point does the lack of awareness, carelessness or just plain indifference to
18 accuracy render anything said incredible? And what is it that the Lab is blissfully unaware of
19 now that the Citizens of this State must await the arrival of some anonymous whistleblower or
20 defense attorney to discover?

21 This last question takes on special significance in the wake of the King County hearings.
22 Leading up to those proceedings, Dr. Logan trumpeted in the courtroom, in administrative
23 licensing hearings and in the press that despite all these "little" errors, only eight people had been

24 ⁵⁷⁴ Solution #s: 06042, 06044, 06045, 06046 and 06047.

1 affected Statewide. And then, during the last week of December, oops! In preparation for King
2 County they discovered the mix-up with solutions 02018 and 02019, and 10,000 more motorists
3 join the club. And how many more tomorrow?

4 Nor is any of this the result of diligent but honest mistakes. It is utter carelessness.
5 Analysts too lazy to insure that the data they include in worksheets is correct or even their own.
6 Too busy to check to insure that the information contained in documents being testified to in
7 Court and signed under penalty of perjury for use by the courts and public are correct. Blind
8 reliance on secretarial staff to insure the scientific validity of reported results. Blind faith in the
9 numbers being spit out of a computer whose software/programming had never been checked to
10 insure that it was operating correctly. A culture that valued the facilitation of prosecutions over
11 the discovery of truth. And a State Toxicologist so disengaged from the whole process that he
12 claims not to have been aware of anything taking place in the Lab.

13 As a result, there are over 150 non-software related errors, many involving wrong data
14 entered into worksheets so that solution calculations would have been wrong even absent any
15 other problems. Every single calculation of the CV of Field solutions by the software since it
16 was first implemented, through August 2007, was done incorrectly. All calculations of the mean,
17 standard deviation, CV and equivalent vapor concentration for certifications with more than 12
18 analysts were not in compliance with the protocols for the period from August 2005 to August
19 2007. This included solutions used for QAP purposes. A software error that reported the wrong
20 EVC for a QAP solution used to QAP at least 32 DataMasters statewide. And while we now
21 know that this affected thousands of breath test results around the State, the Lab is still smugly
22 claiming that its snake oil will cure whatever ails us.

23 But the carelessness, incompetence and willingness to put advocacy over the truth is not
24

1 even the worst of it. Setting aside the perjury and attempts to cover-up, simple adherence to
2 universally accepted scientific standards would have minimized the impact of all of this. That is
3 part of the reason such standards exist. They “ensure you are applying...principles of practice
4 that are consistent with the norms within the forensic toxicology community...the things that
5 give you confidence in the results that the laboratory produces.”⁵⁷⁵ As both Gullberg and Dr.
6 Emery testified, such standards minimize the possibility and impact of error, giving confidence
7 that our results are good approximations of the truth.⁵⁷⁶ Unfortunately, not only was there no
8 attempt to adhere to such standards, but there seems to have been little awareness to what they
9 would have required in the first place. And this has had dire consequences.

10 One of the first and most rudimentary of these requirements is that a scientist check the
11 results and calculations he/she is reporting before doing so. That this even needs to be discussed
12 demonstrates the absurdity of calling what was done in the Lab science. One of the
13 distinguishing features of science is its focus on quantitative rigorousness. Yet each of us has
14 taken more time ensuring the calculations in our checkbooks, bank accounts or taxes were
15 accurate than a single toxicologist did in ensuring the results they were reporting were. Work
16 such as this would never stand up to the process of peer review.⁵⁷⁷

17 As embarrassing as this is, it still need not have erupted into the scandal it has today if
18 another universally recognized scientific standard had been followed. Just as with any other
19 instrument in the Lab, software must be verified and validated before use. This is especially so
20 when someone in a lab makes programming changes to the software. A few simple calculation
21 checks at anytime, by anyone in the Lab, is all it would have taken to discover DeStefano’s
22 programming errors. And a two second calculation, dividing the AC by 1.23 to ensure the

23 ⁵⁷⁵ Testimony of Dr. Logan, KC4, p.177-8.

24 ⁵⁷⁶ Testimony of Rod Gullberg, KC2, p.202-3.

⁵⁷⁷ Testimony of Dr. Ashley Emery, KC7, p.46.

1 correct EVC was being reported each time a certification was posted would have caught the
2 inherent software error.

3 Instead, no check was ever performed on the software itself or DeStefano's
4 programming. As a result: (1) the software relied upon to determine compliance with the
5 protocols has for its entire lifetime not functioned properly; and (2) the input and underlying
6 equations within the software were neither complete nor accurate.

7 The accumulation of failure upon failure by the Lab to adhere to proper scientific
8 standards has led us to the state of affairs currently before the Court. Frankly, it doesn't take a
9 rocket scientist to see that these failings by the Lab remove what they are doing from the realm
10 of credible science. Simple common sense is enough. That anyone would defend such conduct
11 is either ignorance or silliness, neither of which is acceptable when an individual's liberty is at
12 stake.

13 Nor is this the only scientifically unacceptable practice engaged in by the Lab. Although
14 it was in direct contradiction to the protocols and accepted scientific practice, the toxicologists
15 were trained to discard data anytime it didn't yield the results they wanted to get. But why do
16 any measurements at all if you are only going to disregard that which is in conflict with your
17 preconceived expectations? You might as well just declare the value to that you wish to obtain
18 and be done with it. That is, after all, the affect of such practices.

19 The impact? All we need to do is examine the results of solution 06028. Based solely on
20 the fact that Noble was trained to reject valid data when it did not yield what the Lab expected, at
21 least 32 DataMasters were QAPd by a solution with a forensically indefensible error in its
22 reported EVC. Not only did this result in 3 DataMasters being approved for use in the field that
23 actually fail to satisfy the requirements for accuracy found in the protocols, but at least 3,445
24

1 tests Statewide likely resulted in artificially and forensically indefensible elevated BACs being
2 reported.⁵⁷⁸

3 Then there is the reverse problem, failing to properly reject data clearly identified as
4 consisting of an outlier pursuant to the Lab's new (12/18/07) outlier criteria. Remember, for
5 solution 07031 Peterson indicated that the sole reason she rejected her data was, for the same
6 unacceptable reason as Noble, because it fell outside the mandated mean range in the protocols.
7 While her data was eventually determined to consist of an outlier, it unfortunately consisted of
8 more than two outliers. This means that not only should a couple of her values been rejected, but
9 solution 07031 itself should have been discarded. Nonetheless, as you read this, the solution is
10 being used as an external standard in DataMasters around the State. Thus, despite the
11 implementation of a scientifically acceptable outlier protocol, the Lab still demonstrates the
12 inability to adhere to such universally recognized scientific practices.

13 Analogous to this is the failure to reject forensically invalid data based on verifiable
14 assignable causes. For solution 06043, one of Capron's ISTD results shows that there is a stuck
15 injector needle at the time of the solution certification. Both Capron and Nuwayhid are clear that
16 this renders the data collected unacceptable so that it must be discarded. Nonetheless, most
17 likely because no one ever took the time to look at the results before approving them, the data
18 was included in the certification for this solution. And to this date, the Lab has made no attempt
19 to address the problem or even identify how many thousands of tests were performed utilizing
20 this solution as an external standard.

21 The rejection of valid data, the use of bad results and the approval of solutions that
22 should be rejected. Like a room full of chickens with their heads cut off, the toxicologists don't
23 seem to have clue where they're going or what they're doing. This would not be acceptable in a

24 ⁵⁷⁸ Testimony of Trooper Ken Denton, KC3, p.68; KC Ex. 74 (4,053 x .85 = 3,445).

