APPENDIX A

2022 WL 221497
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Court of Criminal Appeals of Texas.

EX PARTE Areli ESCOBAR, Applicant

NO. WR-81,574-02
|
JANUARY 26, 2022

ON APPLICATION FOR WRIT OF HABEAS CORPUS, CAUSE NO. D-1-DC-09-301250 IN THE 167TH JUDICIAL DISTRICT COURT, TRAVIS COUNTY

ORDER

Per curiam.

***1** This is a subsequent application for a writ of habeas corpus filed pursuant to the provisions of Texas Code of Criminal Procedure Article 11.071, § 5.[1]

Applicant was convicted of murdering seventeen-year-old Bianca Maldonado Hernandez in the course of committing or attempting to commit aggravated sexual assault. Tex. Penal Code § 19.03(a)(2). Bianca, who shared an apartment with her mother, sister, and her infant son, lived in the same apartment complex as Applicant. At around 3:00 a.m. on the morning of May 31, 2009, Bianca's mother and sister left their apartment to deliver newspapers. When they returned around 7:00 a.m., they discovered that Bianca was dead. Her partially nude body was lying face-down on the floor of her living room next to her son, who was alive but covered in blood and motionless. Bianca had been beaten and stabbed over forty times. The medical examiner who conducted her autopsy concluded that Bianca also suffered injuries as a result of a large, hard object, not consistent with a male sexual organ, being forcefully inserted into her vagina and anus.

The State presented evidence that Applicant was at his apartment with friends and relatives around 2:00 a.m. on the date of the offense. Witnesses testified that Applicant did not appear to be injured at that time. Applicant's girlfriend, Zoe Moreno, testified that Applicant went outside the apartment at some point and did not return. Zoe left the apartment and attempted to call Applicant's cell phone several times as she drove home. On her fourth attempt, at around 4:12 a.m., Zoe's call went through and she heard moaning, grunting, and a female screaming, which led her to believe that Applicant was having sex with someone. Phone records indicated that this call "hit" a cellular tower close to the apartment complex where the offense occurred.

Between 5:00 and 5:30 a.m., Applicant drove his sister Nancy's rented Mazda vehicle to his mother's apartment. He was injured and was wearing bloody clothing, and he told his mother that he had been in a fight. He changed his clothes and went to see Nancy's boyfriend, "Tano," around 7:00 a.m. Applicant initially told Tano that he had "fucked up some woman," but he later changed his story and said that he had a fight with "some asshole." Tano texted Nancy and said Applicant told him that he had "f-ed up" and that some girl's blood was on his clothes. Applicant later told another sister that he had sex with a girl early that morning, but he denied hurting the girl. Applicant was arrested at his mother's apartment on June 2, 2009, after Zoe made an anonymous call to Crime Stoppers and her son called the police.

DNA evidence was analyzed by the Austin Police Department (APD) DNA Lab and Fairfax Identity Laboratories. The evidence at trial showed that Bianca could not be excluded as a contributor to multiple mixed-source DNA samples from the shoes and clothing Applicant wore and the Mazda vehicle he drove on the date of the offense. Applicant could not be excluded as a contributor to a mixed-source DNA sample from the doorknob lock of Bianca's interior front door. In addition, Bianca's DNA profile was consistent with two single-source DNA samples from Applicant's shoes.

***2** The State also presented evidence that Applicant's shoe could not be excluded as a possible contributor to a shoe print found at the crime scene. In addition, a latent print on a lotion bottle near Bianca's body was identified to the ring finger of Applicant's left hand.

A jury found Applicant guilty of the offense of capital murder in May 2011. At punishment, the jury answered the special issues submitted pursuant to Texas Code of Criminal Procedure Article 37.071, and the trial court, accordingly, set Applicant's punishment at death. This Court affirmed Applicant's conviction and sentence on direct appeal. *Escobar v. State,* No. AP-76,571 (Tex. Crim. App. Nov. 20, 2013)

(not designated for publication). This Court denied relief on Applicant's initial post-conviction application for a writ of habeas corpus. *Ex parte Escobar,* No. WR-81,574-01 (Tex. Crim. App. Feb. 24, 2016)(not designated for publication).

On February 10, 2017, Applicant filed in the trial court this subsequent application for a writ of habeas corpus. Applicant presents six claims in this application in which he challenges the validity of his conviction and resulting sentence. In October 2017, we held that Applicant "satisfie[d] the requirements of Article 11.071, § 5(a)" for some of his claims. Therefore, we remanded this application for the trial court to consider Applicant's claims that: he is entitled to relief under Article 11.073 "because new scientific evidence reveals that the State relied on scientifically unreliable and false DNA evidence to secure [his] conviction" (Claim One); his "right to due process was violated by the State's presentation of unreliable, misleading and false DNA testimony during the guilt phase of trial" (Claim Two); the State violated *Brady*[2] by "failing to disclose materials that significantly undermined the reliability and validity of the DNA evidence" (Claim Three); and he is entitled to relief under Article 11.073 "because new scientific evidence reveals that the State relied on scientifically unreliable fingerprint identification evidence to secure [his] conviction" (Claim Four). We also ordered the trial court to consider "that portion of [Claim Six] in which [A]pplicant asserts that the State violated his right to due process by present[ing] misleading testimony about his proximity to the murder scene based on cell-tower location information[.]" After holding a hearing on these claims, the trial court signed findings of fact and conclusions of law recommending that relief be granted on Claims One and Two. We disagree.

In Claim One, Applicant contends that he is entitled to relief under Article 11.073 because the DNA evidence presented at his trial has been invalidated by: (1) "scientific developments in DNA mixture interpretation protocols" in 2015, and (2) the discovery of "systemic flaws" in the APD DNA Lab's operations when the Texas Forensic Science Commission (TFSC) audited the lab in 2016.

Article 11.073 provides that an applicant is entitled to post-conviction writ relief if he can prove that:

> (1) Relevant scientific evidence is currently available and was not available at the time of the convicted person's trial because the evidence was not ascertainable through the exercise of reasonable diligence by the convicted person before the date of or during the convicted person's trial;
>
> ***3** (2) The scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date of the application; and
>
> (3) The court must make findings of the foregoing and also find that, had the scientific evidence been presented at trial, on the preponderance of the evidence the person would not have been convicted.

Art. 11.073(b)(1) & (2). When assessing reasonable diligence, "the court shall consider whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based" has changed since the date of trial (for a determination with respect to an original application) or the date upon which a previous application was filed (for a determination made with respect to a subsequent application). Art. 11.073(d).

Applicant has failed to meet these requirements. The State has presented updated DNA statistics from Dr. Bruce Budowle and Mitotyping Technologies that have been recalculated under current standards. When Budowle and Mitotyping reviewed the DNA findings from APD and Fairfax, they concluded that some of the mixed-source samples were inconclusive or inadequate for comparison. However, they concluded that Bianca was still included as a contributor to other mixed-source samples, and her DNA profile was still consistent with the single-source samples in this case. Therefore, the recalculated results continue to show that Bianca's DNA was at least on Applicant's shoes and in the Mazda.

The trial court finds that the "evidence handling issues" discovered in the TFSC audit render all of the DNA samples that were "collected, processed, and stored" by the APD DNA Lab unreliable, and the "downstream effects of APD's evidence handling issues" make all of the subsequent DNA analysis unreliable as well. Applicant, however, has failed to show that the general deficiencies discovered in the TFSC audit specifically affected the DNA results in his particular case. Even if the recalculated statistics and the evidence undermining the reliability of the DNA samples had been presented at trial, Applicant has not shown that "on the preponderance of the evidence [he] would not have been convicted." Art. 11.073(b)(2). The State presented other evidence to support Applicant's conviction for capital murder, including the latent print on the lotion bottle, the cell phone

evidence, the shoe print, Zoe's testimony, and Applicant's statements and appearance after the offense.

With regard to Claim Two, Applicant must show by a preponderance of the evidence that (1) false evidence was presented at his trial and (2) the false evidence was material to the jury's verdict. *Ex parte Weinstein,* 421 S.W.3d 656, 665 (Tex. Crim. App. 2014). We review factual findings concerning whether a witness's testimony is false under a deferential standard, but we review *de novo* the ultimate legal conclusion of whether such testimony was "material." *Id.* at 664. False testimony is "material" only if there is a "reasonable likelihood" that it affected the judgment of the jury. *Id.* at 665.

Applicant alleges in Claim Two that the recalculated DNA results show that Elizabeth Morris, a DNA analyst at the APD DNA Lab, and Marisa Roe, a DNA analyst at Fairfax Identity Laboratories, falsely testified about the DNA results at trial.[3] He also contends that the TFSC audit proves that Dr. Mitchell Holland, an expert witness in the field of DNA analysis, and Morris "gave the jury the false impression that because APD was an accredited laboratory, the lab followed accepted scientific methods." Applicant cannot show that this evidence is material because the recalculated statistics for some of the DNA samples are still incriminating to Applicant. The State also relied on: Zoe's testimony; eyewitness accounts of Applicant's statements and appearance after the offense; and cell phone, fingerprint, and shoe print evidence linking Applicant to the murder. Due to the combined strength of this evidence, Applicant has failed to show a reasonable likelihood that the challenged testimony affected the jury's judgment.

***4** The trial court found no merit to the rest of Applicant's remanded claims. We agree. Applicant's *Brady* claim fails because he has not met his burden to show that evidence was suppressed, favorable, and material.[4] *See Ex parte Lalonde,* 570 S.W.3d 716, 724 (Tex. Crim. App. 2019). Even if we assume that there are new scientific developments in fingerprint identification that were not earlier ascertainable through the exercise of reasonable diligence, Applicant's Article 11.073 claim fails because he cannot show that "had the scientific evidence been presented at trial, on the preponderance of the evidence [he] would not have been convicted." Art. 11.073(b)(1) & (2). Applicant's challenge to the State's "cell-tower" testimony also fails because he has not met his burden to demonstrate that this evidence was both false and material. *See Weinstein,* 421 S.W.3d at 665. Based upon our own review, we deny relief on Claims One through Four and the remanded portion of Claim Six.

In Claim Five, Applicant argues that the "prosecutor failed to disclose critical exculpatory evidence regarding the fingerprint testimony in [his] case which, coupled with all other disclosure violations committed by the prosecution in his case, affected the outcome of his trial" and violated his constitutional rights. In the remaining portion of Claim Six, Applicant asserts that State's witness Belinda Owens falsely testified that she had produced all cell phone records related to State's witness Xenis Prudencio. With regard to these claims, we find that Applicant has failed to satisfy the requirements of Article 11.071, § 5(a). Accordingly, we dismiss these claims as an abuse of the writ without reviewing the merits of these claims.

IT IS SO ORDERED THIS THE 26th DAY OF JANUARY, 2022.

All Citations

Not Reported in S.W. Rptr., 2022 WL 221497

Footnotes

1 Unless otherwise indicated, all references to Articles are to the Texas Code of Criminal Procedure.

2 *Brady v. Maryland,* 373 U.S. 83 (1963).

3 At the time of Applicant's trial, Roe's last name was Fahrner.

4 This includes the *Brady* allegations raised in Applicant's "Supplemental Facts and Exhibits in Support of Application for a Writ of Habeas Corpus" that we received on October 3, 2017.

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APPENDIX B

WR-81,574-02
D-1-DC-09-301250-A

EX PARTE	§	**IN THE 167th JUDICIAL**
	§	
	§	**DISTRICT COURT OF**
	§	
ARELI ESCOBAR	§	**TRAVIS COUNTY, TEXAS**

FINDINGS OF FACT AND CONCLUSIONS OF LAW AND ORDER TO TRANSMIT HABEAS CORPUS RECORD (ARTICLE 11.071 AND 11.073 POST CONVICTION APPLICATION)

Areli Escobar was convicted of capital murder and sentenced to death. His conviction was affirmed on direct appeal and his initial writ alleging jury misconduct was denied.

At his trial in 2011, the State relied heavily on forensic evidence to establish guilt. Subsequent developments in forensics and an audit by the Texas Forensic Science Commission, which caused the closing of the Austin Police Department's DNA lab, triggered the filing of this subsequent writ.

The Court of Criminal Appeals determined that Escobar had made a *prima facie* showing of being entitled to relief under Article 11.071 and 11.073 and remanded the matter to this court for consideration of several issues:

- whether newly available scientific evidence demonstrates that the State relied on scientifically unreliable and false DNA evidence;
- whether Escobar's right to due process was violated by the State's use of unreliable, misleading and false DNA evidence;
- whether Escobar's right to due process was violated by the State's failure to disclose *Brady* evidence;
- whether newly available scientific evidence demonstrates that the State utilized scientifically unreliable fingerprint identification evidence; and,
- whether Escobar's right to due process was violated by the use of false and misleading evidence concerning the location of Escobar's cell phone at the time of the murder.

The crux of this writ is the closure of the APD DNA lab. The evidence shows that the lab was closed and has not reopened because the scientific community, law enforcement, the local courts and the related governmental agencies came to the conclusion that the work of that lab was unreliable and the deficiencies were so systemic that it could not be re-constituted.

The court finds that newly available scientific evidence demonstrates that the DNA evidence relied upon for this conviction was scientifically unreliable. The court finds the use of that evidence violated Escobar's right to due process. The court found several Brady violations, none of which standing alone, would justify relief however. The court finds the fingerprint identification evidence admitted at trial was not scientifically unreliable but the terminology of

identification violates contemporary standards. The court finds the cell phone location evidence was not false or misleading but was seriously incomplete. The Court finds that neither the fingerprint evidence or the cell-phone-location evidence justify relief.

The Court finds that Applicant should be granted relief regarding Claims 1 and 2.

OVERVIEW

In the criminal justice community, DNA evidence is generally regarded as the gold standard of forensics. Such evidence is critical in cases such as this one: a stranger-on-stranger offense with no eyewitnesses or other information immediately implicating a suspect. DNA evidence is highly compelling for jurors.

> Indeed, some studies have shown that juror reliance on an expert's credentials is directly proportional to the complexity of the information represented: the more complex the information, the more the jury looks to the background, experience, and status of the expert himself rather than to the content of his testimony. *Coble v. State*, 330 S.W.3d 253, 276 (Tex. Crim. App. 2010).

Admission of expert testimony carries with it the imprimatur of the Court. That is, by identifying a witness as an expert, the Court essentially vouches for the trustworthiness of the testimony and enhances its importance to the jury.

Evidence that the DNA testimony in a particular case may not be trustworthy is, therefore, critical.

The Texas Forensics Commission conducted an audit of the APD DNA lab and issued a report which concluded that there were widespread, systemic deficiencies in the operation of the APD DNA lab. It was consequently closed and has no re-opened.

All eight of the then-sitting Travis County criminal district judges and all seven of the then-sitting judges of the criminal county courts at law signed a letter to the Austin City Council and the Travis County Commissioners Court in support of the creation of a new forensic lab independent of the Austin Police Department saying:

> As you have become aware, serious issues with the Austin Police Department's DNA Lab practices led to the closing of the lab after a two-day audit by the Texas Forensic Science Commission (TFSC). **The problems discovered raise questions about every determination made by the lab.** Issues focused on within that audit include: the contamination of evidence; the use of protocols not accepted by the scientific community; the use of measure in the lab that encouraged confirmation bias; and, other serious errors that might impact the validity of the results obtained. At that time, the lawyers, judges, and juries were unaware of these critical discrepancies. . .
>
> We, the District and County Court-at-Law Judges, unanimously believe that it is essential that the City of Austin and Travis County rely upon an independent lab for all forensic

> testing. This recommendation is based on three considerations: 1) national forensic best practices recommend that forensic investigations be independent of law enforcement**; 2) the integrity of the APD DNA lab has been so compromised that future use is deemed unreliable; and 3) the APD Lab has proven incapable of producing timely and reliable results.** We do believe that the independence of the lab is essential to the integrity of our criminal justice system and the fair and ethical administration of justice (emphasis added).

In a document entitled "DNA Mixture Calculation Crisis and Additional Problems with the APD Forensics Lab"[1], Travis County ADA Gregg Cox provided the following synopsis of the situation:

> During the review of the [statistics problem], it was discovered that the APD forensics lab had started using a quant-based stochastic threshold (ST) protocol in 2010 that was neither scientifically sound nor commonly accepted in the scientific community. The APD lab also used a process for determining which loci to use for statistical calculations that that depended upon alleles observed in a known profile, which many believe could lead to "suspect bias". **The faulty APD protocols, and unexplained deviations from those protocols, may have resulted in inaccurate results in cases. These problems, along with other questions about possible contamination events and training deficiencies, led to the APD Forensics Lab being shut down until the problems can be resolved**….**DPS has indicated that they will not test or review cases worked by the APD lab**…With cases that were worked by APD, we will have to turn to private labs if additional testing is needed. We currently have 148 pending cases where APD did some testing. …When the issues with the APD lab cropped up, we conducted a [review to assess the extent of the problem] and found that more than 6,700 lab reports had been issued by the APD lab. ….that filtered down to more than 4,900 cases. Those numbers are being analyzed now to determine how many resulted in any sort of adjudication or conviction so that Brady notices can be sent out (emphasis added).