1 freshman lab course. Why are we willing to permit it by a State Lab whose results may not only
2 end up costing an individual their liberty but their ability to support their family?

3 Finally, there is the Lab's practice of utilizing arithmetic means for certification data
4 collected on multiple instruments. Although to a lay person this might seem somewhat obscure,
5 scientifically it is critical. Where it impacts the purpose for which the data is being collected,
6 unless the characteristics of the different instruments being utilized are accounted for, the data
7 collected from each cannot be combined. As the saying goes, it's apples to oranges. Only once
8 the characteristics of each instrument have been accounted for, in particular the precision of
9 each, do we get apples to apples and oranges to oranges. In science, this is basic. Even the
10 State's own witnesses, Gullberg and Polissar, confirmed this.

11 Dr. Polissar proved that the weighted mean is in fact more precise for solution
12 certification purposes. And Polissar, Gullberg and Dr. Emery all demonstrated that when the
13 weighted mean is utilized, differences in solution EVC ranging from .0002 to .0006 can be
14 found. As this was a small random sample of solutions, and 94.4% of solution certifications
15 have been performed utilizing multiple machines, it can be expected that greater and lesser
16 differences are discoverable as well.

17 Given that we know that differences as small as .0001 can have a significant impact when
18 test results are near a .02, .04, .08 or .15, with respect to whether the mean of two test result is
19 within $\pm 10\%$ of each other or whether the external standard test falls within .072 - .088,
20 adherence to universally accepted scientific standards requires that we utilize a weighted mean.
21 The fact that the Lab is still relying on the arithmetic mean indicates that not only is this standard
22 being violated but that the underlying equations within the software are still neither complete nor
23 accurate.

1 In the end, we know that the ISO and NIST standards “contain[] all of the requirements
2 that testing and calibration laboratories have to meet if they wish to demonstrate that they
3 operate a quality system, are technically competent, and are able to generate technically valid
4 results.”⁵⁷⁹ That they “must be met in order for a laboratory to be recognized as competent to
5 carry out tests and/or calibrations.”⁵⁸⁰ And that they are “applicable to all organizations
6 performing tests and/or calibrations.”⁵⁸¹ Can it be honestly maintained that the criminal justice
7 system, where the rights and liberties of Citizen’s are threatened by the State, requires any less?
8 ER 702 assures us that it does not.

9 What do we have then: Perjury, false swearing, cover-ups, incompetence, serious lab
10 error rates, questions concerning the quality and validity of data, methodology and practices not
11 acceptable in any scientific community, calculations that were not properly performed and
12 empirical data of questionable validity and software that is still neither complete nor accurate.
13 And all of it impacting the accuracy, reliability and credibility of breath test results.

14 Unfortunately, it is well accepted that forensic breath “test results are ‘virtually
15 dispositive of guilt or innocence.’” *Mack v. Cruikshank*, 2 P.3d 100, 104 (Ariz.App. 1999).⁵⁸²
16 This is so even where the state is not prosecuting under the *per se* prong of a DUI statute because
17 most jurors “would conclude that a person with [a] reading [in excess of the *per se* limit] was
18 intoxicated when it was taken, in the absence of substantial evidence to the contrary.” *McElroy*,
19 568 So.2d at 1016-7. Absent countervailing evidence, “[a] citizen’s right to drive, and
20

21 _____
22 ⁵⁷⁹ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Testing
and Calibration Laboratories*, ISO/IEC 17025:1999(E), v (1999).

⁵⁸⁰ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Handbook 150*, v (2001).

⁵⁸¹ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Testing
and Calibration Laboratories*, ISO/IEC 17025:1999(E), v (1999), 1.

⁵⁸² *See also, Jayne*, 24 P.3d at 926 (“[G]iven the significant weight that a jury is likely to accord this type of
24 evidence (urinalysis test) the potential for prejudice...is high.”).

1 sometimes to liberty, will depend on the verdict of a machine.”⁵⁸³ *State v. Garthe*, 678 A.2d
2 153, 158 (N.J. 1996).

3 So who would breath tests ground in the practices discussed above actually be helpful to?
4 Perhaps the despot or misguided zealot whose only interest is in obtaining quick and efficient
5 convictions. But not the juror or jurist interested in discovering the truth. To them it must
6 represent an assault on the integrity of the system they find themselves actors in. At best the
7 breath test results are inaccurate, unreliable and confusing. At worst they are plainly misleading.
8 As a result, under ER 702, the breath test results herein will not be helpful to the trier of fact and
9 must be suppressed.

10 2. ER 703 – THE ABSENCE OF A BASIS FOR REASONABLE RELIENCE

11 An expert may rely on facts and data as the basis for his opinion on a subject if they are
12 “of a type reasonably relied upon by experts in the particular field in forming opinions or
13 inferences upon the subject.” ER 703. “Under [this rule], expert testimony must be based on
14 sufficient foundational facts to support the expert’s opinion.” *State v. Pittman*, 88 Wn.App. 188,
15 198 (1997). This “permits the trial judge to assess the reliability of the underlying facts or data
16 upon which the expert's opinion is based” and determine the admissibility of such testimony
17 based on that assessment. *State v. Maule*, 35 Wn.App. 287, 295-6 (1983). In this context:

18 it is not sufficient to show that the particular expert in question customarily relies
19 upon such material. The proponent must show that person’s in the expert’s
20 profession, in general, reasonably rely upon such material in the practice of their
21 own profession... Whether the expert’s reliance is reasonable is determined by the
22 judge.

21 TEGLAND, §703.5.

23 ⁵⁸³ “Evidence perceived by lay jurors to be scientific in nature possesses an unusually high degree of persuasive
24 power.” *State v. O’Key*, 899 P.2d 663, 672 (OR. 1995). In fact “scientific proof may in some instances assume a
posture of mystic infallibility in the eyes of a jury of laymen.” *Addison*, 498 F.2d at 744.

1 In making its determination, “the court should keep in mind the danger that the jury may
2 be overly impressed with a witness possessing the aura of an expert.”⁵⁸⁴ *Miller v. Likins*, 109
3 Wn.App. 140, 148 (2001). In this vein, one commentator has noted that in the context of a jury
4 trial, “evidence is of three degrees: convincing, very convincing and statistical.” Weinstein, THE
5 POWER AND DUTY OF FEDERAL JUDGES TO MARSHALL AND COMMENT ON THE EVIDENCE IN JURY
6 TRIALS AND SOME SUGGESTIONS ON CHARGING JURIES, 118 FRD 161, 176 (1988).

7 Many factors may lead to the conclusion that a particular set of “facts or data” are not
8 reasonably relied upon. These include where an expert: (1) does “not verify the accuracy” of the
9 underlying facts and data, *State v. Acosta*, 123 Wn.App. 424, 436 (2004); (2) is relying upon
10 “facts and data [that] are critically inaccurate or incomplete” or “plainly untrustworthy”,
11 *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1114-5 (5th Cir. 1991); (3) fails to
12 “demonstrate his competence” with the materials or the materials are based “on unsupported
13 assumptions and ignore[] distinctions crucial to arriving at a valid result”, *McGlinchy v. Shell*
14 *Chemical Co.*, 845 F.2d 802, 806-7 (9th Cir. 1988); or (4) cannot cite to “studies or other
15 scientific evidence” supporting reliance upon such materials, *Pittman*, 88 Wn.App. at 198;

16 For purposes of the matter *sub judice*, two special cases require separate mention. First,
17 utilization “of computer-generated [evidence]...as the basis for expert testimony regarding
18 matters of substantive proof is conditioned upon a sufficient showing that (1) the computer is
19 functioning properly [and] (2) the input and underlying equations are sufficiently complete and
20 accurate.” *Sipin*, 130 Wn.App. at 415. Second, statistical data does not provide a reasonable
21 basis for testimony when based upon improper methodology, *Oliver v. Pacific Northwest Bell*

22 _____
23 ⁵⁸⁴ Jurors believe scientists. In a nationwide survey of 800 people who served on civil and criminal juries, eighty-
24 nine percent of the juror reported that paid experts were believable. Among criminal jurors, sixty-eight percent
thought experts were very believable and fifty percent of the civil jurors found experts to be very believable.((From
“*Expert Witnesses Found Credible by Most Jurors*, Nat’l L.J., Feb. 22, 1993, cited in “*A Critical Examination of the*
Post-Daubert Scientific Evidence Landscape,” (Jay P. Kesan, Ph.D.) , Georgetown Law J. Volume 85, No.5, 1996.))