When questioned by the Court about his level of confidence in work performed by the APD DNA lab, the State's expert, Dr. Bruce Budowle, stated that he would have a low expectation that the lab could do reliable work.

PROCEDURAL BACKGROUND AND GENERAL CASE HISTORY

1. Applicant was convicted by a jury of the capital murder of Bianca Maldonado Hernandez, committed on or about May 31, 2009. 22-27 RR; 28 RR 94; 2 CR 295.[2]

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[1] This memo was received by the Court as a part of a group of documents in an unrelated matter. Those documents were reportedly produced by the DA's office in response to an open records request. The Court recognized the potential importance of this memo and transmitted it to the parties with a disclaimer as to authentication. ADA Cox, then then head of a division in the DA's office, initially denied knowledge of the memo but subsequently acknowledged authorship and then asserted it was outside the scope of his duties. The Court found his statements inconsistent and self-serving thereby diminishing the credibility of his denial/recantation. Affidavits from two other ADA's (Robert Smith and Brandon Grunewald) corroborated contents of the memo.

[2] All references to "CR" are to the Clerk's Record in Mr. Escobar's underlying capital trial. All references to "RR"

Based upon the jury's answers to the two punishment issues submitted, the trial judge sentenced Applicant to death. 33 RR 93; CR 313-314. On November 20, 2013, the Texas Court of Criminal Appeals affirmed Applicant's conviction upon his automatic direct appeal. *Escobar v. State*, 2013 Tex. Crim. App. Unpub. LEXIS 1238 (Tex. Crim. App. Nov. 20, 2013).

2. Applicant filed his initial post-conviction application for writ of habeas corpus in May of 2013 and the Texas Court of Criminal Appeals denied relief on February 24, 2016. *Ex parte Escobar*, 2016 Tex. Crim. App. Unpub. LEXIS 244 (Tex. Crim. App., Feb. 24, 2016).

3. Applicant filed a subsequent post-conviction application for writ of habeas corpus on February 15, 2017. In an order issued on October 18, 2017, the Texas Court of Criminal Appeals remanded Applicant's claims "1 through 4" and part of claim 6 to the habeas court. See *Ex parte Escobar*, No. WR-81,574-02, 2017 Tex. Crim. App. Unpub. LEXIS 747, at *2 (Tex. Crim. App. Oct. 18, 2017) (not designated for publication).

4. A detailed recitation of the facts of the case is not necessary for the determination of this writ but may be found at *Escobar v. State*, AP-76,571, 2013 WL 6098015, at *1–3 (Tex. Crim. App. Nov. 20, 2013). A brief summary is helpful in understanding the context of the issues presented. Seventeen-year-old Bianca Maldonado was stabbed 43 times and cut 30 times. She was brutally sexually assaulted with some unknown object which was never identified or recovered. Bianca's mother and sister found her dead on the living room carpet, covered in blood when they returned from delivering newspapers. Next to her body was her infant son, who survived. Police recovered multiple items of potential evidence from the scene, including bloodstains, a bloodstained lotion bottle with a fingerprint, a shoe-print impression, and bloodstains from the front door. There was no sign of forced entry. There were no eyewitnesses. This was a stranger-on-stranger offense. Escobar, who lived in the same apartment complex as Bianca, became a suspect when his girlfriend reported that she had attempted to call him on his cell phone multiple times without success but that there had been one phone connection during which she heard sounds she associated with sexual activity and then a woman screaming. The morning of the murder, Escobar appeared at his mother's home, injured and wearing bloody clothing. He said he had been in a fight. His mother washed his clothing. He later made statements concerning having had sex with a woman earlier that morning.

5. The State presented three days of forensic testimony from a series of lab witnesses and expert witnesses. 25 RR – 27 RR. The jury heard the following evidence:

    - The left Polo shoe seized from Mr. Escobar's bedroom had a similar tread design

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are to the Reporter's Record from trial. References to the transcript of the initial post-conviction hearing held March 31-April 1, 2014 will be designated EH1RR. Transcripts of the post-conviction hearing held from May 30, 2018 through September 29, 2020 will be designated EH2RR. Applicant's exhibits admitted during the initial post-conviction evidentiary hearing are designated as "AppX." Applicant's exhibits admitted during the subsequent post-conviction evidentiary hearing from May 30, 2018 to September 29, 2020 are designated as "App2X." The State's exhibits admitted during these post-conviction proceedings are designated as "SW2X." Applicant's exhibits at trial are designated as "DX." State's exhibits at trial are designated as "SX."

to an impression left in blood on Ms. Maldonado's carpet, like thousands of other shoes. 25 RR 25-51.

- Mr. Escobar's cell phone signal was bouncing off two cell towers on either side of 7000 Decker Lane between 2:23 and 4:37 A.M. 25 RR 80; 25 RR 143-6; SX 382.
- Elizabeth Morris, a DNA analyst at the Austin Police DNA Lab ("APD DNA lab"), found Ms. Maldonado could not be excluded as a contributor to seven (7) DNA samples taken from Mr. Escobar's clothing: five (5) samples collected from the Polo shoes seized from his home, one DNA sample collected from the Lee jeans also collected from his home, and one DNA sample collected from the Nautica shirt collected from his mother's residence. 26 RR 135-40, 143-50; SX 399.
- APD DNA analyst and serologist Diana Morales collected samples from the inside door lock from Ms. Maldonado's apartment. The APD DNA lab could not identify Mr. Escobar's DNA on the samples. 26 RR 151-52; SX 399.
- The jury was told that the APD DNA lab was an accredited lab with protocols based on sound scientific principles that had been validated. 26 RR 115.
- Additional DNA testing was conducted by a private laboratory, Fairfax Identity Laboratories ("FIL"). Fairfax analyst Marisa Roe[3] confirmed the APD DNA lab's results for the Polo shoes. 26 RR 167-76; SX 449.
- Ms. Roe found Ms. Maldonado could not be excluded as a contributor to two DNA samples that the APD lab collected from the Nautica shirt and one additional sample that she collected from the shirt. 26 RR 178-84.
- Ms. Roe found Mr. Escobar could not be excluded as a contributor to one DNA sample APD collected from the interior doorknob of Ms. Maldonado's apartment. She found three instances of the same DNA profile in a DNA database containing 11,393 profiles. 26 RR 184-86, 196.
- Ms. Roe found Ms. Maldonado could not be excluded from two mixed-profile DNA samples APD collected from the Mazda Protégé that Mr. Escobar was seen driving on the day of Ms. Maldonado's murder. 26 RR 191-3.
- APD latent print analyst Sandra Siegel testified that a "low quality" latent print found on the lotion bottle next to Ms. Maldonado's body (Item 132.9) was "identical" to the middle joint of Mr. Escobar's left ring finger. 27 RR 71, 74-5, 89. Supervisor Richard Pickell confirmed her conclusion. 27 RR 99.

6. When the State presented the latent print testimony, lead Detective Scanlon had already testified there were no positive results for the latent prints found in Ms. Maldonado's apartment. 25 RR 195-6. In September 2009, Ms. Siegel had originally excluded Mr. Escobar as the source of all latent prints found at Ms. Maldonado's apartment, including the print found on the lotion bottle (Item 132.9). *Id*. at 62, 68. Nonetheless, mid-trial, APD latent print examiner Sandy Siegel decided to re-examine Item 132.9. 27 RR 71-75,

[3] At the time of her trial testimony, Ms. Roe's last name was Fahrner.

89. During this last-minute examination, Ms. Siegel and APD latent print examiner Richard Pickell determined that Item 132.9 and the joint of Mr. Escobar's left ring finger were a "match." 27 RR 99.

7. Defense counsel did not call any witnesses during this phase of the trial. 28 RR 7.

8. In closing argument, the State argued that the forensic evidence served as pieces of a puzzle that taken together, showed Mr. Escobar committed capital murder. 28 RR 25-6. The State told the jury they were lucky because they got to hear DNA evidence, and that each individual DNA sample was a "key piece" of the puzzle proving Mr. Escobar's culpability. 28 RR 26-37. They also described the latent print as the "piece[] of the puzzle" that placed Mr. Escobar inside Ms. Maldonado's apartment. 28 RR 37. According to the State, the forensics alone were enough to convict Mr. Escobar. 28 RR 39. In response, defense counsel pointed out the inconsistencies between Zoe Lopez's changing versions of what she heard on the phone that morning, the inconsistent findings in relation to the latent print, and issues with the DNA databases used in this case. 28 RR 46-60. In rebuttal, the State argued there was no single piece of evidence that could tell the jury what happened, **but each piece of DNA evidence was material to determining Mr. Escobar's culpability**. 28 RR 65, 78. The State further argued that Mr. Escobar's cell phone "bouncing off two cell towers" on either side of Ms. Maldonado's apartment complex was consistent with him being in her apartment at the time of her murder, yet another "piece of the puzzle" proving his culpability. 28 RR 73 (emphasis supplied).

9. That same day, on May 13, 2011, the jury returned its verdict finding Mr. Escobar guilty of capital murder. 28 RR 94. Seven days later, the jury returned answers to the capital-sentencing special issues and Mr. Escobar was sentenced to death. 33 RR 91-94; see also CR 308-11.

10. On May 31, 2011, the trial court appointed the Office of Capital and Forensic Writs (then the Office of Capital Writs) to represent Mr. Escobar in his post-conviction litigation. CR 320.

11. In 2012, Judge Lynch retired from the bench after Judge David Wahlberg was elected to the Travis County 167th Judicial District Court.

12. Mr. Escobar filed his initial application for a writ of habeas corpus in the 167th Judicial District Court on May 30, 2013. Judge Lynch presided over Mr. Escobar's initial writ proceedings. On November 20, 2013 the Court of Criminal Appeals of Texas ("CCA") affirmed Mr. Escobar's judgement on direct appeal. *Escobar v. State*, 2013 Tex. Crim. App. Unpub. LEXIS 1238 (Tex. Crim. App. Nov. 20, 2013). On December 31, 2014, following an evidentiary hearing on Mr. Escobar's claim of juror misconduct, visiting Judge Lynch entered his findings of fact and conclusions of law, recommending that relief be denied on all claims. CR 1795-1820. The CCA adopted Judge Lynch's findings and denied relief on February 24, 2016. *Ex parte Escobar*, No. WR-81,574-01, 2016 Tex. Crim. App. Unpub. LEXIS 244 (Tex. Crim. App. Feb. 24, 2016).

13. In May 2015, the Federal Bureau of Investigations ("FBI") notified all CODIS labs, including the APD DNA lab, that it had identified discrepancies in the 1999 and 2001 STR population databases. 21 EH2RR 112. Following this, in August 2015, the Texas Forensic Science Commission ("TFSC") issued a letter to the Texas criminal justice community highlighting the concerns with DNA interpretation. 21 EH2RR 114; SW2X 17.

14. Recalculations were requested by the Travis County District Attorney's Office in order to determine the extent to which the original statistical results were affected by errors discovered, in May of 2015, in the FBI's allele frequency database, which had been widely used by crime laboratories to assign statistical significance to the possibility that a person's DNA profile was found on a piece of evidence.

15. In Applicant's case, the FBI database was used by both the APD DNA Lab and Fairfax Identity Labs to calculate statistical results on all evidentiary items subject to STR testing. 26 RR 22, 24, 153.

16. The Travis County District Attorney's Office also requested recalculations in a number of cases where the DNA analysis performed on evidence in those cases had been completed by labs that had not implemented revisions in their mixture interpretation protocols based on recommendations made in 2010 by the Scientific Working Group on DNA Analysis Methods ("SWGDM") in its publication Interpretation Guidelines for Autosomal STR Typing by Forensic DNA Testing Laboratories (2010). The Applicant's case fell into that category because the APD DNA Lab completed its analysis of the DNA in this case before SWGDAM's 2010 guidelines were published.

17. At the request of the Travis County District Attorney's Office, Dr. Bruce Budowle, professor and director of the Center for Human Identification at the University of North Texas Health Science Center in Fort Worth, Texas, reviewed the APD DNA Lab casefile for Applicant's case and, where necessary, revised the statistics obtained by APD DNA analyst Elizabeth Morris and relied on at trial by the State. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

18. Following an independent audit by the Texas Forensic Science Commission ("TFSC"), the DNA section of the APD lab suspended operation in June 2016 due to the numerous concerns about the lab's performance. App2X 144; App2X 195. Attachment J. The TFSC audit revealed significant unreliability issues, including the lab's use of unscientific standards to analyze DNA samples, multiple contamination incidents, and inadequate training and supervision of staff. App2X 144.

19. Two months later, Mitotyping Technologies ("Mitotyping), which by then had acquired Fairfax, issued an Amended Forensic Case Report in Mr. Escobar's case recalculating the statistics for some samples and calling others inadequate for comparison due to low levels of DNA. App2X 11.

20. In the following months, both OCFW and federal habeas counsel Walter C. Long sent

multiple disclosure requests to the Travis County DA's Office for materials related to the DNA evidence in Mr. Escobar's case. See Application for Writ of Habeas Corpus at 128 (filed February 10, 2017). In December 2016, the DA's Office provided over 25,000 pages of responsive materials (see App2X 22) and also subsequently provided counsel for Mr. Escobar the opportunity to conduct an "open file" review at the DA's Office. *Id*. In February 2017, in response to Mr. Escobar's request, the DA's Office disclosed its "work product" file to Mr. Long. Id. at 129.

21. On February 10, 2017, Mr. Escobar filed his Subsequent Application for Post-Conviction Writ of Habeas Corpus ("Subsequent Application"), raising six claims for relief under Texas Code Criminal Procedure articles 11.071, § 5(a), and 11.073.

22. Following the filing of Mr. Escobar's Subsequent Application, the Travis County DA's Office made a series of additional disclosures in March, April, and May 2017. *See Supplemental Facts and Exhibits in Support of Application for Writ of Habeas Corpus* at 7, 9, 12, 14, 15.

23. Mr. Escobar filed *Supplemental Facts and Exhibits in Support of Application for Writ of Habeas Corpus* on October 2, 2017. In the Supplemental Facts, Mr. Escobar memorialized the new, previously undisclosed evidence he had not possessed prior to filing the Subsequent Application.

24. On October 18, 2017, the CCA remanded to this Court five claims from Mr. Escobar's Subsequent Application for factual development and consideration on the merits. *Ex parte Escobar*, No. WR-81,574-02, 2017 Tex. Crim. App. Unpub. LEXIS 747 (Tex. Crim. App. Oct. 18, 2017). Specifically, the CCA remanded Claims One through Four and a portion of Claim Six relating to due process. *Id*. The remanded claims are:

> Claim One: Mr. Escobar is entitled to relief from judgement pursuant to Texas Code of Criminal Procedure Article 11.073 because new scientific evidence reveals that the State relied on scientifically unreliable and false DNA evidence to secure Mr. Escobar's conviction.
>
> Claim Two: Mr. Escobar's Fourteenth Amendment right to due process was violated by the State's presentation of unreliable, misleading, and false DNA testimony during the guilt phase of trial, in violation of *Napue v. Illinois*, 360 U.S. 264 (1959), and *Ex parte Chabot*, 300 S.W.3d 768 (Tex. Crim. App. 2009).
>
> Claim Three: The State violated Mr. Escobar's right to due process by failing to disclose materials that significantly undermined the reliability and validity of the DNA evidence, in violation of *Brady v. Maryland*, 373 U.S. 83 (1963).
>
> Claim Four: Mr. Escobar is entitled to relief from judgement pursuant to Texas Code of Criminal Procedure Article 11.073 because new scientific evidence reveals that the State relied on scientifically unreliable fingerprint identification evidence to secure Mr. Escobar's conviction.

> Claim Six: Mr. Escobar's Fourteenth Amendment right to due process was violated by the State's presentation of misleading and false testimony concerning cell phone and cell tower records, in violation of *Napue v. Illinois*, 360 U.S. 264 (1959), and *Ex parte Chabot*, 300 S.W.3d 768 (Tex. Crim. App. 2009).

25. On April 16, 2018, the State filed its Answer in response to Mr. Escobar's subsequent application.

26. On May 4, 2018, this Court entered an Order Designating Issues to be resolved at an evidentiary hearing.

27. Mr. Escobar's hearing commenced on May 30, 2018. On that day, Mr. Escobar offered into evidence Applicant's writ exhibits 1 through 58. 5 EH2RR 22. On September 6, 2018, this Court heard a portion of the evidentiary hearing concerning Claim Six. See 8 EH2RR. This Court heard testimony regarding Claim Four on March 18-19, 2019 and June 18-19, 2019, and admitted numerous exhibits relating to the claim. 13 EH2RR, 14 EH2RR, 15 EH2RR, 16 EH2RR. Finally, on July 20-21, 2020 and September 28-29, 2020, this Court heard live testimony and argument pertaining to Claims One, Two, and Three, and admitted into the record dozens of exhibits relating to those claims. 20 EH2RR, 21 EH2RR, 24 EH2RR, 25 EH2RR. Following the last day of live testimony, the parties offered, and the Court admitted, additional documentary evidence.

28. On May 17, 2017 and again on May 23, 2018, Travis County District Attorney ("DA") Margaret Moore sent letters to APD Assistant Chief Troy Gay about APD analyst Diana Morales, who performed the serology work in Mr. Escobar's case. App2X 53; App2X 192, Attachment B. The first letter, which Mr. Escobar received in discovery in February 2018, indicated the DA's Office would no longer sponsor Ms. Morales as an expert witness in DNA or serology. 3 EH2RR 5; App2X 53. Following the filing of the State's Answer, in a letter dated May 23, 2018, Ms. Moore retracted her position that the DA's Office would not sponsor Ms. Morales as an expert witness in serology. App2X 192, Attachment B.

29. Mr. Escobar repeatedly sought discovery related to the DA's change in position about using Diana Morales as a witness in serology. *Applicant's Motion for Disclosure* (filed March 7, 2018) at 2; *Applicant's Renewed Motion for Discovery* (filed June 4, 2018) at 2; *Mr. Escobar's Motion for Discovery That Is Relevant and Necessary for His Upcoming Hearing* (filed August 23, 2020) at 3-4; 7 EH2RR, 8 EH2RR. This Court heard argument in relation to that request on August 28, 2020. 28 EH2RR 14-18.

30. Finally, on September 29, 2020, the State informed this Court it had identified internal emails related to the two Moore letters. 24 EH2RR 7-8. The following day, the State notified this Court it had identified thirteen (13) documents totaling "fewer than 100 pages" which it wished to produce for *in camera* inspection pursuant to a protective order. 25 EH2RR 5, 16. After reviewing those 13 documents, this Court finds that there is a reasonable suspicion that the Travis County DA's Office changed its policy related to

Ms. Morales's testimony on serology for the specific purpose of avoiding *Brady* disclosure in this case. 26 EH2RR 21-25.

31. Without reaching the issue of whether the 13 emails are material or relevant to the claims currently before the Court, the Court finds that the contents of those emails are not determinative to the resolution of those claims. Accordingly, the Court declined to order disclosure of the emails to counsel for Mr. Escobar. The Court, however, recommends that the CCA review the emails, which are currently in the record under seal, to determine whether the contents of the emails impact its assessment of the claims involving the APD DNA evidence. Moreover, should the CCA find the emails contain *Brady* evidence, this Court recommends that the CCA remand this matter for further discovery and other appropriate proceedings.

32. The parties submitted their Proposed Findings of Fact and Conclusions of Law on November 25, 2020. This Court heard closing arguments on December 3, 2020.

33. This Court took judicial notice of all records and filings in the trial, appeal, and post-convictions proceedings. 8 EH2RR 10. This Court has considered all exhibits the parties submitted between May 30, 2018 and December 3, 2020 and which this Court has admitted into evidence. This Court has accepted all exhibits presented in the evidentiary hearings as substantive evidence, and has considered all testimonial evidence received during the live evidentiary hearings. Unless otherwise noted herein, the Court finds the above evidence to be credible.

34. The Court has weighed the credibility of witnesses who testified by affidavit or declaration solely based on the facts contained in their affidavits, including considerations of education and background for those witnesses presented as expert witnesses.

I. CLAIMS ONE & TWO: SCIENTIFICALLY UNRELIABLE AND FALSE DNA EVIDENCE USED TO CONVICT MR. ESCOBAR

35. In his first claim, Applicant alleges that new scientific evidence reveals that the State relied on scientifically unreliable and false DNA evidence at trial and is entitled to relief under Texas Code of Criminal Procedure Article 11.073. Applicant asserts that developments in DNA-mixture interpretation and new evidence regarding the problems with the APD lab renders the DNA evidence presented at trial unreliable. Applicant asserts that had this evidence been available at trial, it is unlikely he would have been convicted.

36. In his second claim, Applicant alleges that he is entitled to relief under the Due Process Clause of the 14th Amendment to the United States Constitution on the ground that the State used material, false testimony. He contends that testimony relied on by the State at trial regarding Stains B and D and FIL 03.4 from his Nautica shirt, Stain C from the doorknob lock inside Bianca's apartment and Stain M from his left Polo shoe has been contradicted by the recalculation report issued by Mitotyping Technologies. In addition,

Applicant alleges that he is entitled to relief on his due process claim because the 2016 audit of the APD DNA Lab by the TFSC disproves assertions made by State's witnesses at trial that the APD DNA Lab followed accepted scientific methods and procedures.

37. Because the facts relating to these two claims are inextricably intertwined, it is most efficient for the Court to consider the facts of the claims together.

A. The evidence considered

38. On July 20 and 21, 2020, this Court heard the live testimony of Mr. Escobar's DNA expert Dr. Dan Krane, Ph.D., and State's expert Dr. Bruce Budowle, Ph.D. On September 28, 2020, the Court heard live testimony from Travis County Assistant District Attorney Efrain De la Fuente and Gregg Cox, Director of Operations at the Travis County District Attorney's Office (hereinafter "Travis County DA's Office" or "DA's Office"). Due to the ongoing COVID-19 pandemic, these hearings were conducted via Zoom and livestreamed on YouTube, with all parties and witnesses appearing virtually. Additionally, throughout these proceedings the parties introduced, and the Court admitted, the testimony of multiple witnesses through affidavits or declarations, as well as nearly 300 documentary exhibits. App2X 1-202; SW2X 1-90.

B. General overview of forensic DNA testing and interpretation

39. The goal of forensic DNA testing is to determine whether DNA detected on crime scene evidence can be linked to a particular individual. App2X 144 (Texas Forensic Science Commission, FINAL AUDIT REPORT FOR AUSTIN POLICE DEPARTMENT FORENSIC SERVICES DIVISION DNA SECTION, July 8, 2016 ("TFSC report")) at 4. Dr. Krane testified that the most widely used form of DNA testing since the late 1990s is short tandem repeat or STR typing. 20 EH2RR 44. This process involves multiple steps including: collecting an evidence sample, extracting DNA from any biological material that might be present on the evidence sample, determining how much DNA has been isolated from the sample, and amplifying particular regions of the DNA that are likely to differ from one person to another. *Id.* at 43-44. After amplification, the DNA fragments are separated by a genetic analyzer using a process called capillary electrophoresis. The raw data is captured electronically and run through a software program that labels the data as peaks on a graph called an electropherogram. *Id*. at 44.

40. At each DNA region (referred to as a "locus") depicted on the electropherogram, each individual typically shows one or two peaks, corresponding to the alleles inherited from the individual's mother and father. 20 EH2RR 72. If the individual has one peak, the person is a homozygote, meaning that the individual inherited the same allele variant from both parents. *Id*. If two peaks are detected, the person is a heterozygote, meaning that the individual inherited different alleles from each parent. *Id*.

41. The final step of DNA testing is the interpretation of the electropherogram by a DNA analyst. 20 EH2RR 44. Generally speaking, the interpretation process involves identifying the unknown DNA profile or profiles present in the evidentiary sample and comparing

them to the known profiles of particular individuals and/or searching the unknown evidentiary profiles against the FBI's national DNA database. App2X 88 (President's Council of Advisors on Science and Technology, FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS ("PCAST report")) at 69-70. If a known person cannot be excluded from the evidentiary profile, a DNA analyst must attach a statistical significance to the probability that the person actually contributed to the profile. App2X 144 at 4. For single source profiles, the statistical significance is usually expressed in the form of a Random Match Probability ("RMP")—the probability of a match occurring by chance. App2X 88 at 72.

42. Around 2009-2011, when the DNA testing was performed in this case, the most widely used statistical calculation for DNA mixtures—profiles that contain DNA from two or more individuals—was the Combined Probability of Inclusion ("CPI") and Combined Probability of Exclusion ("CPE"). 20 EH2RR 45-46. The CPI/CPE values approximate the percentage of the random population that can be included or excluded as possible contributors to a DNA mixture. App2X 157 (2010 SWGDAM Interpretation Guidelines) at 28. In light of concerns regarding the subjectivity of the CPI/CPE statistic, many labs have now moved towards using probabilistic genotyping software programs to interpret complex mixtures—mixtures that may contain DNA from more than two individuals. App2X 88 at 78-79; 20 EH2RR 80-81.

C. Laboratory accreditation

43. During trial, the State presented evidence that the APD DNA lab was accredited:

> ADA DeLaFuente: And when the lab states that they are accredited, what does that mean?
>
> Holland: Accreditation is typically these days the American Society of Crime Lab Directors, ASCLD, a laboratory accreditation board. They will come in, and they have a list of questions that they go through. Those questions are based on standards that are developed by the FBI and the forensic science community.
>
> That lab has to meet all those requirements, you have to go through and did you do this, did you do that, do you have protocols, are they based on sound scientific principles, have they been validated, do you run proper controls, are your instruments checked to make sure they are functioning properly. All the things you need to do to have a functioning lab that is providing diagnostic information, just like you would expect in the doctor's clinical lab to have the rights types of checks and balances in place to make sure they are not misdiagnosing something.
>
> You put the same kinds of checks and balances in place in a forensic DNA lab. If you are accredited, that means you can walk down the checklist and check the boxes. 26 RR 115-116.

In addition, the State elicited the following testimony from Elizabeth Morris who testified

the APD DNA lab was accredited by the American Society for Crime Laboratory Directors/Laboratory Accreditation Board:

> That is an outside agency that comes in and takes a look at all of our procedures and techniques and qualifications of the staff and the laboratory to perform their work, and we also follow that document and the FBI's quality insurance documents for DNA testing laboratories. 26 RR 124.

44. To the contrary, the TFSC audit found:

> The checks and balances that most stakeholders in the criminal justice system (including laboratory management) assume are provided by the QAS and ASCLD/LAB accreditation were not present in this case. TFSC audit report, note 5 at 27.

45. The evidence developed post-trial regarding the APD lab has demonstrated that Dr. Holland's and Ms. Morris's testimony that the APD lab operated pursuant to protocols "based on sound scientific principles" and all the "right types of checks and balances" was false and misleading as demonstrated by the TFSC audit, the Quattrone Center report, the testimony of Dr. Budowle, and the further findings made by Professor Inman. *See infra*. It is undisputed that despite years of audits and accreditation reviews by external agencies, APD's unscientific methods, bad practices, and the deficiencies in the lab's overall quality assurance system never came to the fore. Indeed, the Quattrone Center expressly found that "[t]he perception that because the Laboratory was accredited, it must be high-quality was a *substantial misunderstanding* by APD leadership and others in the Austin criminal justice community and contributed to the lack of awareness of the issues in the APD DNA Laboratory over time." App2X 195 (Declaration of Keith Inman), Attachment J at 79 (emphasis added). Likewise, Ms. Morris's testimony that the APD DNA lab followed the FBI's quality-assurance requirements is contradicted by the evidence demonstrating the complete failure of APD's quality assurance system. App2X 195 at ¶¶ 21-48.

46. The TFSC audit report provides the following example of misleading testimony that unduly emphasizes accreditation as an indicator of the quality and correctness of a lab's scientific procedures and policy:

> Q. Now, when we hear something like accredited, that sounds good, but what does that actually mean as far as the protocols that y'all have to follow in order to maintain that certification?
>
> A. Well, to be accredited, you're actually inspected by the accrediting agency, and they review your procedures to make sure that the procedures that you're following are scientifically valid, as well as accepted in the forensic community. They will come in and check out all of your operations, and then they routinely check—the accreditation cycle is actually a five-year cycle, but they do routinely check every year, or two years to make sure that you're following their guidelines and practices.

App2X 144 at 27.

47. The testimony provided in this case is similar, but even more misleading than the above example. The Court finds that the jury was given the impression that the APD DNA lab operated pursuant to a stringent system of checks and balances which met scientific standards. This testimony cannot be squared with the evidence of APD's systemic deficiencies. The evidence shows these deficiencies were not limited to any single individual (although the State's trial witnesses certainly failed to utilize best practices) but were endemic.

D. The importance of quality assurance and quality control in ensuring reliable DNA results

48. This Court finds that many factors can impact the reliability and accuracy of forensic DNA testing. State's expert Dr. Budowle testified that quality assurance and quality control are two such factors. 21 EH2RR 98-99. Components of quality assurance and quality control include establishing and following written standard operating procedures ("SOPs"), validation studies, a corrective action system, and a robust training system. *Id*. at 99-101. Both Drs. Budowle and Krane agreed that validation studies are essential to ensuring quality results. Dr. Budowle testified that labs must perform validation studies to determine the limitations of their methods, including when data can be interpreted and when it should be considered inconclusive. 21 EH2RR 101-102. Dr. Krane testified that validation studies are "absolutely foundational" to any forensic methodology, including DNA testing. 20 EH2RR 41-42. He testified that "[t]he inability to assess a laboratory's validation studies certainly works to diminish the confidence that we would have in a testing laboratory's conclusions." *Id*. The Court credits both Dr. Budowle's and Dr. Krane's testimony regarding the importance of quality assurance and quality control to assuring the reliability and accuracy of forensic DNA testing.

49. This Court finds that Dr. Krane's and Dr. Budowle's testimony about the importance of quality assurance and quality control is supported by the various guidelines and recommendations that identify the best practices associated with DNA testing and analysis. These include the interpretation and validation guidelines promulgated by the Scientific Working Group on DNA Analysis Methods ("SWGDAM"); standards published by the American Academy of Forensic Sciences Standards Board ("ASB") and the Organization of Scientific Area Committees for Forensic Science ("OSAC"); and the FBI's Quality Assurance Standards. 20 EH2RR 47-51; 21 EH2RR 106-110; App2X 135 and 136 (ANSI-ASB Standards); App2X 157-159 (SWGDAM Guidelines). The Court finds that in the context of forensic DNA testing in a criminal case, and particularly in a death penalty case, quality assurance and quality control measures are absolutely critical to ensuring the reliability and accuracy of DNA evidence used to secure a conviction.

50. Mr. Escobar's expert Professor Keith Inman, who testified in the form of a declaration, identified other areas of the forensic process that can affect the reliability of DNA results. App2X 195 (Declaration of Professor Keith Inman) ¶ 14. This includes the manner in

which the original evidence was collected from the crime scene and handled at every subsequent step of the process, and the existence (or absence) of paperwork adequately documenting each step. *Id*. ¶¶ 15-22. Each step of the process presents a risk of altering the evidentiary sample, such that the ultimate result of the forensic analysis may no longer accurately reflect the original evidence. *Id.* ¶¶ 23-24. The Court finds credible Professor Inman's testimony and finds that following proper procedures at each step of the process and properly documenting each step is essential to ensuring accurate and reliable DNA results.

51. The State objected to consideration of the issues raised by the TFSC audit on the ground that the deficiencies at the APD DNA lab identified by the audit do no constitute "scientific evidence" within the meaning of Article 11.073 because the evidence does not relate to a change in the field of DNA science. The Court does not agree with the contention that only a change in the underlying scientific theory qualifies for relief. The Court finds that good science relies on adherence to relevant guidelines, procedures and protocols; failure to do so is a mark of bad science. The aphorism "garbage in; garbage out" reminds us that the outcome of an analysis is only as good as the input. The Court finds that newly available evidence that the lab did not perform in accordance with standards generally accepted in the scientific community is within the requirements of Article 11.073.

E. Mr. Escobar has presented relevant scientific evidence concerning significant quality issues at the APD DNA lab

52. Mr. Escobar has presented a substantial amount of documentary and testimonial evidence demonstrating that at the time APD collected, handled, tested, and interpreted the DNA evidence in his case, APD's Forensic Science Division, and the DNA Section in particular, suffered from significant quality issues. As has been widely reported, these issues ultimately led to the permanent closure of the APD DNA lab in 2016. The evidence concerning the APD lab crisis is voluminous, reflecting both the widespread nature of the lab's problems and the significant attention given to the lab's closure by stakeholders inside and outside of the courtroom. Given the extraordinary amount of materials presented by both parties, the Court will only discuss those facts related to the APD lab closure that are most relevant to the specific factual and legal issues in this case. Although the Court does not expressly reference every single exhibit in the record, the Court's findings are based on a review of the entire evidentiary record.