1 *Telephone Co., Inc.*, 106 Wn.2d 675, 682-3 (1986), or where they are “unrealistic and
2 contradictory...[and]...riddled with errors”, *Shatkin v. McDonnell Douglas Corp.*, 727 F.2d 202,
3 208 (2nd Cir. 1984).

4 There is at least one sure fire way to ensure that the facts or data utilized by a scientific
5 expert are reasonably relied upon: make sure they comply with universally recognized scientific
6 standards.

7 In particular, the ISO and NIST standards “contain[] all of the requirements that testing
8 and calibration laboratories have to meet if they wish to demonstrate that they operate a quality
9 system, are technically competent, and are able to generate technically valid results.”⁵⁸⁵ In fact,
10 these standards “must be met in order for a laboratory to be recognized as competent to carry out
11 tests and/or calibrations.”⁵⁸⁶ According to Dr. Logan himself, this “ensure[s] you are applying
12 standards and principles of practice that are consistent with the norms within the forensic
13 toxicology community...the things that give you confidence in the results that the laboratory
14 produces.”⁵⁸⁷

15 The fact that the Lab has not been, currently is not and will not be in compliance with
16 these standards until July 2008, renders any solution certification data and calculations, and any
17 breath test results based thereon, suspect. More to the point, the fact that the Lab demonstrably
18 violates at least some of these standards renders any certification data and calculations, and any
19 breath test results based thereon, affirmatively doubtful. Absent a showing that the Lab’s failure
20 to adhere to the ordinary scientific standards discussed above has no affect on the accuracy,
21 reliability and credibility of breath tests, they cannot provide a reasonable basis for the testimony

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23 ⁵⁸⁵ INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *General Requirements for the Competence of Testing
and Calibration Laboratories*, ISO/IEC 17025:1999(E), v (1999).

24 ⁵⁸⁶ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Handbook 150*, v (2001).

⁵⁸⁷ Testimony of Dr. Logan, KC4, p.177-8.

1 of any witness. This is our starting point.

2 Beyond this, that the simulator solution certifications do not constitute “facts or data
3 reasonably relied upon” by an expert is obvious. First, there is the fact that the Lab and the
4 certifications produced therein are hopelessly riddled with purposeful and carelessly perpetrated
5 deceit. Perjury, conspiracy to commit perjury, cover-ups and false swearing have all been
6 established with respect to the testing and certification of the simulator solutions. That perjury,
7 conspiracy to commit perjury and a subsequent attempt to cover it up should cause any expert
8 hesitation in relying upon the facts or data infected thereby is obvious.

9 Whether Logan’s actions were purposeful or the result of incompetence matters little.
10 Either he purposefully attempted to conceal deceit or he was too incompetent to understand the
11 procedures in the Lab he is ultimately responsible for. In either event, his actions lend no
12 confidence to any work done in the Lab. As for the rest of the analysts, over the course of two
13 years each repeatedly signed declarations swearing to facts they did not know to be true because
14 they were too lazy, careless and/or incompetent to simply check. And some continue to do so.
15 No good faith argument can be made that any expert would rely upon “facts or data” generated
16 by a lab that shows such reckless disregard for the truth, whether purposeful or not.

17 In this context, consider solutions 02018 and 02019 discussed above. We know that
18 because Jayne Thatcher (and every other toxicologist in the Lab) never bothers to ensure that the
19 values she enters into the worksheets are correct, that the two solutions were mixed up. Either
20 the chromatographs were given the wrong solution designations or the wrong values were
21 entered into the worksheets. There is no way of knowing which or whether the values are correct
22 or not. That such carelessness and its products do not provide a basis for reasonable reliance is
23 beyond argument.

1 Worse, if the State is correct and we can somehow mysteriously know that the values for
2 each solution could simply be switched, the risk of false swearing becomes a real concern.
3 According to Jayne Thatcher, when she is called to testify, she is specifically swearing to the
4 accuracy of the values she entered into a particular solution's certification worksheet. That
5 means that for every case Thatcher testified in involving these solutions, she affirmatively swore
6 to something that was not true. While this seems to present few qualms for the Lab's
7 toxicologists, it is certainly something that typical forensic scientists are likely to view quite
8 seriously. Given the criminal risk presented by reliance on the Lab's work product, only the
9 misguided zealot would claim that it could be reasonably relied upon as the basis for testimony.

10 Beyond this, the "science" itself conducted by the Lab precludes consideration of the
11 Lab's results, or anything based thereon, as the basis of testimony under ER 703. Over a three
12 year period, AT LEAST 150 NON-SOFTWARE RELATED ERRORS were committed that
13 have already been identified. This is IN ADDITION TO THE 100's OF
14 SOFTWARE/PROGRAMMING RELATED ERRORS that have been identified as well. And
15 every time the State tries to defend the Lab's conduct in one of these hearings, new classes of
16 error and impacts are identified.

17 These are not harmless mistakes made by diligent scientists. As discussed above, these
18 errors do have a material impact on breath test results. And they are due to simple carelessness
19 and lack of effort. None of the analysts takes the time to verify the facts or data being entered
20 into a spread sheet or to double check the calculations being testified to. They just sign off on
21 documentation as it passes by their desks. As is clear by now, the facts and data generated by the
22 Lab are critically inaccurate, incomplete and plainly untrustworthy (at least 10% of the
23 certifications contain incorrect data).

1 The poster-boy for all of this is Dr. Logan and the August 2007 memo he posted to the
2 WSP website. In the memo, Logan reveals the programming errors the Lab discovered and then
3 explains how those errors impact Citizens' breath test results. The only problem is that Logan's
4 analysis is absolutely wrong! Due to his stunning lack of understanding of the concept of bias,
5 his approach was completely irrelevant to the question of how these errors would affect a
6 Citizen's results. And as a result, he drastically underestimated the number of Citizens who
7 submitted to his testing process who were affected by these errors. Yet this is the type of
8 material the Lab claims may be reasonably relied upon by experts in their testimony.

9 Then there's the questions surrounding the Lab's rejection of valid data, use of bad data
10 and failure to use weighted means despite the fact that 94.4% of solutions certified are tested on
11 multiple instruments. Without rehashing the discussion engaged in under ER 702, we know that
12 each of these practices has a serious impact on the accuracy and reliability of the breath testing
13 process. Given that these practices violate some of the most basic scientific standards, no fact or
14 data generated in this manner, or anything relying thereon, would be reasonably relied upon by
15 any competent scientist.