1. Chronology of events leading up to the Texas Forensic Science Commission's audit of the APD DNA lab[4]

[4] The Court's findings related to the Texas Forensic Science Commission's ("TFSC") audit of the APD DNA lab draw heavily from the TFSC report (App2X 144), the Quattrone report (App2X 195, Attachment J), and the testimony of Dr. Budowle. The State objected to the admission of the TFSC report based on Texas Code of Criminal Procedure Article 38.01, Section 11, which provides: "A written report prepared by the commission under this article is not admissible in a civil or criminal action." 20 EH2RR 135. The Court overruled the State's objection on the ground that Mr. Escobar's constitutional rights to confront and cross-examine witnesses and to due process override a statutory prohibition on the use of the TFSC report. 20 EH2RR 147-148; 21 EH2RR 142. *See Cramer v. Sheppard*, 140 Tex. 271, 167 S.W.2d 147, 155 (1942) ("Certainly, a statute cannot override the Constitution."). Additionally, Dr. Budowle, one of the primary authors of the TFSC report, testified to much of the report's contents. Specifically, Dr. Budowle,

53. The discovery of the APD DNA lab's substandard practices occurred somewhat by happenstance. Although the lab apparently employed questionable practices since its inception, the greater forensic science and criminal justice communities did not learn about these issues until mid to late 2015 at the very earliest. In May of that year, the FBI notified the public about minor discrepancies in its STR population database, used by many forensic laboratories to calculate the statistical frequencies for DNA test results since the late 1990s. App2X 144 at 5; App2X 195, Attachment J (Report of the Quattrone Center for the Fair Administration of Justice ("Quattrone report")) at 20; 21 EH2RR 112. When Texas labs began recalculating DNA statistics to account for the database corrections, dramatic changes to the statistics for DNA mixtures resulted in some cases. App2X 144 at 6; 21 EH2RR 113-114. These changes were attributed not to the DNA database corrections—which had only minimal impact on the DNA statistics—but to modifications many labs had made to their DNA mixture interpretation protocols since the mixtures were first interpreted. App2X 144 at 6; 21 EH2RR 113-114. Concerned that some labs were still using outdated protocols, the Texas Forensic Science Commission ("TFSC") issued a letter to the criminal justice community on August 21, 2015, urging labs to reinterpret DNA mixtures impacting criminal cases "using current and proper mixture interpretation protocols." SW2X 17 (TFSC letter dated 8/21/2015) at 3; App2X 195, Attachment J at 21; 21 EH2RR 115.

54. APD was reluctant to adopt the TFSC's recommendations. In a series of emails beginning immediately after the TFSC issued its August 21 letter, Jeff Sailus—then the DNA supervisor and technical leader of the APD DNA lab—lambasted the TFSC for disclosing the mixture issue to the criminal justice community without considering the "crime lab perspective." App2X 160 (Jeff Sailus emails with Budowle comments); App2X 161 (Jeff Sailus emails re the Catch 22 of CPI); 21 EH2RR 115-119. Failing to appreciate that the use of outdated standards could significantly impact outcomes in criminal cases, Mr. Sailus seemed more concerned with analysts being "blindsided" by new rules and losing their careers. App2X 160 at 6.

55. In November and December 2015, the TFSC, with the assistance of Dr. Budowle and other DNA experts, reviewed the mixture interpretation protocols at publicly funded labs in Texas. App2X 144 at 11; 21 EH2RR 119-121. Around the same time, the Travis County DA's Office asked Dr. Budowle to review the APD DNA lab's testing and interpretations in selected sexual assault cases. App2X 189 (Affidavit of Robert Smith) ¶¶ 5-6. As Dr. Budowle took a closer look at the APD DNA lab, he discovered significant flaws in APD's methods for interpreting DNA mixtures, including the use of a "quant-based stochastic threshold," discussed *infra* in more detail. 21 EH2RR 119-121. When these issues were brought to APD's attention, lab personnel remained obstinate and unwilling to reinterpret DNA mixtures to account for updated interpretation methods. Of particular relevance here, former APD DNA analyst Elizabeth Morris, who conducted the DNA testing in Mr. Escobar's case, wrote several "information only" reports in which she continued to defend

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in response to questions by the Court, affirmed the accuracy of the report and agreed that the lab needed to be closed. Thus, even if the TFSC report should not have been admitted, this Court's findings related to the TFSC audit are amply supported by Dr. Budowle's testimony, the Quattrone report, and other evidence cited herein.

APD's mixture interpretation protocols, even after being shown evidence that those protocols were not scientifically supportable. 21 EH2RR 124-131; App2X 165-169. The Court credits Dr. Budowle's testimony that the position Ms. Morris took in these reports was unreasonable and indefensible from a scientific standpoint. 21 EH2RR 130. The Court concludes she was not appropriately qualified.

2. The TFSC audit and aftermath

56. Prompted by concerns about APD's mixture interpretation protocols, the TFSC conducted an onsite audit of the APD DNA lab in May and June 2016. App2X 195, Attachment J at 5-6; 21 EH2RR 132. The audit was conducted by Dr. Budowle; Lynn Garcia, General Counsel of the TFSC; and Jody Koehler, who was then the DNA Section Manager at the Texas Department of Public Safety's Austin Laboratory ("DPS Austin lab"), acting in her capacity as an assessor for the American Society of Crime Laboratory Directors/Laboratory Accreditation Board ("ASCLD/LAB"). App2X 195, Attachment J at 27; 21 EH2RR 132. The initial scope of the audit was to evaluate APD's use of the quant-based stochastic threshold and develop a roadmap to help APD move forward with interpreting DNA data based on scientifically accepted methods. App2X 169 (APD Audit Plan); 21 EH2RR 133-134. However, during the course of the audit, the auditors discovered additional issues impacting the quality of the lab's casework, including significant contamination concerns, the use of an acid phosphatase ("AP") reagent outside of the manufacturer's instructions, and training and leadership issues. App2X 144; App2X 195, Attachment J at 28; 21 EH2RR 133-153. Each of these issues is discussed further below.

a. APD's use of a quant-based stochastic threshold

57. As previously noted, the primary catalyst for the audit was APD's use of a quant-based stochastic threshold and other issues related to the lab's mixture interpretation protocols. 21 EH2RR at 123. The stochastic threshold is one of two thresholds used by DNA analysts as a tool for interpreting testing data. The first threshold, known as the analytical threshold, is the line above which peaks on the electropherogram can be associated with true DNA peaks, as opposed to noise or artifacts occurring during the testing process. 20 EH2RR at 76; App2X 144 at 7. The second threshold, called the stochastic threshold, is used to identify the potential for missing data or "allelic dropout," which occurs if the testing fails to detect all peaks present in a DNA sample. App2X 144 at 7; 20 EH2RR 72-73. The stochastic threshold, which must be established by each lab's internal validation studies, is particularly critical in interpreting DNA mixtures, as peaks for which there is a possibility of allelic dropout may not be used for statistical calculations. 21 EH2RR 35; App2X 144 at 10.

58. During its statewide review of mixture interpretation protocols, the TFSC discovered that in 2010, APD had adopted a stochastic threshold based on the quantity of input DNA in the amplification reaction.[5] 21 EH2RR 122. The APD lab was alone in implementing this approach. The approach was not supported by any peer-reviewed studies and was

[5] In contrast, most labs adopted a stochastic threshold based on the amount of signal or peak height, measured in relative fluorescence units ("RFUs"), for each allele. App2X 144 at 13-14.

scientifically indefensible. *Id*. at 123; App2X 195, Attachment J at 16-17. The audit team examined APD's validation study for the quant-based stochastic threshold and found it lacked sufficient data and was both poorly designed and poorly executed. 21 EH2RR 135-136; App2X 195, Attachment J at 18; App2X 144 at 14-15. The auditors learned that some of the APD DNA analysts were aware that the quant-based stochastic threshold was ineffective, yet they continued to use it. 21 EH2RR 124; App2X 195, Attachment J at 18.

59. The TFSC auditors also learned that, aside from the scientific invalidity of the quant-based stochastic threshold, APD analysts deviated from the SOPs and protocols for applying the threshold without justification. App2X 144 at 16-17; 21 EH2RR 140. In one particular case, Diana Morales—who conducted the serology testing in Mr. Escobar's case—reported the results from a DNA mixture even though the amount of input DNA was below the lab's quant-based stochastic threshold. Significantly, this issue had not been flagged by the lab's standard technical review process or by the technical leader, and the Travis County DA's Office had planned to call Ms. Morales to testify about her results in the case. App2X 195, Attachment J at 26-27. When two ADAs learned of the issue and confronted Ms. Morales just before she took the stand, Ms. Morales was unable to provide a coherent answer. *Id*.; App2X 189 ¶¶ 10-13; App2X 20 (Statement of Brandon Grunewald Concerning Diana Morales); App2X 21 (Statement of Robert Smith Concerning Diana Morales). Then, when the ADAs followed up with Ms. Morales the next day, she provided a completely different answer, which was unsupported by her case file. App2X 144 at 16-17; App2X 195, Attachment J at 26-27; App2X 189 ¶¶ 12-13; App2X 20; App2X 21.

60. Although it agrees that the stochastic threshold used by the APD DNA lab was not scientifically valid, the State has objected to consideration of this issue on the ground that the lab began use of that threshold only after the APD testing in this case was completed. While the State may be correct about the timing, the Court finds that this evidence is relevant to the lab's overall failures to adhere to scientifically accepted practices. The Court notes that when the State attempted to elicit testimony from Dr. Budowle to support the idea that many of the deficiencies began after Escobar's trial, Dr. Budowle demurred, saying that the deficiencies had existed for many years. 21 EH2RR 231.

61. The Court adopts the TFSC's findings that the APD DNA lab's practices surrounding the adoption and implementation of the quant-based stochastic threshold revealed a lack of understanding of foundational issues in DNA analysis, the importance of validation and data-driven protocols, and the critical role of quality assurance. App2X 144 at 17. 21 EH2RR 142.

b. Suspect and victim-driven bias

62. The TFSC audit also revealed the APD DNA lab's use of suspect and victim-driven interpretation methods. The auditors discovered that when interpreting evidentiary DNA profiles, APD analysts determined which loci to use for interpretation based on whether the alleles at each loci were present in the reference profiles of known persons—typically the suspect or victim. App2X 144 at 15-16. The Court credits Dr. Budowle's testimony that the determination of which loci to use for interpretation should be made *prior* to

looking at the reference profiles. 21 EH2RR 35, 136. The Court finds that APD's approach, commonly referred to as "suspect driven bias," is a form of confirmation bias and undermines the reliability of interpretation results. App2X 10 (Affidavit of Simon Ford) ¶ 12; App2X 88 at 31-32; App2X 144 at 15-16; App2X 195, Attachment J at 22.

63. The TFSC observed suspect-driven bias in the casework of all APD analysts, including Ms. Morales and Ms. Morris. App2X 144 at 16; 21 EH2RR 137-138; App2X 170 (Emails between Dr. Budowle and Jody Koehler regarding suspect-driven bias). Notably, there is evidence that Ms. Morris engaged in suspect and victim-driven bias in interpreting the DNA samples in Mr. Escobar's case. The Court credits Dr. Budowle's testimony that there was "strong evidence for suspect driven bias" with respect to APD Item 84.16 (Stain M from left Polo shoe), because Ms. Morris calculated two different CPI statistics based on the alleles present in Ms. Maldonado's and Mr. Escobar's reference profiles. 21 EH2RR 62. Ms. Morris's interpretation of APD Item 78.2 (Stain B from Nautica shirt) was another example of suspect driven bias, since she relied on loci with a high possibility of allelic dropout because those loci were consistent with Ms. Maldonado's reference profile. 21 EH2RR 70. In addition, on the electropherograms for APD Items 78.2, 84.16, and 86.5 (Stain D from the Lee jeans), Ms. Morris highlighted the alleles for the reference samples, which is further indication of suspect and victim-driven bias. SW2X 81, App2X 6 at 3-4 (electropherograms for APD Items 78.2, 84.16 and 86.5); App2X 10 ¶13.

64. The Court finds that lab personnel were also exposed to task-irrelevant information regarding Mr. Escobar's case, creating a strong risk of contextual bias. After APD was unable to locate Mr. Escobar's DNA on any crime scene evidence, APD asked DPS to conduct additional testing on APD Items 78.2 (Stain B from the Nautica shirt) and 17.3 (Stain C from the doorknob lock). App2X 48 (DPS Serology / DNA report, May 16, 2011). Emails between Cassie Carradine—who was then the supervisor and Technical Leader of the APD DNA lab—and the Assistant Laboratory Director of DPS, reveal that APD's testing strategy was influenced by irrelevant case information, including the prosecution's unproven theory of guilt. App2X 195, Attachment J at 22, note 86. Describing Mr. Escobar's case, Ms. Carradine wrote:

> This is a true stranger murder. A teenage girl and her baby were at her family's home and this guy who lived nearby, but was not known to the victim, gained entry and seriously injured her child and murdered her. He became a suspect because his girlfriend had called him while he was attacking the victim and she heard a girl screaming. She called the police and things were put together. We could not get his DNA on any crime scene evidence above threshold (there was a lot of her blood everywhere) but there are a couple of samples where Elizabeth [Morris] believes his profile is below threshold (one being the dead bolt on the front door). We have her DNA on shoes believed to be his but I think they really want to be able to put him at the scene so he can't say someone else was wearing the shoes. It was really a very brutal murder of a completely innocent victim. Elizabeth [Morris] can tell you more if you need more info.

App2X 27 (Email from Cassie Carradine to Brady Mills (11/19/2009); App2X 129

(Affidavit of Brady Mills, July 16, 2020) ¶ 2 and Attachment A.

65. The Court finds that the information Ms. Carradine shared with Mr. Mills is exactly the type of information that can bias examiners. Scientific studies show that DNA analysts are more likely to include a suspect in a DNA mixture after being exposed to irrelevant contextual information about the case. App2X 88 at 76-77. In light of these concerns, the National Commission on Forensic Science adopted a "Views Document" setting forth principles regarding the types of information that should and should not be considered in forensic analysis. App2X 156 (NIST Views on Task Relevant Information). The Court finds that information detailing how an individual became the suspect of a crime or the existence of other possible inculpatory evidence—i.e., the type of details shared by Ms. Carradine regarding Mr. Escobar's case—falls within the category of task-irrelevant information that should not be considered. App2X 156 at 3, 8.

c. Contamination concerns

66. At the request of the Travis County DA's Office, the TFSC audit team reviewed the DNA testing in *State v. Tyrone Robinson*,[6] where there was suspected carryover contamination from the victim's known DNA sample to the penile swab of a person of interest. App2X 144 at 18. The auditors concluded that carryover contamination likely occurred because the analyst, Diana Morales, placed the victim's DNA sample, which had a very high concentration of DNA, immediately adjacent to the penile swab, which had a low concentration of DNA, throughout the entire testing process. App2X 144 at 19-20; 20 EH2RR 145-146; 21 EH2RR 143-44. The Court finds credible Dr. Krane's testimony that it has been widely appreciated since at least the mid-1990s that to avoid contamination, DNA-rich samples should not be placed next to DNA-samples, and crime scene samples should not be placed next to person-of-interest samples. 20 EH2RR 146. This Court finds that APD's failure to abide by this best practice demonstrates the lab's "cavalier attitude about the practice of performing forensic analyses." *Id*.

67. Significantly, there were no indications of contamination in the testing data, such as contamination in the reagent blank. App2X 144 at 18-20; 21 EH2RR 145-146. Only because the DA's Office requested a review of the case (because the DNA results did not make sense when viewed in light of other case information) were the auditors able to retrospectively piece together what likely happened based on the placement of the DNA samples next to each other. *Id*. This Court finds this troubling, as it demonstrates how serious contamination events may evade detection if there is no independent reason to suspect that contamination occurred.

68. The TFSC found that the Tyrone Robinson case raised significant concerns about APD's capacity to adequately prevent, investigate and respond to contamination incidents, including its obligation to disclose potential contamination to end-users in the criminal justice system. App2X 144 at 20-22; App2X 195, Attachment J at 49-50; 21 EH2RR 146-149. The Travis County DA's Office had raised the issue of potential contamination with

[6] Offense Number 2008-2860644; APD Laboratory Number L0813126.

the APD lab as early 2009, but the lab took no steps to document or investigate the issue. 21 EH2RR 146. When asked by the audit team what should be done to address these concerns, Ms. Morales indicated she would deal with it when called to testify. 21 EH2RR 147. The Court agrees with and credits Dr. Budowle's testimony that Ms. Morales's response showed an inadequate understanding of the lab's responsibility to address contamination through an appropriate quality assurance system. *Id*.

69. The TFSC also reviewed another incident in which a contaminated reagent blank impacted ten cases. AppX2 144 at 22; 21 EH2RR at 149. The TFSC expressed concern that the lab's SOPs permitted the technical leader to sign off on reporting the results without any clearly defined, objective criteria for when such signoff was appropriate. AppX2 144 at 22.

d. APD's use of an acid phosphatase (AP) reagent outside manufacturer's instructions

70. The TFSC also raised concerns about the APD DNA lab's use of an acid phosphatase (AP) reagent, used to detect the presence of semen, outside of the manufacturer's "make fresh daily" instructions." App2X 144 at 22-23; 21 EH2RR 200, 221-222.

71. The Court finds that the lab's failure to follow manufacturer's instructions as required by the FBI's Quality Assurance Guidelines is indicative of what Dr. Krane described as a "cavalier attitude" towards best practices (20 EH2RR 146), and an overall willingness by lab personnel to disregard or deviate from quality assurance standards.

e. Leadership and training issues

72. The TFSC identified a number of issues relating to the APD lab's leadership and training practices. The DNA analysts lacked understanding about the importance of quality assurance procedures, and some analysts required training on basic issues such as proper validation, using pipettes within approved manufacturer ranges, and even foundational DNA topics such as how to calculate a Random Match Probability. 21 EH2RR 150-151; App2X 141 at 24. The previous Technical Leader Cassie Carradine—who was in charge of the lab when the DNA testing was conducted in Mr. Escobar's case—did not have the scientific and technical knowledge necessary to update the training manual or SOPs, and signed off on validation studies that were inadequate. 21 EH2RR 151. Ms. Carradine's successor, Jeff Sailus, had more scientific knowledge and corrected some past validation studies, but he had little experience performing casework and had his own deficiencies, including "not understanding the simple basics of interpretation" and failing to understand his disclosure obligations. App2X 161 at 2; 21 EH2RR 117-117, 151; App2X 144 at 24; App2X 195, Attachment J at 19. When Mr. Sailus went on sick leave in late 2015, he was replaced by Ms. Morales, who—although she had the required academic credentials to fill the position—was hardly an ideal candidate for the role, given her number of documented errors within the lab. App2X 195, Attachment J at 24.

f. The failure of the external safeguards to detect APD's bad practices

73. Although APD was regularly subjected to external audits and accreditation reviews, the lab's bad practices never raised any red flags until the TFSC audit in 2016. 21 EH2RR 151-152; App2X 144 at 26-28. ASCLD/LAB performed onsite assessments every five years, including in 2010 when the validation study for the quant-based stochastic threshold was completed, and external audits were conducted every other year by the National Forensic Science Technology Center ("NFSTC"). 21 EH2RR 151-152; App2X 144 at 26-27. None of these external safeguards picked up on the lab's issues. *Id*. The Court finds that the failure of these checks and balances is highly problematic because criminal justice stakeholders relied on the APD lab's accreditation as an indication that the lab's work was sound. 21 EH2RR 152-153; App2X 144 at 27.

g. The lab closure and plans to "look back" and "look forward"

74. Following the TFSC audit, the APD DNA lab suspended operations on June 13, 2016 and lost its ASCLD/LAB accreditation shortly thereafter. App2X 195, Attachment J at 28; App2X 144, Exhibit P (Letter from ASCLD/LAB to Bill Gibbens, June 22, 2016) and Exhibit Q (Letter from APD Chief to ASCLD/LAB re Discontinuation of Biological Services, June 13, 2016).

75. Over the next several months, various stakeholders in the criminal justice community expressed their concerns about the impact of the TFSC's findings and the lab's closure on criminal cases. *See*, *e.g.*, App2X 15 (Capital Area Private Defender Service ("CAPDS")) White Paper on APD DNA issues, September 20, 2016; App2X 16 (Travis County Commissioners Court Documents); App2X 17 (Letter from Travis County Criminal Court Judicial to city and county officials, December 1, 2016). The City of Austin and Travis County devised a plan to address the lab closure that included both a "look back" component and a "look forward" component. App2X 16. The "look back" component included a collaborative effort between CAPDS and the Travis County DA's Office to conduct "materiality reviews" for impacted cases. App2X 15; 25 EH2RR 36-38. The "look forward" component included, among other things, a plan for DPS to retrain the APD DNA analysts and review the past casework performed by Ms. Morales. App2X 129 ¶ 5. Additionally, the City of Austin engaged the Quattrone Center for the Fair Administration of Justice at the University of Pennsylvania Carey Law School ("Quattrone Center") to identify the factors that contributed to the lab's problems and provide guidance on the best path forward. App2X 195, Attachment J at 6-7.

3. The failed retraining of APD's senior DNA analysts

76. Following the lab closure, DPS agreed to conduct a remedial training of the APD DNA analysts so they could eventually be approved for casework either within DPS or at a reconstituted APD lab. App2X 129 ¶ 6; App2X 190 (Affidavit of Caitlin Lott) ¶ 3. The training began in August 2016 and was conducted primarily by Caitlin Lott, who was the lead trainer at the Austin DPS lab. App2X 129 ¶¶ 6-7. The Court finds credible the testimony of Ms. Lott, who testified in the form of an affidavit, regarding her observations and experiences during the training she conducted.

77. Throughout the training, DPS faced numerous difficulties with the senior APD DNA analysts, who were extremely resistant to the training process and displayed highly concerning behavior. The senior analysts—including Ms. Morris and Ms. Morales—were unwilling to accept responsibility for their errors and embrace best practices. This indicated that once they were approved for casework, Ms. Morris and Ms. Morales would go back to their old ways. App2X 190 ¶¶ 7-8.

78. This Court finds that Ms. Morris exhibited a lack of understanding of quality control measures, an unwillingness to adopt improved practices, and a resistance to implementing best practices that impacted both serology and DNA analysis. App2X 190 ¶¶ 10-13. For example, she disputed fundamental tenants of forensic science, arguing that a presumptive test for the detection of semen could be used as a confirmatory test. App2X 190 ¶ 10. When instructed to use decappers to reduce the risk of contamination, Ms. Morris stated she thought decappers actually caused more contamination, and then she used a decapper during a training exercise "in a very exaggerated and forceful manner, as if attempting to make a point that she thought it was silly to use them." *Id.* ¶ 11. Ms. Lott instructed her that if used properly, the decappers would indeed minimize the risk of contamination, but Ms. Morris continuously refused to use decappers for the remainder of the training. *Id*.

79. The Court similarly finds that Ms. Morales a exhibited a resistance to implementing best practices and a failure to adhere to quality control measures and quality assurance standards. *See* App2X 190 ¶¶ 14-17. She demonstrated an inattention to detail, for example, by using expired reagents during training exercises. *Id.* ¶ 15. She resisted examining the cause of her mistakes; for example, when she and other analysts failed to detect spermatozoa on a practice test, Ms. Morales shifted the blame to the trainers and refused to perform a root cause analysis. *Id.* ¶ 16. After being instructed that analysts should not screen evidence on the same bench at the same time, as per the FBI's Quality Assurance Standards designed to reduce the risk of contamination, Ms. Morales complained it was not feasible to comply with this requirement. *Id*. ¶ 17. The Court finds that Ms. Morales's behavior raises concerns about the APD DNA lab's historical contamination prevention habits and the lab's adherence to quality assurance standards. *Id*.

80. In light of the behaviors displayed by Ms. Morris, Ms. Morales, and the other senior APD DNA analysts—particularly with regard to these practical training exercises—DPS lost confidence in the quality of the APD analysts' work and determined it could not recommend any of them for independent casework in serology. App2X 190 ¶¶ 9, 13, 19. Accordingly, in December 2016, DPS formally suspended the training prior to completion of the serology portion of the training. App2X 129 ¶ 7; App2X 190 ¶ 6. The training had been intended to commence with serology training and conclude with DNA training, but because the APD analysts were unable to successfully complete the serology portion, the training was suspended prior to any DNA training. App2X 190 ¶ 6. The Court credits Ms. Lott's testimony that the issues observed during the serology training likewise implicated an inability or unwillingness to adhere to best practices in DNA analysis. App2X 190 ¶ 6

81. Following the discontinuation of the training, Ms. Morris and Ms. Morales remained on staff at APD but were reassigned to administrative roles. App2X 190 ¶ 6; App2X 128

(Affidavit of Elizabeth Morris) ¶ 1. They have not been approved for casework, and it appears neither has been licensed by the TFSC to perform any type of forensic analysis, which, as of January 1, 2019, is required of all forensic analysts in the State of Texas pursuant to Tex. Code Crim. Proc. art. 38.01, Sec. 4-a. App2X 201 (Affidavit of Allan Williams and Steve Brittain) ¶ 6, note 2.

4. Additional issues discovered after the audit

82. While the issues identified by the TFSC audit were serious enough to lead to the closure of the APD DNA lab, additional investigations into the lab reveal that those issues may have only been the tip of the iceberg. In the months and years since the audit, other issues have come to light that further diminish the reliability of the lab's work.

a. Questionable practices used to "squeeze data" from low-level samples

83. The lab engaged in questionable practices in order to "squeeze data" out of samples that otherwise might not have been interpretable. 21 EH2RR 169. For example, when reviewing the DNA testing from selected APD cases as part of the post-audit "materiality reviews," Dr. Budowle discovered that the analysts used longer injection times and lower analytical thresholds for the evidence samples than for the negative controls, when dealing with samples that had low quantities of DNA. 21 EH2RR 163-164; App2X 195, Attachment J at Appendix H. This practice may have negatively impacted the ability to detect contamination. 21 EH2RR 164.

84. The analysts also frequently selected the "no smoothing" option on the GeneMapper ID software, the computer program used to generate electropherograms from the DNA testing data. 20 EH2RR 137-138, 143; 21 EH2RR 165; App2X 128 ¶ 3. Although the software manufacturer's User Guide recommends using the "light smoothing" setting—the most commonly employed setting among DNA labs—APD often used the "no smoothing" setting for evidence samples. 20 EH2RR 138-139, 143; 21 EH2RR 165; App2X 149 (GeneMapper ID manufacturer guidelines (abridged)). The smoothing setting affects both the height and shape of the peaks on the electropherogram. The "no smoothing" setting results in artificially heightened peaks. 20 EH2RR 140-143; App2X 148 (Gilder et al, *Systematic Differences in Electropherogram Peak Heights Reported by Different Versions of the GeneScan Software*, J. FORENSIC SCI. (2004)). This impacts the correspondence between the peaks and a lab's analytical threshold, and can frustrate an analyst's ability to detect important cues related to the shape of a peak that indicate interpretation should be done with caution. 20 EH2RR 140-142.

85. Dr. Krane explained a lab might remove smoothing "to take a marginal signal and get it to rise above an analytical threshold so that it could be used as part of an interpretation." 20 EH2RR 145. Dr. Budowle testified there was "no rhyme or reason" for why APD sometimes used smoothing and other times did not. 21 EH2RR 165. He found it particularly concerning that when the analysts used the no smoothing setting on evidence samples, they retained smoothing on the control samples, which could impact the ability to detect contamination. 21 EH2RR 167-168. The Court finds that the lab's idiosyncratic use

of the smoothing function created a risk that samples that should have been deemed below analytical threshold were included as part of an interpretation, and that it may have decreased the ability to detect contamination of evidentiary samples.

b. The DNA freezer malfunction

86. In March 2016, prior to the TFSC audit of the APD lab, a freezer containing hundreds of evidentiary DNA samples broke down for almost an entire week, reaching temperatures as high as 28 degrees Celsius (approximately 82 degrees Fahrenheit). App2X 14 at 1. Ms. Morales, who was acting as the Interim Technical Leader, decided not to notify any criminal justice stakeholders, including the Travis County DA's Office, because "there [was] no way to determine if any samples have been compromised." *Id.* at 2; App2X 195, Attachment J at 25-26. The larger community did not become aware of the freezer outage until the fall 2016, when a DNA analyst revealed the incident during cross-examination in a sexual assault trial. App2X 195, Attachment J at 26.

87. The failure to notify anyone outside of the lab about the freezer malfunction displayed a poor understanding of the lab's role within the criminal justice system, including the lab's disclosure obligations. App2X 195, Attachment J at 66. This Court finds that the APD DNA lab's decision to keep the freezer malfunction secret is evidence of a systemic lack of transparency and poor-quality assurance practices.

c. Additional contamination incidents

88. The TFSC audit prompted a closer look at APD's historical practices related to contamination. A subsequent review of Diana Morales's casework by DPS revealed five contamination incidents between October 2008 and April 2010. App2X 129 para 13-15 and Attachment E. Brady Mills, currently the Crime Laboratory Director of DPS-Austin, testified via affidavit that the number of errors identified in Ms. Morales's casework "was not normal," and should have triggered a quality assurance process to address the issue. App2X 129 ¶ 15. Dr. Krane agreed that Ms. Morales's errors could not be written off as a "fluke," and that such a "recurring pattern in a fairly short period of time. . . plainly calls out for a need for corrective action." 20 EH2RR 149.

89. Additional contamination incidents were identified by Dr. Budowle during the course of his "materiality reviews." In one case in which Ms. Morales conducted DNA testing in November 2011, a contaminated reagent blank impacted three separate cases. App2X 8 at 1, 8. In his report for one of the impacted cases, Dr. Budowle observed that APD failed to perform a proper root cause analysis and enact adequate corrective actions. App2X 195, Attachment M at 4, 6. Furthermore, there was no indication that the contamination was conveyed to other analysts in the lab so they could learn from the incident. *Id.*

90. Just two months later, in January 2012, Ms. Morales detected contamination in a reagent blank impacting seven cases. App2X 8 at 1, 8; App2X 195 ¶ 64. There is no documentation of a root cause analysis, and it appears no one outside the DNA lab was notified of the incident. App2X 195 ¶ 65. As the only corrective action, Ms. Carradine supervised Ms.

Morales's extraction process in another case and provided some "glove tips" because Ms. Morales touched her gloves so frequently. *Id.* ¶ 64. Ms. Morales's explanation about how she used her fingertip instead of a tool for opening tubes, because she was afraid of not being able to see what she was touching with the tool, was nonsensical. *Id.*

91. The Court finds that Ms. Morales was involved in a significant number of contamination incidents. The response of lab leadership to those incidents was wholly inadequate and demonstrated a failure to implement adequate safeguards against further contamination incidents.

92. This Court finds that Ms. Morris, likewise, was involved in a significant number of contamination incidents that were met with inadequate responses from lab leadership. The contamination logs, which may not reflect all historical contamination events in the lab, reveal that Ms. Morris was involved in at least nine documented contamination incidents between 2006 and 2013, impacting over thirty cases. App2X 10 ¶ 16. In 2007, for example Ms. Morris had three separate instances of contamination within a short time frame. App2X 195 ¶ 66. After each incident, she simply noted she would change gloves more frequently or wear smaller gloves, demonstrating a failure to implement appropriate procedures despite repeated errors. *Id*.

93. In May 2007, after contamination in a reagent blank impacted eight separate cases, Ms. Morris agreed to "carefully open the tubes with a tube opener or Kimwipe," "use greater caution when purifying samples and change my gloves frequently," and "continue to decontaminate [her] work area per [their] standard operating procedures." App2X 195 ¶ 67. After conducting a materiality review of this case, Dr. Budowle expressed concern that APD did not perform a root cause analysis or enact adequate corrective actions. *Id*. ¶ 67 and Attachment N. That Ms. Morris had to be repeatedly reminded to use gloves properly indicates a lack of attention and failure to understand how her actions could impact the integrity of evidence samples. *Id.* ¶ 68. Indeed, in an interview with the Quattrone Center, she admitted she "didn't even think" about how wearing gloves that were too big could affect her case work. *Id*.

94. Ms. Morris was eventually placed on a Performance Improvement Plan or "PIP" from August 2007 to August 2008 due to repeated instances of contamination within a short time frame. SW2X 10 at 2. Despite this intervention, however, Ms. Morris continued to experience contamination in the years that followed. App2X 8 at 1; App2X 10 at ¶ 16.

95. In March 2015, Ms. Morris developed a DNA profile on an evidentiary item that was consistent with one of the APD DNA staff. App2X 195 ¶¶ 69-70 and Attachment O. Ms. Morris described the profile as a "major female profile," indicating that a significant amount of DNA was transferred during the contaminating event. App2X 195 ¶ 71. Because there were no signs of contamination in the reagent blank, it is likely the contamination would have escaped detection were it not for the fact that Ms. Morris recognized the female profile as belonging to a staff member. *Id*. ¶¶ 71-72. The Court finds that this is an illustration of how significant contamination can occur without detection, similar to what occurred in the Tyrone Robinson case. *Id*.

96. Moreover, as was the pattern in the APD DNA lab, the response to this incident was wholly inadequate. No corrective action or root cause analysis was instituted. Instead, the Technical Leader reminded staff not to have skin showing between their gloves and lab coats, and to be more careful when extracting gloves from the box. App2X 195 ¶ 73 and Attachment O.

5. The Quattrone Center's "look back / look forward" review

97. In September 2020, the Quattrone Center released a report on its review of the TFSC audit findings and recommendations for how to move forward. The Quattrone Center's review was limited to identifying the factors that contributed to the TFSC findings, focusing on the work of the APD DNA section. The report did not attempt to detect new or additional errors to those identified by the TFSC. App2X 195 ¶ 13 and Attachment J at 5, 7. Based on a review of documents and interviews with individuals connected to the DNA lab, the Quattrone report identified "57 contributing factors and conditions that worked together to create an environment where errors occurred and persisted without appropriate oversight or correction." App2X 195, Attachment J at 5.