16 Significantly, not a single witness for the State has yet presented a single treatise,
17 textbook or reference supporting the use of an arithmetic mean. To the contrary, every single
18 reference or standard provided unequivocally states that a weighted mean must be used in the
19 circumstances before the court.⁵⁸⁸ Even Rod Gullberg has written of the need to use weighted

21 ⁵⁸⁸ NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, *NIST Special Publication 260-100*, 78 (1993);
22 INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *Reference Materials – General and Statistical Principles*
23 *for Certification*, ISO Guide 35:2006(E) § 10.7.1, App. B.7 (2006); INTERNATIONAL ORGANIZATION FOR
24 STANDARDIZATION, *General Requirements for the Competence of Reference Material Producers*, ISO Guide
34:2000(E) § 5.15.1 (2000); BEVINGTON, *Data Reduction and Error Analysis for the Physical Sciences*, 57 (2003);
J. TAYLOR, *An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements*, 175-6 (2nd Ed.
1997); Freund, MODERN ELEMENTARY STATISTICS, 39 (4th 1973); N. Zhang, *The Uncertainty Associated with the*
Weighted Mean of Measurement Data, 43 METROLOGIA 195 (2006)..

1 means in the specific context of solution certification when it can impact test results.⁵⁸⁹ And
2 why the State called Dr. Polissar is still a mystery. Not only does the majority of his testimony
3 support the defense's arguments, but he actually proposed a much more complex and
4 controversial weighted mean based upon published authority.⁵⁹⁰

5 Moreover, as discussed in the previous section: (1) the software relied upon to determine
6 compliance with the protocols has for its entire lifetime not functioned properly; and (2) the
7 input and underlying equations within the software were neither complete nor accurate. In this
8 context, none of the Lab's statistical calculations provide a reasonable basis for testimony
9 because not only are they based upon improper methodology, but they are riddled with errors.

10 In the end, what ER 703 is asking is whether the facts and data in question are of the type
11 that would be relied upon by one's peers. "If you want to establish any credibility in your work,
12 you're going to have to convince your peers that you have done it correctly -- And [adherence to
13 accepted standards such as ISO and NIST] establishes credibility."⁵⁹¹ Even ignoring such
14 standards, however, work product such as that being offered by the State would never stand up to
15 the process of peer review.⁵⁹²

16 Perhaps sensing this at some gut level, some of the State's own witnesses no longer want
17 to rely on these materials. Rod Gullberg instructed all breath test technicians that they "need[ed]
18 to remove and avoid using simulator solution batch numbers that [Ann Marie Gordon] attached
19 her signature to."⁵⁹³ Both Knoy and Capron refused to swear that even "corrected" certifications

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22 ⁵⁸⁹ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196-7 (1990);

23 ⁵⁹⁰ Robert Paule, et. al., *Consensus Values and Weighting Factors*, 87 J. RESEARCH, NAT'L BUREAU OF STANDARDS,
377-385 (1982).

24 ⁵⁹¹ Testimony of Dr. Ashley Emery, KC7, p.31-4.

⁵⁹² Testimony of Dr. Ashley Emery, KC7, p.46, 96.

⁵⁹³ KC Ex. 2; Testimony of Rod Gullberg, KC1, p.24.

1 that they had resigned, up to solution 07049, were correct.⁵⁹⁴ And then there's the jaw dropper
2 that.⁵⁹⁵

3 ...there was a consensus among us [in the breath test section] that maybe it would
4 be better to wipe the slate clean, and we should maybe talk to the prosecutors,
5 which we did, about moving over from 07025 on...[recommending that the
6 prosecutors] should look at it [suppressing tests] closely because this is a black
7 eye, it doesn't look good, and perhaps we're better moving on with a clean slate
8 from this point forward.

9 The conclusion is obvious. Given everything before the Court, and the fact that even
10 some of the State's own experts no longer wish to rely on these solutions, their accompanying
11 certifications or even the resulting breath tests themselves, no solution, certification, or the breath
12 test results dependant thereon, could reasonably be relied upon as a basis for testimony under ER
13 703. As a result, under ER 703, the breath test results herein must be suppressed.

14 3. RCW 46.61.506(3) – DEVIATIONS RENDERING TEST RESULTS UNRELIABLE

15 The regulations and protocols governing the simulator solution certification process form
16 the programatic basis from which the accuracy and reliability of breath tests are determined.

17 First, we know that both the determination of whether the external standard test lies
18 between .072 - .088 and whether two samples lie within $\pm 10\%$ of their mean is dependent upon
19 an accurate EVC for whatever solution is being relied upon. As discussed above, this is critical
20 because each of “[t]hese steps [is] necessary to ensure accuracy, precision, and confidence in
21 each test.” WAC 448-16-050(emphasis added). With respect to the first of these two steps, the
22 external standard test is explicitly defined as “the use of a simulator containing a certified
23 simulator solution, to provide a known alcohol vapor concentration to test the accuracy and
24 proper working order of the instrument.” WAC 448-16-030(8)(emphasis added).

Next, the protocols confirm that the standard calibration and multi-level check of

⁵⁹⁴ Testimony of Justin Knoy, S1, p.97-8; Testimony of Brian Capron, S1, p.134, 136, 139.

⁵⁹⁵ Testimony of Trooper Denton, KC3, p.175-6.

1 accuracy and reliability that make up part of the annual QAP are part of the procedures that
2 “ensure[] the accuracy, precision and forensic acceptability of the DataMaster instrument for the
3 purpose of quantitatively measuring the alcohol concentration of a person’s breath.”⁵⁹⁶ In this
4 context, “[t]he quality assurance simulator solutions...are used to verify the accuracy and
5 precision of the BAC Verifier DataMaster Quality Assurance Program of the Washington State
6 Patrol Breath Test Section.”⁵⁹⁷

7 Put simply, whether we are dealing with a Field or QAP solution.⁵⁹⁸

8 The accuracy of breath alcohol measurements is determined by the measurement
9 of *known* standards...The measurement of *known* and traceable standards is the
10 basis for determining accuracy and thereby confidence in all analytical results.

11 A plain reading of the relevant statutes dictates that compliance with the rules and
12 regulations governing breath testing is determined by the circumstances present at the time of a
13 test. *Ludvigsen*, 174 P.3d at 50; *Poston v. Clinton*, 66 Wn.2d 911, 915-16 (1965); *State v.*
14 *Brokman*, 84 Wn. App. 848, 852 (1997).

15 Every test requires an “[e]xternal standard simulator solution test [and] The result of this
16 test must be between .072 and .088 inclusive.” WAC 448-16-050. “‘External standard test’
17 means the use of a simulator containing a certified simulator solution, to provide a known
18 alcohol vapor concentration.” WAC 448-16-030(8). The critical part of this definition for our
19 purposes is the requirement of a “‘certified simulator solution [that] provide[s] a known alcohol
20 vapor concentration.” “‘Simulator’ means a device which when filled with a certified simulator
21 solution, maintained at a known temperature, provides a vapor sample of known alcohol

21 ⁵⁹⁶ WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24-27 (2007);
22 WASHINGTON STATE PATROL BREATH TEST SECTION, *Policy and Procedure Manual*, 24-27 (2005).

23 ⁵⁹⁷ WASHINGTON STATE TOXICOLOGY LABORATORY, *Procedure For The Preparation Of Quality Assurance*
24 *Solutions For Use With A Breath Test Instrument*, 1 (2007 – all versions); WASHINGTON STATE TOXICOLOGY
LABORATORY, *Procedure For The Preparation Of Quality Assurance Solutions For Use With A Breath Test*
Instrument, 1 (2004).

⁵⁹⁸ Rod Gullberg, *Using a Weighted Mean to Compute the Values of Simulator Solution Standards*, 14(3) J. ANAL.
TOXICOL. 196 (1990).