98. The Quattrone Center worked with a stakeholder group, which included representatives from both the local criminal defense community[7] and the Travis County DA's Office, to devise 87 recommendations for a new DNA lab in Austin. App2X 195, Attachment J at 5, 121. Although questions were raised by some members of the stakeholder group about the transparency of the Quattrone Center's review process and the contents of its report, *id.*, Attachment J at 121 note 3, a detailed discussion of the report is not necessary to resolve the issues in this case. Suffice it to say, the Quattrone Center unequivocally confirmed the TFSC's 2016 findings that "[a] wide range of errors were committed by DNA Analysts working in the APD DNA Laboratory" and that "the overall culture of quality and oversight in the DNA Laboratory left much room for improvement." *Id.*, Attachment J at 7.

99. While the scope of the Quattrone report is essentially coterminous with the TFSC audit report, the Quattrone Center highlighted a few additional issues, including APD's incompetence in resolving prior quality complaints. In 2010, former APD DNA analyst Cecily Hamilton filed an internal complaint alleging, among other things, that DNA contamination occurred in the lab and that Ms. Carradine helped Ms. Morales cheat during a competency exam. SW2X 37 (Affidavit of Karen Kiker), Attachment C (Cecily Hamilton Memo, "Critical Issues within the APD DNA Laboratory, February 16, 2010); App2X 195, Attachment J at 15. The Quattrone Center found that the lab's response to the complaint was inadequate. APD treated the complaint "almost exclusively as a human resources/personality conflict concern, and not as a potential indicator of a lack of robust policies or procedures that might be indicative of lax quality practices in the lab." App2X 195, Attachment J at 48. Furthermore, because "[n]o experts in the field of DNA analysis or trained in serology were involved in the investigation," "the opportunity to learn more

[7] The OCFW was not invited to be part of the stakeholder group and had no involvement in the preparation of the Quattrone report.

about the actual workings of the lab in ways that could have improved its scientific performance was lost." *Id*.

100. The Quattrone Center also elaborated on the TFSC's findings concerning structural weaknesses in the accreditation and audit system. One of the shortcomings of the accreditation system is that auditors must rely on documentation provided to them by the lab, but there is no guarantee that what is shared by the lab is complete or accurately reflects lab practices. App2X 195, Attachment J at 85. As an example, in response to a 2014 audit finding that the APD lab was not in compliance with a QAS standard regarding document retention, the lab explicitly amended its SOPs to require retention of corrective or preventive action reports for 100 years. *Id.* Nevertheless, the following year lab management acknowledged that "the majority of complaints received were not in writing and were not recorded, investigated nor were corrective actions taken." *Id.*

101. Overall, the Quattrone Center found that "the accreditation and audit regime that has been in effect since the inception of the APD DNA Laboratory leaves quite a bit to be desired." App2X 195, Attachment J at 82. Furthermore, "[t]he perception that because the Laboratory was accredited, it must be high-quality was a substantial misunderstanding by APD leadership and others in the Austin criminal justice community and contributed to the lack of awareness of the issues in the APD DNA Laboratory over time." *Id.* at 79.

102. This Court finds no reason to question the above findings of the Quattrone report and therefore adopts them as part of its findings of fact herein.

6. Further findings by Professor Inman

103. Given the limited scope of both the TFSC audit and the Quattrone review, Mr. Escobar's expert Professor Keith Inman conducted a broader review of APD's practices that may impact the reliability of DNA results in this case. Professor Inman looked not only at the practices within the DNA lab, but also APD's overall quality assurance system and processes for the discovery, collection, preservation, and transportation of evidence within the larger Forensic Division. App2X 195 ¶¶ 12-14, 30.

104. Professor Inman has over forty years of experience working as both a criminalist and a DNA analyst. He has worked extensively with various law enforcement agencies, where he personally responded to crime scenes and was responsible for the identification, collection, and preservation of crime scene evidence. App2X 195 ¶¶ 2-5. Professor Inman also has substantial experience in forensic DNA testing and analysis, and has been involved in training, conducting validation studies, and writing quality manuals and SOPs at multiple publicly funded labs. *Id.* ¶¶ 6-8. In light of his qualifications and his unique background in both the crime scene side and the laboratory side of forensic DNA testing, the Court finds Professor Inman's testimony is entitled to significant weight. Furthermore, Professor Inman's opinions are well-documented and supported by the TFSC's and the Quattrone Center's findings. This Court finds Professor Inman's testimony credible.

105. Based on his review of extensive documentation and other materials relating to APD practices generally and specifically in this case, Professor Inman concluded that APD's "entire process of evidence collection, preservation, documentation and analysis from crime scene to report exhibited an inability to handle evidence in a way that would consistently protect and preserve its integrity[.]" App2X 195 ¶ 29. These deficiencies were not limited to the inner workings of the DNA Section but were also prevalent throughout the Forensic Science Division. *Id*., ¶¶ 25, 29-30.

a. Issues related to APD's overall quality assurance system, including lack of transparency, poor documentation, and inadequate responses to contamination

106. Professor Inman's review revealed that the overall quality system in place at APD when Mr. Escobar's case was processed was severely deficient. App2X 195 ¶ 31. The issues impacted not only the DNA section but also the entire Forensic Science Division. *Id.*

107. William "Bill" Gibbens, who was the Laboratory Director for the entire Forensic Science Division from 2002 to 2017, had no scientific background. App2X 195 ¶ 33; App2X 193 (Affidavit of William Gibbens) ¶ 5. Mr. Gibbens admitted that the quality assurance ("QA") system in place was lacking; he relied exclusively on proficiency tests and external audits to determine whether the lab was on the right track, and allowed the DNA section to handle its own QA system "internally." App2X 195 ¶ 33-34. For years, the lab did not have any quality issue notification process or any procedures for initiating corrective actions. *Id.* ¶ 35. This situation endured despite audit findings in 2008 and 2009 that various sections of the lab, including the Crime Scene Section and the Latent Print Section, failed to conduct technical reviews in accordance with their SOPs. Following an audit in 2012, lab leadership finally realized they lacked checks and balances with respect to QA in all of the Forensic Science Division sections, and began to update the SOPs to improve the system. App2X 193 ¶ 9.

108. It was not until 2016, when Efrain Perez became the QA manager, that the lab began conducting root cause analyses to address laboratory error. App2X 192 (Affidavit of Efrain Perez) ¶ 7. That same year, Mr. Perez asked to see the DNA Section's contamination log and was provided a binder four-inches thick. *Id.* ¶ 8. Prior to that time, no one outside out of the DNA lab had ever asked for or received the contamination log. *Id*. Instead, the DNA lab "operated like a bubble" and was held up "on a pedestal" by the rest of the Forensic Science Division. App2X 192 ¶ 6; App2X 193 ¶ 6.

109. The failure of APD's QA system was further exacerbated by the insular culture and lack of transparency that permeated the lab, particularly the DNA section. App2X 195 ¶ 43. Looking outside of the lab for best practices and suggesting improvements was considered an insult. App2X 192 ¶ 6. The lack of transparency was particularly problematic in the DNA Section—where all quality issues were dealt with internally and in secrecy. App2X 195 ¶ 43.

110. Within the DNA lab, corrective actions were viewed as punitive, and documentation of errors were seen as personal attacks as opposed to opportunities for improvement. App2X 195 ¶ 43; App2X 12 (Sailus Memorandum of February 27, 2015). Contamination incidents were typically shared only with the technical and administrative reviewers, and not with the other analysts. App2X 195 ¶ 44. During an interview with the Quattrone Center, Ms. Morales indicated that contamination was viewed as matter of personal shame; she felt distressed when she experienced contamination in casework and didn't want others to "look at you like you had contamination." *Id*. In this environment, where open communication about contamination and other quality issues was discouraged, it is difficult to have confidence that all contamination incidents were actually reported and addressed. *Id.* ¶ 45. There is no way to conclusively know whether the contamination log is a complete list of contamination events that occurred in the APD DNA Laboratory from 2010 to 2015. *Id.*, Attachment J at 50, note 169.

111. This lack of transparency also impacted other issues in the lab. For example, when analysts mislabeled evidentiary samples, they simply made handwritten corrections over the labels and were not required to generate any other documentation. App2X 195 ¶ 46. Ms. Morales's failure to notify anyone outside the DNA section other than the QA manager and lab manager about the DNA freezer malfunction in 2015 is another example of the lab's insularity and lack of transparency. *Id*. ¶ 47.

112. APD's documentation practices were also deficient, and this was particularly true with respect to the DNA Section. App2X 195 ¶ 49. In any forensic process, the tenet "if you didn't write it down, you didn't do it" is fundamental to ensuring adequate quality control. App2X 195 ¶¶ 19-20. There are numerous examples of APD failing to abide by this principle.

113. First, the DNA section failed to adequately document protocol deviations and case communications, as was found by the TFSC audit. App2X 195 ¶ 50; App2X 144 at 16, 21-22. Concerns about documentation practices were also raised in a case in which Diana Morales conducted DNA testing in 2014. Dr. Melanie S. Trapani of Cellmark Forensics, an external accredited lab, conducted an independent review of the case file and found an unusually high number of corrections in the paperwork for both the initial serology screening and the DNA analysis, failure to document dramatic changes between two DNA quantification runs, and failure to explain why the results for the second run were handwritten when these results are normally recorded electronically. App2X 195 ¶ 52 and Attachment K. These are all serious violations of quality measures which require thorough documentation when any changes are made to the original case file. *Id*. However, when these concerns were brought to the attention of then-current Technical Leader Mr. Sailus, he dismissed them as "a difference of opinion" and stated that Ms. Morales could respond to the issues "as needed at trial." App2X 195 ¶ 54.

114. During one of her interviews with the Quattrone Center, Ms. Morris gave another example of poor documentation. Ms. Morris revealed that whenever there was a disagreement between an analyst and technical reviewer regarding the interpretation of DNA results, it was not documented in the file, and instead the Technical Leader Ms.

Carradine would make the final call. App2X 195 ¶ 56. Ms. Carradine allowed the analysts "to have a little bit of an opinion"; in practice, this meant analysts could pick and choose when to interpret a locus and when to determine it was interpretable, without documenting the reasons for their decisions. *Id*. ¶¶ 57-58. This dangerous combination of too much flexibility and poor documentation practices created an environment in which analysts were allowed to construct post-hoc reasoning for their actions instead of relying on accurate, contemporaneous documentation. *Id.*

115. Professor Inman reviewed materials related to APD's practices for preventing and addressing contamination, including the materials related to the incidents previously discussed above. App2X 195 ¶¶ 60-73. He also reviewed another incident from December 2009, just months after APD performed the DNA testing in Mr. Escobar's case, in which an evidence package that was last in Ms. Morris's possession had a failing seal. *Id.* ¶ 75. When this was brought to her attention, she was indifferent and balked at correcting the seal. *Id*. As with the contamination incidents previously discussed, APD's response to this incident was entirely inadequate. Despite acknowledging that Ms. Morris's indifference was "troubling," the lab managers attributed the problem to a defective product. Consequently, the lab managers failed to address whether Ms. Morris's actions contributed to the problem or whether she had certain obligations once the issue was brought to her attention. *Id*.

116. Based on APD's ineffective responses to contamination incidents and failure to prevent continued contamination incidents involving the same analysts, including in those incidents involving Ms. Morris and Ms. Morales discussed *supra*, this Court finds that from at least 2006 and up until the closure of the lab, APD exhibited an inability to handle evidence in a way that would consistently protect and preserve its integrity, thereby denying stakeholders reassurance of the validity of any resulting analysis. *Id*. ¶ 76.

b. Opportunities for contamination prior to DNA analysis

117. Professor Inman identified several issues related to handling of the physical evidence in this case, which reveal that the problems documented with respect to the DNA Section were endemic to the entire Forensic Science Division and further call into question the results of APD's DNA testing. Due to these issues, this Court finds that there were multiple opportunities for contamination even before the evidence in this case was transferred to the DNA section. App2X 195 ¶¶ 77-78.

118. First, at least two employees who touched the evidence in this case had serious disciplinary issues related to proper evidence handling. One was Fred Powell, a former evidence control specialist who handled several key pieces of evidence, including the piece of carpet from the victim's apartment with an apparent shoe print in blood (APD Item 44). App2X 195 ¶¶ 79-82. Mr. Powell had a substantial number of documented disciplinary and work performance issues, including mislabeling or improperly sealing evidence, losing, and even intentionally damaging evidence. In at least one incident he was cited for drinking while on call; in another incident he "lost" seized narcotics and failed to report it; in another he threw a rape kit in anger. Despite his involvement in multiple incidents that could have

impacted evidence integrity, management continued to entrust Mr. Powell with sensitive evidence, demonstrating inadequate responses to serious disciplinary issues and overall poor leadership at APD. *Id*.

119. Another individual, former crime scene specialist Stacey Wells, who collected key pieces of evidence from both Mr. Escobar's residence and his mother's residence, had a documented pattern of improperly packaging and handling crime scene evidence. App2X 195 ¶ 83. For example, in December 2008 she was reprimanded for bringing unlabeled, open and unsecured evidence bags into the crime lab, which could have "caused the evidence to spill out of the bags during transport, causing damage, cross contamination, or even complete loss." *Id*. ¶ 83 and Attachment S at 4-6. In July 2009, she was disciplined for failing to properly label evidence: "Many bags had to be opened to locate the exact item(s) requested and no information was denoted at all on one of the bags in question." *Id*. Like Mr. Powell, Ms. Wells continued to be assigned to a role that required handling critical crime scene evidence, despite her historical work record. Ms. Wells ultimately resigned from APD after it was discovered that she falsified her qualifications on her employment application and perjured herself in court. *Id*.

120. Second, a review of the relevant crime scene reports and chain of custody documentation from this case raises significant concerns about the integrity of the physical evidence in this case. App2X 195 ¶ 99. These concerns stem both from poor documentation practices, as well from APD's demonstrated culture of inattention to detail, carelessness, and failure to appreciate proper procedures. App2X 195.

121. On May 31, 2009, Crime Scene Specialist Jennifer Mezei collected over one dozen items from the crime scene at the victim's apartment, including several items that were wet with blood. App2X 195 ¶¶ 86-87. According to the available documentation, on that same day she brought the evidence to the APD Forensics Center and stored them in Drying Room G. The Crime Scene Lab SOPs in place at that time required wet items to be placed on top of clean butcher paper and also covered with dry, clean paper to prevent contamination. *Id*. ¶ 88. Ms. Mezei's notes, however, only indicate that she placed the wet items on butcher paper and do not indicate whether she also covered the wet items with paper. *Id*. In accordance with the principle "if you didn't write it down, you didn't do it," it appears that she failed to comply with important protocols specifically designed to prevent cross-contamination between evidence. *Id.* ¶ 89. These protocols are especially critical when dealing with wet blood, which can easily be transferred to other items through mere incidental contact.[8] *Id*.

122. The available documentation indicates that on June 2, 2009, Crime Scene Specialist Ian Farrell used a master key to enter Drying Room G and collect an item for transfer to another section. App2X 195 ¶ 92. As required by the Crime Scene Lab SOPs, Mr. Farrell properly documented his entry into the drying room. *Id.* In order to prevent cross-contamination, evidence from different scenes should not be stored in the same drying room; only one crime scene specialist should use a given drying room at a time. App2X

[8] Even after blood dries, bloody items must remain covered to prevent contamination by way of "blood dust"—dried blood that flakes off in extremely small quantities. App2X 195 ¶ 90.

194 (Affidavit of Ian Farrell) ¶ 9. Nonetheless, contemporaneous documentation indicates that on June 3, 2009, while the evidence from the victim's apartment, some of it wet with blood and uncovered,[9] was being stored in Drying Room G, Stacey Wells entered and stored several items of evidence she collected from Mr. Escobar's mother's residence on Rosewood Avenue in the same drying room. App2X 195 ¶ 93. Ms. Wells's case notes include no details as to how she stored or packaged the items in Drying Room G, including whether she took any actions to prevent cross-contamination between the two sets of evidence. *Id*.

123. On June 4, 2009, Ms. Wells removed the evidence she had placed in Drying Room G the day before, and "packaged, sealed, signed and submitted the evidence to the Central Evidence Locker." App2X 195 ¶ 94. That same day, Ms. Wells retrieved another set of evidence obtained from a third location—Mr. Escobar's apartment—and packaged this evidence[10] at the same time she was in possession of the evidence from the Rosewood residence (which had been stored in the same drying room with bloody evidence from the crime scene and thus exposed to biological contaminants from the crime scene). *Id*. ¶ 96. There is no documentation of what, if any, measures Ms. Wells took to prevent cross-contamination between the separate sets of evidence. *Id.* ¶ 97. This Court finds that because Ms. Wells did not document her efforts to prevent cross-contamination between the two sets of evidence, there was a potential for cross-contamination. App2X 195 ¶ 89.

124. This Court finds that Ms. Wells and Ms. Mezei improperly shared a drying room, initially creating a risk of cross-contamination between two—and later three—different crime scenes. App2X 195 ¶ 95. Concerns regarding the integrity of the evidence in this case are further heightened by the absence of sufficient contemporaneous documentation regarding the measures taken to prevent contamination. App2X 195 ¶ 89.