1 concentration.” WAC 448-16-030(11). The critical part of this definition for our purposes is
2 again the requirement of “a certified simulator solution [that] provides a vapor sample of known
3 alcohol concentration.” Without (1) “a certified simulator solution” that (2) “provides a vapor
4 sample of known alcohol concentration”, compliance with WAC 448-16-050 cannot be
5 established.

6 As discussed above, given the software errors discovered by the Lab, not a single Field
7 solution batch numbered 07025 or lower complied with the Toxicologist’s protocols prior to the
8 Gullberg/Denton review in October 2007. Accordingly, none of these solutions was properly
9 certified at the time of the administration of any breath test administered prior to October 2007.
10 Moreover, because Formoso’s and Pemberton’s testing of data for Gordon was also a violation
11 of the protocols, no certification where this took place is valid either. No test performed utilizing
12 a solution falling into either of these categories was done with a properly certified simulator
13 solution.

14 Nor are these errors without effect. Because either too much (perjury) or too little
15 (programming) data was included, none of these certifications can be expected to provide the
16 correct EVC. Thus, at the time of any given test administered prior to October, none of these
17 solutions was capable of “providing a vapor sample of known alcohol concentration”.
18 Accordingly, not a single one of these tests has been performed in compliance with the
19 requirements of WAC 448-16-050.

20 In this context, it is critical to remember that changes as small as .0001 can have a
21 significant impact when test results are near a .02, .04, .08 or .15, with respect to whether the
22 mean of two test result is within $\pm 10\%$ of each other or whether the external standard test falls
23 within .072 - .088.

In addition to these large category violations, we have seen several individual examples of protocol violations that would make a significant impact. These include:⁵⁹⁹

Solution	# of tests affected	Protocol Violation
02018	2,018	Mixing up solutions (Field solution)
02019	7,928	Mixing up solutions (QAP solution)
05008	1,679	AC outside QAP cert. range (Field solution used for QAP)
06003	392	AC outside QAP cert. range (Field solution used for QAP)
06028	3,445	Valid Data discarded (QAP solution)
06037	2,691	Wrong EVC (QAP solution – violates breath section protocols)
06043	???	ISTD area of internal standard for blank was less than 900 (Field solution)
06048	21	Programming error / AC outside QAP cert. range (Field Solution used for QAP)
Total	18,174+	

Each of the violations noted herein, the general and specific, significantly affects the accuracy and reliability of breath test results. Accordingly, every test administered utilizing these solutions must be suppressed pursuant to ER 702 and ER 703.

E. BREATH TESTS FAIL TO SATISFY THE DUE PROCESS STANDARD OF RELIABILITY

DUI “defendants are entitled to much more than protection against perjury” under the Fourteenth Amendment. *California v. Trombetta*, 467 U.S. 479, 485, 104 S.Ct. 2528 (1984). “The private interest in the accuracy of a criminal proceeding that places an individual's life or liberty at risk is almost uniquely compelling.” *Ake v. Oklahoma*, 470 U.S. 68, 78, 105 S.Ct. 1087 (1985). Accordingly, “a primary function of legal process is to minimize the risk of erroneous decisions.” *Mackey v. Montrym*, 443 U.S. 1, 7, 99 S.Ct. 2612 (1979); *Carey v. Piphus*, 435 U.S. 247, 259, 98 S.Ct. 1042 (1978). Practices that directly threaten the accuracy of the fact-finding process betray these concerns and generally run afoul of due process requirements.⁶⁰⁰ *See e.g.*, *Thompson v. Louisville*, 362 U.S. 199, 80 S.Ct. 624 (1960); *Tot v. United States*, 319 U.S. 463, 63 S.Ct. 1241 (1943); *Mooney v. Holohan*, 294 U.S. 103, 55 S.Ct. 340 (1935). Due process

⁵⁹⁹ This is not an exhaustive count. It is merely what the defense has been able to discover to date.

⁶⁰⁰ *State v. Ferguson*, 2 S.W.3d 912, 914 n.3 (Tenn. 1999)(“As a general rule...a trial lacks fundamental fairness where there are errors which call into question the reliability of the outcome.”).

1 requires that evidence be excluded wherever it is “essential to safeguard the integrity of the truth-
2 seeking process.”⁶⁰¹ *Brewer v. Williams*, 430 U.S. 387, 425, 97 S.Ct. 1232 (1977)(Burger, J.,
3 dissenting); *Moore v. Illinois*, 434 U.S. 220, 227, 98 S.Ct. 458 (1977).

4 “State and Federal Governments unquestionably have a legitimate interest in ensuring
5 that reliable evidence is presented to the trier of fact in a criminal trial.” *U.S. v. Scheffer*, 523
6 U.S. 303, 309, 118 S.Ct. 1261 (1998). In fact, Washington Courts “deem particularly offensive
7 to the concept of fairness a proceeding in which evidence is allowed which lacks reliability.”
8 *State v. Bartholomew*, 101 Wn.2d 631, 640 (1984)(rev’d on other grounds, *Wood v.*
9 *Bartholomew*, 516 U.S. 1, 116 S.Ct. 7 (1995)). The reason is that “[t]he integrity of the
10 adversary process depends both on the presentation of reliable evidence and the rejection of
11 unreliable evidence.”⁶⁰² *Taylor v. Illinois*, 484 U.S. 400, 414-5, 108 S.Ct. 646 (1988). As a
12 result, “reliability is the linchpin in determining the admissibility” of evidence under the
13 Fourteenth Amendment.⁶⁰³ *Manson v. Brathwaite*, 432 U.S. 98, 114, 97 S.Ct. 2243 (1977). Due
14 process does not permit a conviction based on evidence lacking the requisite degree of reliability.
15 *California v. Green*, 399 U.S. 149, 163 n.15, 90 S.Ct. 1930 (1970); *Green*, 399 U.S. at 186 n.20
16 (Harlan, J., concurring). Exclusion of evidence is appropriate where it serves the legitimate
17 interest of “ensuring that only reliable evidence is introduced at trial.” *Scheffer*, 523 U.S. at 309.

18 Under these principles, “constitutional due process clearly requires courts to take a hard

19 ⁶⁰¹ *State v. Michaels*, 642 A.2d 1372, 1381 (N.J. 1994) (To satisfy due process, “[C]ourt has a responsibility to
20 ensure that evidence admitted at trial is sufficiently reliable.”); *State v. Haley*, 689 A.2d 671, 674 (N.H. 1997)(“The
private interest affected by a pretrial hearing on the admissibility of evidence is important because...a conviction
may hinge on the admission or exclusion of certain evidence.”).

21 ⁶⁰² *Bolden v. State*, 967 S.W.2d 895, 899 (Tex.App. 1998)(In determining whether a state’s rule of evidence violates
22 due process, “[T]he social interest involved...requires consideration be given to the integrity of the adversary
process, which depends both on the presentation of reliable evidence and the rejection of unreliable evidence, the
interest in fair and efficient administration of justice, and the potential prejudice to the truth-determining function of
the trial process.”). *Bellotti*, 435 U.S. at 789 (“Preservation of the individual citizen’s confidence in government is
23 [of the highest] important[ce].”).

24 ⁶⁰³ *State v. Michaels*, 642 A.2d 1372, 1381 (N.J. 1994)(“Competent and reliable evidence remains at the foundation
of a fair trial, which seeks ultimately to determine the truth about criminal culpability. If crucial inculpatory
evidence is alleged to have been derived from unreliable sources due process interests are at risk.”).

1 look at the admissibility of scientific test evidence that is regularly used against citizens in
2 criminal and administrative cases by the State.” *Dilliner*, 569 S.E.2d at 224 (Starcher, J.,
3 concurring). In particular, in a prosecution for DUI, “our legal system has a particularly strong
4 ‘basic fairness’ obligation to see that the evidence that is regularly used by the State...meets a
5 threshold of well-established scientific reliability.” *Id.*

6 Forensic breath “test results are ‘virtually dispositive of guilt or innocence.’”
7 *Cruikshank*, 2 P.3d at 104.⁶⁰⁴ This is so even where the state is not prosecuting under the *per se*
8 prong of a DUI statute because most jurors “would conclude that a person with [a] reading [in
9 excess of the *per se* limit] was intoxicated when it was taken, in the absence of substantial
10 evidence to the contrary.” *McElroy*, 568 So.2d at 1016-7. “Since the presentation of
11 countervailing evidence would be necessary to dissuade the fact-finder of the defendant’s guilt,
12 the effect of introducing [breath test] evidence [is that] The burden of proof is shifted to the
13 defendant.” *Id.* Absent countervailing evidence, “[a] citizen’s right to drive, and sometimes to
14 liberty, will depend on the verdict of a machine.”⁶⁰⁵ *Garthe*, 678 A.2d at 158. Accordingly,
15 “[i]n order for the results of a blood alcohol test to be admissible, the state must prove that the
16 reliability of the test satisfies due process and fairness.” *State v. Honeyman*, 560 So.2d 825, 829
17 (La. 1990).

18 By this point it is hard to say anything without repeating oneself. Deceit, incompetence,
19 carelessness, failure to follow the most rudimentary of scientific safeguards or adhere to
20 generally accepted scientific methodology...how much worse could it possibly get? The
21 question is not if, but how seriously the evidence produced in this manner threatens the accuracy

22 _____
23 ⁶⁰⁴ See also, *Jayne*, 24 P.3d at 926 (“[G]iven the significant weight that a jury is likely to accord this type of
evidence (urinalysis test) the potential for prejudice...is high.”).

24 ⁶⁰⁵ “Evidence perceived by lay jurors to be scientific in nature possesses an unusually high degree of persuasive
power.” *O’Key*, 899 P.2d at 672. In fact “scientific proof may in some instances assume a posture of mystic
infallibility in the eyes of a jury of laymen.” *Addison*, 498 F.2d at 744.

1 and integrity of the truth-seeking process? Would you allow someone to operate on your child,
2 spouse or other loved one with instruments prepared and certified in such a manner? Then how
3 can one justify putting a Citizen's liberty under the knife of such evidence. Clearly, any
4 evidence concerning simulator solutions, or breath test results dependant thereon, lacks the
5 requisite degree of reliability to satisfy the constraints of due process. Accordingly, due process
6 requires that the breath test in the matter before the court be suppressed.

7 F. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)

8 1. AS APPLIED TO THE FACTS SUB JUDICE RCW 46.61.506(4)(b) IS VIOLATIVE OF DUE PROCESS

9 RCW 46.61.506(4)(b) states that, in determining the admissibility of a breath test:

10 For purposes of this section...In assessing whether there is sufficient evidence of
11 the foundational facts, the court or administrative tribunal is to assume the truth of
12 the prosecution's or department's evidence and all reasonable inferences from it in
13 a light most favorable to the prosecution or department.

14 RCW 46.61.506(4)(b).

15 By its plain language, this directive applies only to determinations under RCW 46.61.506
16 and has no application to any determination made pursuant to any other provision or Rule.⁶⁰⁶
17 Strictly in the context of RCW 46.61.506 determinations, though, it requires the court to assume
18 the truth of the prosecution's evidence in assessing whether the evidence is sufficient to establish
19 the admissibility of a breath test. Enforcement of this command under the facts before the Court
20 would be fundamentally unfair and violate the requirement for the appearance of fairness.

21 a. AS APPLIED CHALLENGES TO THE CONSTITUTIONALITY OF A STATUTE

22 "A statute constitutional on its face may violate constitutional rights in its application."
23
24

⁶⁰⁶ "In judicial interpretation of statutes, the first rule is 'the court should assume that the legislature means exactly what it says.'" *State v. McCraw*, 127 Wn.2d 281, 288 (1995). "The number of each section of [the RCW] is made up of three parts, in sequence as follows: Number of title; number of chapter within the title; number of section within the chapter. Thus RCW 1.04.020 is Title 1, chapter 4, section 20." *City of Kent v. Beigh*, 145 Wn.2d 33, 38, 32 P.3d 258 (2001)(quoting PREFACE TO REVISED CODE OF WASHINGTON at iii (2000)).

1 *Hontz v. State*, 105 Wn.2d 302, 305 (1986). “An as-applied challenge to the constitutional
2 validity of a statute is characterized by a party’s allegation that application of the statute in the
3 specific context of the party’s actions...is unconstitutional.” *City of Redmond v. Moore*, 151
4 Wn.2d 664, 668-9 (2004); *Washington State Republican Party v. Washington State Public*
5 *Disclosure Com’n*, 141 Wn.2d 245, 282 n.14 (2000). Finding a statute unconstitutional as-
6 applied does not render it inoperable, it simply “prohibits...application of the statute in [that
7 particular] context.” *Moore*, 151 Wn.2d at 669; *In re Detention of Turay*, 139 Wn.2d 379, 417
8 n.27 (1999).

9 b. ASSUMING THE TRUTH OF KNOWN PERJURY AND FALSE AND MISLEADING EVIDENCE

10 “The Fourteenth Amendment...operates to extend to the citizens and residents of the
11 states...protection against arbitrary state legislation affecting life, liberty, and property.” *Hibben*
12 *v. Smith*, 191 U.S. 310, 325, 24 S.Ct. 88 (1903). In this context, “[i]t is manifest that it was not
13 left to the legislative power to enact any process which might be devised. [Due process] is a
14 restraint on the legislative...powers of the government, and cannot be so construed as to leave
15 [the legislature] free to make any process ‘due process of law,’ by its mere will.”⁶⁰⁷ *Den ex dem.*
16 *Murray v. Hoboken Land & Imp. Co.*, 59 U.S. 272, 276, 15 L.Ed. 372 (1855); *State Bd. of Ins. v.*
17 *Todd Shipyards Corp.*, 370 U.S. 451, 457, 82 S.Ct. 1380 (1962)(“Congress...does not have the
18 final say as to what constitutes due process under the Fourteenth Amendment.”). “Every
19 procedure which...might lead [a judge] not to hold the balance nice, clear, and true between the
20 state and the accused denies the latter due process of law.” *Tumey v. State of Ohio*, 273 U.S.
21 510, 532, 47 S.Ct. 437 (1927).

22 “It goes without saying that preventing and dealing with crime is much more the business

23 ⁶⁰⁷ *Smith, Kline & French Laboratories v. State Tax Commission*, 403 P.2d 375, 378 (Or. 1965)(“Congress cannot
24 change the requirements of the Due Process Clause.”).

1 of the States than it is of the Federal Government...and that...it is normally ‘within the power of
2 the State to regulate procedures under which its laws are carried out, including [those pertaining
3 to] evidence.’” *Patterson v. New York*, 432 U.S. 197, 201, 97 S.Ct. 2319 (1977)(citations
4 omitted). Nonetheless, all phases of criminal proceedings in state courts are still subject to the
5 guarantee of due process contained in the Fourteenth Amendment. *Bartkus v. People of State of*
6 *Ill.*, 359 U.S. 121, 124, 79 S.Ct. 676 (1959).⁶⁰⁸ Accordingly, although Washington is free to
7 adopt and enforce rules of evidence, by statute or decision, such rules and their enforcement are
8 not exempt from the requirements of Due Process.⁶⁰⁹ *Lisenba*, 314 U.S. at 236; *See also*,
9 *Holmes v. South Carolina*, 547 U.S. 319, 324-5, 126 S.Ct. 1727 (2006); *Dutton v. Evans*, 400
10 U.S. 74, 97 and n.4, 91 S.Ct. 210 (1970)(Blackmun, J., concurring); *Tot v. United States*, 319
11 U.S. 463, 467, 63 S.Ct. 1241 (1943).