125. In response to Professor Inman's conclusions, the State submitted affidavits from five current and one former employee of APD's Forensic Science Division. SW2X 85 (Affidavit of William Welch); SW2X 86 (Affidavit of Vince Gonzalez); SW2X 87 (Affidavit of Jennifer Mezei); SW2X 88 (Affidavit of Kimberly Frierson); SW2X 89 (Affidavit of Victor Ceballos); SW2X 90 (Affidavit of Charles Dean). These individuals dispute that bloody items from the crime scene were stored in the same drying room as the items collected from the Rosewood residence. They assert, based on their decade-old memories, the SOPs, and the absence of information in a master key log, that Ms. Wells must have been mistaken when she documented that she placed her evidence in Drying Room G, and that she must have instead placed the evidence in another drying room. App2X 199 (Supplemental Declaration of Keith Inman) ¶ 4. The Court is unpersuaded by this post-hoc reasoning, which is unsubstantiated by the available contemporaneous documentation.

126. Ms. Mezei asserts there was only "one time" another person accessed Drying Room G while it contained evidence from the victim's apartment—when Ian Farrell obtained an

[9] This included two large sofa cushion covers (Supplemental Declaration of Keith Inman) ¶ 9; SW2X 87 (Affidavit of Jennifer Mezei) ¶ 4.

[10] These items included the Polo shoes (APD Item 84) and Lee jeans (APD Item 86).

item for transfer to another section in the lab. SW2X 87 ¶ 10. The only documentation submitted in support of this theory, a copy of the master key log, in fact, shows that yet another person entered Drying Room G during the relevant time period. SW2X 88, Attachment A (APD Crime Scene Unit Key Log). This key log indicates that on June 1, 2009, William Welch entered the drying room to "check status of evidence." It appears Mr. Welch prepared no written report or other documentation explaining his reasons for entering the drying room, as was required per the SOPs.[11] App2X 199 ¶ 6. Documentation also exists that at least one other person—Diana Morales—entered Drying Room G during the relevant time period in order to swab the front door (APD Item 17) and window screen (APD Item 15). App2X 199 ¶ 7 and Attachment C. Thus, Ms. Mezei's explanation that Mr. Farrell was the only person who accessed Drying Room G while it contained evidence from the crime scene is clearly contradicted by the available documentation. This Court finds that the only conclusion that can be drawn based on the inconsistent documentation and conflicting accounts is that nobody knows what actually happened. App2X 199 ¶¶ 7-8; App2X 195 ¶ 21. But regardless of what may have occurred, it is evident that there was ample opportunity for the integrity of the evidence to be compromised.

127. In response to Professor Inman's concerns about whether she properly stored the bloody items from the crime scene in the drying room, Ms. Mezei claims that it was her "common routine" to cover wet items with butcher paper, and she has "absolutely no doubt" that she did so in this case. SW2X 87 ¶ 5. This Court has seen no evidence supporting Ms. Mezei's assertions. This Court finds that Ms. Mezei's decade-old memory regarding what was her "common practice" does not dispel concerns about how the evidence was actually stored in this case, especially when the contemporaneous documentation contradicts Ms. Mezei's assertions.

128. Another individual, Crime Scene Supervisor Kimberly Frierson, also attempts to fill the documentation gap by speculating about what Ms. Wells may or may not have done with regard to the packaging and handling of the evidence. SW2X 88 ¶¶ 6-12. To support her assumptions, Ms. Frierson relies on what was "proper procedure.," *Id*. But this does not alleviate the evidence handling concerns in this case, especially in light of Ms. Wells' documented history of not following "proper procedure" and the absence of complete and accurate contemporaneous documentation. App2X 199 ¶ 10.

129. Based on the general practices of both the DNA section and the Forensic Science Division, Professor Inman found substantial evidence "that the entire process of evidence collection, preservation, transportation, storage, and analysis suffers from the same deficiencies identified in previous investigations for the DNA section." App2X 195 ¶ 109. This Court agrees and finds that the issues identified by Professor Inman provided opportunities for contamination and other errors, which creates significant uncertainty regarding the integrity of the evidence and consequently, the reliability of the DNA results—independent and regardless of the validity of the DNA analyses conducted in this case.

[11] Mr. Welch also failed to mention that he entered the drying room in his affidavit. *See* SW2X 85.

F. Mr. Escobar has presented relevant scientific evidence concerning scientific developments in DNA mixture interpretation

130. Mr. Escobar has presented relevant scientific evidence concerning another issue that is related to, but also independent from, the APD lab crisis: developments in DNA mixture interpretation. As discussed above, scrutiny of the APD lab's practices was triggered by scientific developments regarding DNA mixture interpretation and statewide concerns that forensic laboratories were using outdated interpretation protocols. The relevant scientific developments impact not only the DNA testing and interpretations rendered by the APD DNA lab, but also the DNA analyses performed by Fairfax and the subsequent interpretations by Mitotyping.

131. Mr. Escobar presented substantial evidence regarding the significant changes that have taken place in DNA mixture interpretation since his 2011 trial. This evidence falls into three separate categories: evidence concerning developments that have occurred in the scientific community at large, evidence pertaining to the DNA analyses conduct by the APD DNA lab, and evidence related to the DNA analyses by Fairfax and reinterpretations by Mitotyping.

1. Developments in the scientific community at large

132. Mr. Escobar presented the testimony of Dr. Dan Krane, Ph.D., who testified about the general scientific developments that have occurred with respect to DNA mixture interpretation since Mr. Escobar's trial. 20 EH2RR 45-48, 52-57.

133. Dr. Krane is currently the Interim Dean, Chief Administrative Officer and a Professor of Biological Sciences at Wright State University. 20 EH2RR 27-28; App2X 123 (Curriculum Vitae of Dan Krane). He has taught, conducted research and published peer-reviewed articles on topics related to DNA testing and interpretation for over three decades. AppX 123. Dr. Krane is a co-founder of Forensic Bioinformatics, Inc., which reviews and provides consultations related to DNA testing conducted in criminal cases. 20 EH2RR 30-31. He received two gubernatorial appointments to the Virginia Scientific Advisory Committee, the Virginia equivalent to the Texas Forensic Science Commission, which is charged by statute to oversee the policies and practices of the Virginia Department of Forensic Sciences, including in the area of DNA testing. 20 EH2RR 31-32. He also recently served on a working group convened by the United States Government Accountability Office and the National Academy of Sciences to address issues involving forensic algorithms, including those used in probabilistic genotyping. *Id*. at 32. Dr. Krane has been qualified as an expert in forensic DNA profiling, molecular biology, population genetics, and bioinformatics in over one hundred cases in multiple jurisdictions both in the United States and abroad. *Id*. at 33-34. In light of his qualifications, experience and background, the Court finds Dr. Krane's testimony is credible and entitled to significant weight.

134. Dr. Krane testified that the year 2015 was a "watershed" moment in the scientific community with respect to DNA mixture interpretation. 20 EH2RR 46. Prior to that time, most DNA laboratories were interpreting DNA mixtures of more than two contributors,

known as complex mixtures, based on validation studies that had been performed with mixtures of only two contributors. 20 EH2RR 45-46. In 2015, when problems relating to complex mixture interpretation arose in the Washington D.C. crime laboratory, it became widely appreciated that validation studies for two-person mixtures could not be used to draw inferences for mixtures of more than two individuals. *Id*.

135. Although SWGDAM issued guidelines in 2010 recommending that labs validate their mixture interpretation procedures, it took several years for labs to implement the guidelines and recognize the need to perform validations specifically for complex mixtures. *Id*. at 47-48; App2X 157. Since 2010, several other guidelines and authoritative documents have been published, cementing the unequivocal scientific consensus that methods for interpreting complex mixtures must be based on a lab's internal validation studies.[12]

136. Additionally, issues surrounding the interpretation of complex mixtures were brought to the forefront of the scientific community's discourse by the publication of the PCAST report in September 2016. 20 EH2RR 48. The PCAST report found the methods used by most labs for interpreting complex DNA mixtures were problematic because subjective choices by analysts can lead to dramatically different and sometimes inaccurate conclusions. App2X 88 at 76. The problem of subjectivity is particularly acute when using CPI/CPE statistics, as the determination of whether to include a locus in the calculation is often subject to the whims of the examiner. *Id.* Scientific studies show that analysts are more likely to include a suspect in a mixture when provided irrelevant background information about the crime, whereas analysts who are not provided such information are more likely to exclude the suspect. *Id.* at 76-77. Accordingly, the PCAST report found that current methods for calculating the CPI/CPE statistic are "inadequately specified," "inappropriately subjective," and "clearly not foundationally valid." *Id.* at 78; 20 EH2RR 48. It further found that while several groups have launched efforts to develop more objective mixture interpretation methods through probabilistic genotyping computer software programs, these programs had yet to be established as reliable for all types of DNA mixtures. App2X 88 at 80-81.

137. Dr. Krane provided further insights as to why the interpretation of complex mixtures is difficult and often influenced by the subjective decisions of an examiner. Dr. Krane explained that as the number of contributors to a DNA mixture increases and the quality of the DNA decreases, it becomes much more difficult to interpret. 20 EH2RR 53. Degradation is one factor that complicates the interpretation of mixtures. Degradation is caused by a number of environmental factors, such as exposure to light or storage in a warm or moist environment. *Id.* at 60. Degradation can lead to the loss of information about a DNA sample, causing a "ski slope" effect on the electropherogram, where the peak heights become progressively smaller as you move from left to right. *Id*.

[12] These include the SWGDAM 2016 Validation Guidelines for DNA Analysis Methods (App2X 158); the SWGDAM 2017 Interpretation Guidelines for Autosomal STR Typing by Forensic DNA Testing Laboratories (App2X 159), the 2018 ASB Standard for Validation Studies of DNA Mixtures, and Development and Verification of a Laboratory's Mixture Interpretation Protocol ("ASB Standard 20") (App2X 135); and the 2019 ASB Standard for Forensic DNA Interpretation and Comparison Protocols ("ASB Standard 40") (App2X 136).

138. Mixture interpretation is further complicated by phenomena referred to as allele stacking and stutter. 20 EH2RR at 54-55. Allele stacking occurs when individuals share alleles in common, and as a result, they overlap or mask the other person's contribution. *Id.* at 54. Another problem occurs when technical artifacts associated with one contributor can be misconstrued as contributions from another contributor. *Id.* One type of technical artifact, known as stutter, causes a stutter peak on the electropherogram, making it difficult for analysts to determine whether what they see is merely an artifact or the contribution of another individual. *Id.* at 55. When factoring in the possibility of allelic dropout and degradation—which can cause some of the DNA associated with the sample not to be detected—allele stacking and stutter dramatically compound the difficulties in arriving at a reliable interpretation. *Id*.

139. Scientific studies demonstrate that these difficulties invariably cause analysts to underestimate the number of contributors to a sample. 20 EH2RR 56. One peer-reviewed article co-authored by Dr. Krane found that for three-person mixtures where there was no allelic drop—i.e., all alleles were detected—there was a real risk of mischaracterizing the mixture by underestimating the number of contributors. *Id.* at 58; App2X 130 (Paoletti et al., *Empirical Analysis of the STR Profiles Resulting from Conceptual Mixtures*, J. FORENSIC SCI. (2005)); *see also* App2X 131 (Paoletti et al., *Inferring the Number of Contributors to Mixed DNA Profiles*, IEEE/ACM TRANSACTIONS ON COMPUTATIONAL BIOLOGY AND BIOINFORMATICS (2012)). As the number of contributors and complexity of the mixture increased, the mischaracterization rate increased. *Id*. As a result of Dr. Krane's article, the scientific community became more aware that analysts should not characterize samples as a two-person mixture, but rather as a mixture of "at least two persons," in order to recognize the possibility of more than two contributors. 20 EH2RR 58-59.

140. Another scientific study found that when half of the alleles are lost from degradation in a three-person mixture, there is a 20 to 30 percent mischaracterization rate of underestimating the number of contributors. *Id*. at 87-89; App2X 134 (Haned et al., *Estimating the Number of Contributors to Forensic DNA Mixtures: Does Maximum Likelihood Perform Better than Maximum Allele Count*, J. FORENSIC SCI. (2011)). With regard to the risk of mischaracterizing a DNA mixture, the PCAST report observed that "[i]t is often impossible to tell with certainty which alleles are present in the mixture or how many separate individuals contributed to the mixture, let alone accurately to infer the DNA profile of each individual." App2X 88 at 76.

2. The revised DNA statistics conducted by Mitotyping and Dr. Budowle

141. The Court finds that the FBI notice and subsequent recalculations of the statistical frequencies constitutes newly-available scientific evidence.

Revised Statistics: Stain B from Applicant's Nautica Shirt

142. Dr. Budowle determined that the results from the profile obtained by Morris from Stain B from Applicant's Nautica Shirt were insufficient to render an interpretation. He therefore deemed the results of his analysis inconclusive. SW2X 4; Applicant's

Subsequent Writ Hearing Exhibit 202.

143. Mitotyping determined that the results from the profile obtained by Fahrner Roe from Stain B from Applicant's Nautica shirt inadequate for any comparisons to known samples using currently available techniques at Mitotyping. AW2X 11.

Revised Statistics: Stain D from Applicant's Nautica Shirt

144. Mitotyping determined that the results from the profile obtained by Fahrner Roe from Stain D from Applicant's Nautica shirt inadequate for any comparisons to known samples using currently available techniques at Mitotyping. AW2X 11.

Revised Statistics: FIL Item 03.4 from Applicant's Nautica Shirt

145. Mitotyping determined the profile obtained by Fahrner Roe from FIL Item 03.4 from Applicant's Nautica shirt was a mixed profile of at least three contributors but that Fahrner Roe's results were inadequate for any comparisons to known samples using currently available techniques at Mitotyping. AW2X 11.

Revised Statistics: FIL Item 7 from Applicant's Mazda

146. Mitotyping determined that FIL Item 7 was a partial mixed profile of at least two contributors at least one of whom was male. Both Cesar and Applicant are inconclusive as contributors to the mixed profile and Mitotyping further concluded that Bianca could not be excluded as the major contributor to the profile. Mitotyping calculated the RMP results for the major profile extracted from FIL Item 7 at 1 in 200 trillion for Caucasians, 1 in 18 quadrillion for Blacks and 1 in 10 trillion for Hispanics. AW2X 11.

Revised Statistics: FIL Item 8 from Applicant's Mazda

147. Mitotyping determined that FIL Item 8 was a mixed profile of at least two contributors at least one of whom was male. Neither Applicant nor Bianca could be excluded as contributors to the mixed profile. Mitotyping calculated the CPI statistics for FIL Item 8 at 1 in 4.7 million for Caucasians, 1 in 400 million for Blacks and 1 in 620,000 for Hispanics. AW2X 11.

Revised Statistics: Stain E from Applicant's right Polo shoe

148. Dr. Budowle concurred with the APD DNA Lab's interpretation of Stain E as a single source DNA profile consistent with Bianca's known DNA profile, and he updated the calculations to reflect RMP results of 1 in 379.4 quadrillion for Caucasions, 1 in 2.9 quintillion for Blacks and 9.5 quadrillion for Hispanics. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

149. Dr. Budowle further noted that, with respect to Stain E, his recalculations were

"not significantly different than those originally provided by" the APD DNA Lab. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

150. Mitotyping likewise determined that the DNA profile extracted from Stain E was a single source DNA profile consistent with Bianca's known profile. Mitotyping calculated the RMP results for the profile a 1 in 110 quintillion for Caucasians, 1 in 7.6 sextillion for Blacks and 1 in 3.3 quintillion for Hispanics. AW2X 11.

Revised Statistics: Stain G from Applicant's Right Polo shoe

151. Dr. Budowle concurred with the APD DNA Lab's interpretation of Stain E as a mixture from which neither Applicant, Bianca nor Cesar could be excluded. He did, however, find that the APD Lab's CPI calculations were not scientifically supportable and recalculated those statistics, placing, instead, the RMP results for the Applicant and Bianca as the two major contributors to this mixture at all but one locus at 1 in 230,835 for Caucasians, 1 in 4.9 million for Blacks and 1 in 32,291 for Hispanics. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

Revised Statistics: Stain H from Applicant's Left Polo Shoe

152. Dr. Budowle concurred with the APD DNA Lab's interpretation of Stain H as a mixture from which Bianca could not be excluded as contributor to the major component in the profile. He updated the calculations to reflect RMP results of 1 in 379.4 quadrillion for Caucasians, 1 in 2.9 quintillion for Blacks and 9.5 quadrillion for Hispanics. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

153. Dr. Budowle further noted that, with respect to Stain H, his recalculations were "not significantly different than those originally provided by" the APD DNA Lab. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

154. Mitotyping concurred with Fahrner Roe's conclusions about Stain H as a mixed profile of at least two contributors from which Bianca could not be excluded as a major contributor. It calculated the RMP results for the major contributor at 1 in 110 quintillion for Caucasians, 1 in 7.6 sextillion for Blacks and 1 in 3.3 quintillion for Hispanics. AW2X 11.