12 It is well “established that the fourteenth amendment forbids ‘fundamental unfairness in
13 the use of evidence whether true or false.’” *Blackburn v. State of Ala.*, 361 U.S. 199, 206, 80
14 S.Ct. 274 (1960) (*citing*, *Lisenba*, 314 U.S. at 236)). The aim is not necessarily to exclude
15 presumptively false evidence, but to prevent fundamental unfairness in the use of evidence
16 regardless of its truth value. *Id.*; *Jackson v. Denno*, 378 U.S. 368, 376, 84 S.Ct. 1774 (1964). As
17 discussed above, the use of false evidence or testimony to obtain a tainted conviction is
18 “fundamentally unfair” and antithetical to “any concept of ordered liberty.” *Napue*, 360 U.S. at
19

20 ⁶⁰⁸ Investigatory phase – *Stovall v. Denno*, 388 U.S. 293 (1967); *Rochin v. California*, 342 U.S. 165 (1952).
21 Scientific analysis of evidence – *Arizona v. Youngblood*, 488 U.S. 51 (1988). Charging phase – *Blackledge v.*
22 *Perry*, 417 U.S. 21 (1974); *U.S. v. Marion*, 404 U.S. 307 (1971). Discovery phase – *Pennsylvania v. Ritchie*, 480
23 U.S. 39 (1987); *U.S. v. Agurs*, 427 U.S. 97 (1976); *Wardius v. Oregon*, 412 U.S. 470 (1973); *Brady v. Maryland*,
373 U.S. 83 (1963). Pretrial motion to suppress phase – *Lego v. Twomey*, 404 U.S. 477 (1972); *Jackson v. Denno*,
378 U.S. 368 (1964). Trial phase – *U.S. v. Gagnon*, 470 U.S. 522 (1985); *Estelle v. Williams*, 425 U.S. 501 (1976);
Mayberry v. Pennsylvania, 400 U.S. 455 (1971); *Illinois v. Allen*, 397 U.S. 337 (1970). Plea phase – *Bordenkircher*
v. Hayes, 434 U.S. 357 (1978); *Henderson v. Morgan*, 426 U.S. 637 (1976); *Santobello v. New York*, 404 U.S. 257
(1971); *North Carolina v. Alford*, 400 U.S. 25 (1970); *Boykin v. Alabama*, 395 U.S. 238 (1969).

24 ⁶⁰⁹ “The only way to contest the validity of [statutorily approved scientific test is] to argue that the statutes violate
one’s right to due process of law.” 5 Lynn McLain, *Maryland Evidence* § 401.4(c), 278 (1987).

1 269; *LaPage*, 231 F.3d at 491. In this context it must be remembered that “[t]he most formidable
2 abridgment of due process guarantees...occurs where ‘lip service’ is paid to certain rights of the
3 accused as a mere formality, with the consequence that any substantive protection is woefully
4 lacking.” *Quesnell v. State*, 83 Wn.2d 224, 233-4 (1973). Thus, where the Government relies
5 upon such evidence in an action against a Citizen, “[o]ur law must not become so caught up in
6 procedural niceties that it fails to sort out simple instances of right from wrong and give some
7 redress for the latter.” *ABF Freight System, Inc. v. NLRB*, 510 U.S. 317, 325, 114 S. Ct. 835,
8 (1994)(KENNEDY, J. concurring).

9 Deceit, incompetence, carelessness, failure to follow the most rudimentary of scientific
10 safeguards or adhere to generally accepted scientific methodology. This is what has been proved
11 so far. The prosecution wants the Court to believe its okay for the Court to close its eyes and call
12 lies the truth simply because an ill-conceived statutory provision says so. And perhaps someday
13 the Legislature will enact a law that calls for the sentencing of Citizens prior to the returning of
14 verdicts just as the Red Queen in Alice’s Wonderland called for. But regardless of what the
15 Legislature may desire, the “courts...have a constitutional obligation to safeguard personal
16 liberties.” *Stone v. Powell*, 428 U.S. 465, 493 n.35, 96 S.Ct. 3037 (1976)(citing *Martin v.*
17 *Hunter’s Lessee*, 1 Wheat. 304, 341-344, 4 L.Ed. 97 (1816)). “Here...the firmness of the judicial
18 magistracy is of vast importance in mitigating the severity and confining the operation of such
19 laws...[it being the] inflexible and uniform adherence to the rights of the Constitution, and of
20 individuals, which we perceive to be indispensable in the courts of justice.” THE FEDERALIST
21 NO. 78 (Alexander Hamilton). This is not accomplished by slavish adherence to laws which
22 require the Court to presume the truth of that which it knows to be false.

23 If the Court wishes to, it will be easy enough to pay lip service to these principles, and
24

1 casually defer to the strict application of the statutory provision in question. Relying on mere
2 formalities, it will have divested Citizens of those fundamental substantive protections
3 guaranteed by our State and Federal Constitutions. On the other hand, it may take courage for
4 the Court to divorce itself from slavish obedience to procedural niceties, and perform the sacred
5 duty it exists to perform. But no law degree is needed to understand that to assume what is
6 obviously false to be true is wrong. And to do justice, this Court must be able to make the
7 simple distinction between that which is right and that which is wrong and prohibit the latter.
8 Nothing less can preserve Citizens' rights to fundamental fairness in these proceedings.

9 Application of RCW 46.61.506(4)(b) to the facts of these cases is wrong, fundamentally
10 unfair and violative of due process.

11 c. THE APPEARANCE OF FAIRNESS DOCTRINE

12 Next in importance to the duty of rendering a fair judgment is that of doing it in such a
13 manner that will not cause suspicion of the fairness and integrity of the proceedings. *State ex rel.*
14 *Barnard v. Board of Educ. of City of Seattle*, 19 Wn. 8, 18 (1898)(*quotation omitted*). “To
15 perform its high function in the best way ‘justice must satisfy the appearance of justice.’” *In re*
16 *Murchison*, 349 U.S. 133, 136, 75 S.Ct. 623 (1955). Accordingly, “[t]he United States Supreme
17 Court has stated that...procedural due process requires the appearance of fairness [in addition to]
18 fairness in fact.” *Westside Hilltop Survival Committee v. King County*, 96 Wn.2d 171, 181
19 (1981) (ROSELLINI, J. *concurring*)(citing, *Withrow v. Larkin*, 421 U.S. 35, 46, 95 S.Ct. 1456
20 (1975)). “Under the appearance of fairness doctrine, [Washington Courts] require[] that the
21 decision making process ‘not only (be) fair in substance, but fair in appearance as well.’” *Harris*
22 *v. Hornbaker*, 98 Wn.2d 650, 658 (1983); *Smith v. Skahit County*, 75 Wn.2d 715, 739 (1969);
23 *Amos Treat & Co. v. Securities and Exchange Commission*, 306 F.2d 260, 267 (D.C.Cir. 1962).

1 Application of the doctrine under Washington law “provides procedural protections
2 beyond the minimum requirements of the federal due process clauses.” *Washington State*
3 *Medical Disciplinary Board v. Johnston*, 99 Wn.2d 466, 478 (1983). The rule is “stringent” and
4 may “bar trial by judges who have no actual bias and who would do their very best to weigh the
5 scales of justice equally between contending parties.” *Moreno*, 147 Wn.2d at 507 (quoting,
6 *Murchison*, 349 U.S. at 136). “Every procedure which...might lead [a judge] not to hold the
7 balance nice, clear, and true between the state and the accused denies the latter due process of
8 law.” *Tumey*, 273 U.S. at 532.

9 [T]he evil sought to be remedied lies not only in the elimination of actual bias,
10 prejudice, improper influence or favoritism, but also in the curbing of conditions
11 which, by their very existence, tend to create suspicion, generate
misinterpretation, and cast a pall of partiality, impropriety, conflict of interest or
prejudgment over the proceedings to which they relate.

12 *Harris*, 98 Wn.2d at 658.

13 Again, deceit, incompetence, carelessness, failure to follow the most rudimentary of
14 scientific safeguards or adhere to generally accepted scientific methodology. This is what has
15 been proved so far. No law degree is required to understand that to assume the truth of
16 something the Court knows to be false has, at the very least, the appearance of being wrong, of
17 being fundamentally unfair. How is the common Citizen to interpret this? No reasonably
18 prudent and disinterested observer could conclude that Citizen’s being prosecuted under this
19 provision had obtained a fair, impartial, and neutral hearing. Accordingly, application of RCW
20 46.61.506(4)(b) to the facts of these cases would violate the appearance of fairness doctrine
21 encompassed by due process.

22 2. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)(vi)

23 “A breath test...shall be admissible at trial...if the prosecution...produces prima facie
24

1 evidence [that]...The two breath samples agree to within plus or minus ten percent of their mean
2 to be determined by the method approved by the state toxicologist.” RCW 46.61.506(4)(a)(vi).
3 As discussed above, in order to determine whether this condition has been satisfied we must
4 know the bias associated with the particular DataMaster in question. Instrument bias as small as
5 .0001 can push the results of a Citizen’s test inside or outside $\pm 10\%$ of the mean regardless of
6 how high the BAC results are.⁶¹⁰

7 It is critical to note that in order to properly determine bias, we must start with an
8 accurate reference value for our simulator (QAP or Field) solution.⁶¹¹ Everything assumes that
9 that value has been determined correctly.⁶¹² If there is an error in that value, then our
10 determination of bias will be wrong.⁶¹³

11 As discussed thoroughly above, all of the issues now before the court, perjury,
12 malfunctioning software, programming errors, data entry errors, discarding valid data, using bad
13 data, failing to use weighted means, violation of protocols, etc..., all have been found to have
14 errors ranging from .0001 to at least .0015, and this is based on the incomplete review of a few
15 defense attorneys. And this ignores solutions such as 02018 and 02019 to which no value can
16 actually be assigned and DataMasters that were sent into the field even though they should have
17 failed their QAPs (based on QAPs associated with solution 06028).

18 The Lab still fails to report accurate EVCs for the solutions currently certified. As a
19 result, the State cannot establish a prima facie case that the requirements of RCW
20 46.61.506(4)(a)(vi) have been satisfied. Accordingly, the breath tests herein must be suppressed.

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22 ⁶¹⁰ Testimony of Rod Gullberg, KC1, p.94-7; KC2, p.171; Testimony of Trooper Ken Denton, KC3, p. 52-4, 73-6;
23 173-4, 177; Testimony of Dr. Logan, KC5, p.82-3; KC Ex. 78, 80 & 85.

⁶¹¹ Testimony of Rod Gullberg, KC2, p.66-7.

⁶¹² Testimony of Rod Gullberg, KC2, p.80.

⁶¹³ Testimony of Rod Gullberg, KC2, p.80-1; A1, p.115-6.

1 3. BREATH TEST INADMISSIBILITY UNDER RCW 46.61.506(4)(a)(vii)

2 “A breath test...shall be admissible at trial...if the prosecution...produces prima facie
3 evidence [that]...The simulator external standard result did lie between .072 to .088 inclusive.”
4 RCW 46.61.506(4)(a)(vii). As discussed above, in order to determine whether this condition has
5 been satisfied we must know the bias associated with the particular DataMaster in question.

6 Remember, bias affects the value reported by a DataMaster on an external standard test
7 the same way it does the values for an individual’s BAC.⁶¹⁴ Accordingly, when correcting for
8 even very small values of bias (.0001 or larger), an external test value originally falling just
9 within the statutorily mandated range of .072 – .088 may reasonably be expected to shift outside
10 that range rendering the test invalid.⁶¹⁵ This can happen regardless of how high a Citizen’s BAC
11 results are.⁶¹⁶

12 It is critical to note that in order to properly determine bias, we must start with an
13 accurate reference value for our simulator solution.⁶¹⁷ Everything assumes that that value has
14 been determined correctly.⁶¹⁸ If there is an error in that value, then our determination of bias
15 will be wrong.⁶¹⁹

16 As discussed thoroughly above, all of the issues now before the court, perjury,
17 malfunctioning software, programming errors, data entry errors, discarding valid data, using bad
18 data, failing to use weighted means, violation of protocols, etc..., all have been found to have
19 errors ranging from .0001 to at least .0015, and this is based on the incomplete review of a few
20 defense attorneys. And this ignores solutions such as 02018 and 02019 to which no value can

21 _____
⁶¹⁴ Testimony of Dr. Logan, KC4, p.50-1.

22 ⁶¹⁵ Testimony of Rod Gullberg, KC2, p.171; Testimony of Dr. Logan, KC4, p.51; Testimony of Trooper Denton,
KC3, p.50, 52-4, 71-6; KC Ex. 77-80, 84, 85.

23 ⁶¹⁶ Testimony of Rod Gullberg, KC2, p.171; Testimony of Ken Denton, KC3, p.52-4, 73-6; KC Ex. 78, 80 & 85.

24 ⁶¹⁷ Testimony of Rod Gullberg, KC2, p.66-7.

⁶¹⁸ Testimony of Rod Gullberg, KC2, p.80.

⁶¹⁹ Testimony of Rod Gullberg, KC2, p.80-1; A1, p.115-6.

1 actually be assigned and DataMasters that were sent into the field even though they should have
2 failed their QAPs (based on QAPs associated with solution 06028).

3 The Lab still fails to report accurate EVCs for the solutions currently certified. As a
4 result, the State cannot establish a prima facie case that the requirements of RCW
5 46.61.506(4)(a)(vii) have been satisfied. Accordingly, the breath tests herein must be
6 suppressed.

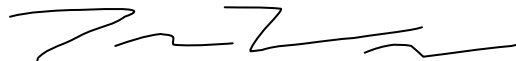
7 V. CONCLUSION

8 “Preservation of the individual citizen’s confidence in government is [of the highest]
9 important[ce].” *Bellotti*, 435 U.S. at 789.

10 “If the citizens of the State of Washington are to have any confidence in the breath-
11 testing program, that program has to have some credence in the scientific community as a
12 whole.” *Clark-Munoz*, 152 Wn.2d at 47.

13 “The most important consideration for [the Court] now is the preservation of the integrity
14 of the criminal justice system. We must handle these [] cases now before us in such a fashion
15 that the public, the defense bar, the prosecuting attorneys, and the courts of Washington will
16 clearly understand that we will not tolerate criminal convictions based on tainted evidence, but
17 will insist upon proper standards of conduct and procedure.” *Roche*, 114 Wn.App. at 446.

18 DATED this 11th day of February, 2008.

19 

20 Ted Vosk⁶²⁰, WSBA No. 30166
Attorney for the Defendant

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