Revised Statistics: Stain J from Applicant's Left Polo Shoe

155. Dr. Budowle concurred with the APD DNA Lab's interpretation of Stain J as a single source DNA profile consistent with Bianca's known DNA profile, and he updated the calculations to reflect RMP results of 1 in 9.3 trillion for Caucasians, 1 in 37.5 trillion for Blacks and 1.1 trillion for Hispanics. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

156. Dr. Budowle further noted that, with respect to Stain J, his recalculations were "not significantly different than those originally provided by" the APD DNA Lab. SW2X

4; Applicant's Subsequent Writ Hearing Exhibit 202.

157. Mitotyping likewise determined that the DNA profile extracted from Stain J was a single source DNA profile consistent with Bianca's known profile. Mitotyping calculated the RMP results for the profile at 1 in 110 quintillion for Caucasians, 1 in 7.6 sextillion for Blacks and 1 in 3.3 quintillion for Hispanics. AW2X 11.

Revised Statistics: Stain M from Applicant's Left Polo Shoe

158. Dr. Budowle concurred with the APD DNA Lab's interpretation of Stain J as a mixture from which Bianca could be excluded as a contributor to the major component in the profile. He further concurred that neither Applicant nor Cesar could be excluded. He did, however, find that the APD Lab's CPI calculations were not scientifically supportable and recalculated those statistics, placing, instead, the RMP results for the major contributor to this mixture at 1 in 37904 quadrillion for Caucasians, 1 in 1.9 quintillion for Blacks and 1 in 9.5 quadrillion for Hispanics. SW2X 4; Applicant's Subsequent Writ Hearing Exhibit 202.

159. Mitotyping determined that the results from the profile obtained by Fahrner Roe from Stain M were a mixed profile for at least three contributors but that Farhner Roe's results were inadequate for any comparisons to known samples using currently available techniques at Mitotyping. AW2X 11.

3. Evidence concerning the DNA analyses conducted by Fairfax and the reinterpretations by Mitotyping

160. Like most DNA labs, when Fairfax performed the testing in Mr. Escobar's case in 2011, it had not conducted any validation studies for STR analysis of mixtures with three or more contributors. App2X 167 (Affidavit of Marisa Roe, July 15, 2020) ¶ 17. Accordingly, on August 10, 2016, Mitotyping Technologies ("Mitotyping")—a private DNA lab that merged with Fairfax Identity Laboratories in 2014—issued an amended case report incorporating "newer guidelines for mixture interpretation and the FBI population database revisions." App2X 11 (Mitotyping Amended Forensic Case Report, August 1, 2016).

161. At the time Mitotyping issued its report, the lab's work focused primarily on mitochondrial DNA testing, a specialized field distinct from STR testing. App2X 127 (Affidavit of Ross Kirkendoll, July 13, 2020). Like Fairfax, the lab had not completed any validation studies for mixtures of three or more individuals. *Id.* ¶ 6. Ross Kirkendoll, who authored the Mitotyping report, acknowledged that when labs interpreted mixtures with three or more people without the requisite validation studies (as was done by Fairfax here), "analysts were essentially using practices which were not scientifically sound to reach their conclusions." *Id*. ¶ 6.

162. In the absence of proper validation studies, Mr. Kirkendoll concluded that several DNA mixtures previously interpreted by Fairfax could no longer be interpreted. App2X 11 at 6, 8, 9; App2X 127 ¶ 7. These samples included APD Item 17.3/Fairfax Item 1.2, Stain C

from the door knob lock; APD Item 78.2/Fairfax Item 1.1, Stain B from the Nautica shirt; APD Item 78.4/Fairfax Item 2.1.3, Stain D from the Nautica shirt; Fairfax Item 3.4, additional cutting from Nautica shirt; and APD Item 84.16/Fairfax Item 2.2.5, Stain M from the left Polo shoe. App2X 11 at 6, 8, 9. In accordance with Mitotyping's SOPs, Mr. Kirkendoll determined these samples were "inconclusive" and recommended that additional testing be conducted with probabilistic genotyping. App2X 127 ¶ 7 and Attachment A (excerpt from Mitotyping SOPs).

163. While it is uncontested that neither Fairfax nor Mitotyping had validation studies for mixtures of three or more individuals, *none* of Fairfax's SOPs, validation studies, and other quality assurance protocols in place when the testing was conducted remain available for review today; they either no longer exist or cannot be obtained.[13] 20 EH2RR 40. The Court finds that the inability to assess any of Fairfax's validation studies diminishes confidence in the lab's conclusions. 20 EH2RR 42-43.

164. Dr. Krane testified that in addition to the samples that Mitotyping determined were uninterpretable, two additional mixed samples—Fairfax Items 7 and 8, the Mazda swabs—should be deemed inconclusive in accordance with current scientific knowledge. 20 EH2RR 104, 120-121. Dr. Krane explained that both of these samples are degraded, as reflected in the progressive shortening of the peak heights from left to right on the electropherograms. 20 EH2RR 62-66.

165. Marisa Roe initially characterized Item 7, a swab from the driver door armrest area of the Mazda, as "a mixed profile of at least two contributors, at least one of whom is male" and concluded that Mr. Escobar and Cesar Maldonado were both inconclusive as contributors. 20 EH2RR 66; SW2X3 (Fairfax Lab Report, April 19, 2011) at 3. Mr. Kirkendoll similarly characterized the sample as "a *partial* mixed profile of at least two contributors, at least one of whom is male," and likewise concluded that both Mr. Escobar and Cesar were inconclusive as contributors. 20 EH2RR 69-70; App2X 11 at 7. The use of the word "partial" denotes acknowledgement that the sample is degraded. 20 EH2RR 69-70. As such, both Ms. Roe and Mr. Kirkendoll acknowledged that Item 7 is a complex mixture with an unknown number of contributors. 20 EH2RR 68. However, both then calculated a Random Match Probability statistic for the alleles they determined to be associated with the major contributor. 20 EH2RR 68, 70.

166. The approach taken by Ms. Roe and Mr. Kirkendoll is problematic. Dr. Krane explained that because Item 7 is degraded, has indications of missing data, and has an

[13] During the course of these proceedings, counsel for Mr. Escobar diligently sought access to Fairfax's SOPs, validation studies, contamination logs, incident reports, corrective actions, internal and external audits, and accreditation reviews. *See* Applicant's Supplemental Motion for Discovery, filed July 25, 2018; Applicant's Amended Motion for Disclosure of Materials Related to Fairfax Identity Laboratories and Mitotyping Technologies, filed November 7, 2018; Applicant's Renewed Motion for Disclosure of Materials Related to Fairfax Identity Laboratories, Mitotyping Technologies, and the "Case Review" Conducted by Bruce Budowle, Ph.D., filed August 12, 2019. This Court subsequently entered an Order directing Health Network Labs ("HNL"), which acquired Fairfax and Mitotyping, to produce responsive documentation. On January 8, 2020, HNL filed a response to the Order, indicating that the materials sought with regard to Fairfax were not available because "HNL's record retention period for quality documents is 5 years."

unknown number of contributors, it is impossible to determine with confidence what the data actually means. 20 EH2RR 73-74. App2X 132c (Electropherogram for Item 7, April 18, 2011). The interpretation of the profile is further complicated by the possibility of allelic stacking, which can make it difficult to identify contributions from one or more minor contributors who may share alleles with the major contributor. 20 EH2RR 73-74. Because of these complexities, there is no confidence that the loci identified by Ms. Roe and Mr. Kirkendoll as belonging to the major contributor can actually be associated with a major contributor. *Id*. Furthermore, there is no objective method for determining the number of contributors and whether allelic dropout did or did not occur. 20 EH2RR 82, 86. Accordingly, this Court finds that the most appropriate interpretation is to describe Item 7 as inconclusive, in accordance with Dr. Krane's analysis. *Id.* at 82.

167. The interpretations rendered by Fairfax and Mitotyping for Item 8, a swab from the driver side center console of the Mazda, are similarly unreliable. Ms. Roe initially characterized this sample as "a mixed profile of at least two contributors, at least one of whom is male." 20 EH2RR 89; SW2X 3 at 3. Mr. Kirkendoll also characterized Item 8 as "a mixed profile of at least two contributors, at least one of whom is male." App2X 11 at 7. Both Ms. Roe and Mr. Kirkendoll calculated a CPI/CPE statistic for this sample. SW2X 3 at 3; App2X 11 at 7. However, Ms. Roe recently acknowledged, via affidavit, that she now "believe[s] there were *probably more than two contributors* to the mixture due to peak height ratios at several loci, however no loci presented with 5+ peaks to confirm more than two contributors." App2X 126 ¶ 16 (emphasis added). Based on Ms. Roe's acknowledgement alone, this Court finds that Item 8 should be deemed inconclusive in light of the absence of validation studies at both Fairfax and Mitotyping for mixtures of three or more people, and in accordance with Mitotyping's policy not to interpret mixtures of three or more people.

168. Failure to detect a fifth allele is not proof that a sample has only two contributors. 20 EH2RR 92-93. This is especially the case when there are differences in peak heights for the alleles at any given locus that might otherwise be attributed to a single individual. Because it is expected that a person who is a heterozygote (has two alleles at a given locus) contributes roughly equivalent amounts of DNA for each allele, if the peak heights for the two alleles are not in balance, this could indicate the presence of another contributor. 20 EH2RR 93-94. Dr. Krane identified multiple loci where this could have occurred on the electropherogram, including at one locus where interpretation is even further complicated by possible stutter. *Id.* at 93-94, 96-98.

169. Another complicating factor is the significant saturation in the testing data for Items 7 and 8. Saturation can occur during the amplification step of the DNA testing process if too much DNA is used for the amplification reaction. 20 EH2RR App2X 125 (Affidavit of Simon Ford, May 20, 2013) ¶ 18. This overwhelms the instrument's photodetector such that the intensity of the signal changes the shape and height of the peaks and creates artifacts such as pull-up, which occurs when the instrument fails to detect the different colored dyes associated with each DNA marker. 20 EH2RR 117-119. To prevent saturation and ensure reliable results,[14] the test kit manufacturer recommends using between 0.5 and

[14] Dr. Krane explained that one of the reasons why test kit manufacturers provide guidelines for the optimum quantity

1.25 nanograms for the amplification. In this case, however, Ms. Roe used up to 7 nanograms of DNA for Item 7 and up to 4.9 nanograms of DNA for Item 8. 20 EH2RR 110-114. She then exacerbated the problem by injecting Items 7 and 8 for 15 seconds, whereas most labs use an injection time of 5 or 10 seconds. 20 EH2RR 116-117. The testing data indicates that instead of going back and reamplifying a lower amount of DNA or injecting the samples for less time, she kept reinjecting the same amount of DNA for the same amount of time, resulting in significant saturation in the electropherograms. App2X 139-141 (STR Load Sheets for Mazda samples); 20 EH2RR 119-120, 125.

170. The reliability of Ms. Roe's interpretation of Items 7 and 8 is further undermined by the fact that she was exposed to task-irrelevant information prior to conducting her analysis. App2X 7 (Emails between ADA Wetzel and Marisa Fahrner (Roe); App2X 127 ¶ 14. Specifically, the DA's Office informed Ms. Roe of the prosecution's unproven theory about the Mazda samples, including that "[t]he defendant drove the vehicle from the crime scene to his friend's house." *Id*. The Court finds that this information had absolutely no relevance to Ms. Roe's analysis and served no purpose but to create a risk of examiner bias. 20 EH2RR 85-86.

171. In sum, Dr. Krane determined that in light of the absence of validation studies at both Fairfax and Mitotyping for mixtures of three or more individuals, the inability to access *any* of Fairfax's validation studies, the unknown number of contributors to Items 7 and 8, the possibility of allelic dropout, the degradation and saturation present with respect to these samples, and Ms. Roe's exposure to task-irrelevant and potentially biasing information about the case, the most appropriate conclusion would be to deem the samples inconclusive and not suitable for interpretation. 20 EH2RR 120-121. This Court adopts Dr. Krane's conclusions about Items 7 and 8.

172. In addition to the specific problems associated with the interpretation of Items 7 and 8, Ms. Roe made a significant error during the processing of other samples that raises further questions about her competence and the adequacy of Fairfax's quality control practices. App2X 125 ¶¶ 19-24; App2X 127 ¶¶ 5-13. On March 17, 2011, Ms. Roe misplaced several samples while preparing the 96-well plate that is loaded onto the capillary electrophoresis ("CE") instrument. App2X 126 ¶ 5. The samples processed in this batch included swabs from the Polo shoes, the Nautica shirt, and the front doorknob lock. App2X 125 ¶ 19; App2X 142.

173. Ms. Roe made the error while pipetting the samples into the well plate, which was covered with foil to prevent contamination. Ms. Roe described this process "like playing the game of Battleship," because the foil made it difficult to see the placement of the samples and she had to "cherry pick" the location where she punctured the foil with the pipette. App2X 126 ¶ 5. After running the samples, she saw data in the negative control, which should not show any data. *Id.* ¶ 6. She then confirmed that she had misplaced the

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of DNA is to discourage labs from trying to draw conclusions from very small or trace amounts of DNA that could have been deposited on an item through contamination or that was present on the item long before a crime took place. 20 EH2RR 123-124.

samples in the tray by pulling the foil out of the trash can and examining where the holes had been punctured. *Id.* ¶ 7.

174. Ms. Roe's response to the incident indicates she did not understand the seriousness of her error. She decided to rerun only selected samples and did not rerun the entire batch. App2X 126 ¶ 8. Although she made a note of the error in her casefile, it appears she was not required to perform a root cause analysis or generate a corrective action report. *Id*. ¶ 9.

175. The Court finds this incident raises serious concerns that Fairfax's quality assurance and quality control system was inadequate to effectively address this type of error in Mr. Escobar's case as well as in others. When considered in cumulation with the downstream effects of the APD DNA lab issues, the developments in mixture interpretation, and the absence of Fairfax's validation studies, this incident provides further reason to question the overall reliability of the DNA results generated by Fairfax.

4. Evidence pertaining to the DNA interpretations conducted by the APD DNA lab

176. Notwithstanding the serious quality issues surrounding the APD DNA lab discussed *supra*, efforts were also made to correct APD's DNA interpretations in this case and in others, to account for the scientific developments in mixture interpretation. On December 14, 2015, in response to the TFSC's notification regarding outdated mixture interpretation protocols, APD issued a supplemental report indicating that the results for several DNA samples in Mr. Escobar's case require correction. App2X 9 (APD Forensic Biology Section, Information Only Laboratory Report, December 14, 2015). The report indicated that several items, including Stain B from the Nautica shirt (APD Item 78.2), Stain D from the Lee jeans (APD Item 86.5), Stain G from the right Polo shoe (APD Item 84.8), and Stain M from the left Polo shoe (APD Item 84.16), "were originally calculated using an outdated protocol," but that "[f]urther analytical work will need to be performed to determine if an updated report can be issued for these samples in the future." *Id*. at 2. Given the closure of lab in 2016, it does not appear that any "further analytical work" was ever conducted by APD in relation to this case.

177. In March 2017, after Mr. Escobar filed the instant writ application, the Travis County DA's Office asked Dr. Budowle to review APD's DNA interpretations and statistical calculations for selected samples in this case. SW2X 4, Attachment B. Because Dr. Budowle's review was confined to the limited documentation provided by the State and did not include a full review of APD's quality assurance practices, including the Forensic Science Division's evidence handling practices and opportunities for contamination prior to DNA testing, the Court finds that most of the conclusions included in Dr. Budowle's case report have little relevance to the issues in this case, but a few of Dr. Budowle's conclusions are worth noting.

178. First, as discussed previously, Dr. Budowle found that APD improperly calculated two difference CPE/CPI statistics for APD Item 84.16, Stain M from the left Polo shoe, indicating suspect-driven bias. SW2X 4, Attachment B at 2. Second, Dr. Budowle

concluded that the DNA profile developed from APD Item 78.2, Stain B from the Nautica shirt, was "insufficient to render an interpretation, and the interpretation should have been inconclusive." *Id.* at 2.

179. Third, Dr. Budowle concluded that Mr. Escobar, Bianca Maldonado and Cesar Maldonado could not be excluded as contributors to APD Item 84.8, Stain G from the right Polo shoe. *Id.* at 2-3. In his case report, he reported a CPI statistic of "1 in 36,291 quadrillion (Hispanics)." *Id*. The State argued in its Answer to Mr. Escobar's writ application that this statistic "exceeds the inverse of the world's population many times over." State's Answer, at 108. During his testimony at the evidentiary hearing, Dr. Budowle testified that his report contained a typographical error and that the actual CPI statistic for this item is 1 in 36,291 Hispanics. 21 EH2RR 45-46. The Court understands that such mistakes can easily be made and points this out not to embarrass but merely to illustrate how even innocent mistakes made during DNA interpretation can have serious and tangible effects in a criminal case.

G. The relevant scientific evidence did not become available until years after Mr. Escobar's trial

180. Both categories of evidence discussed above—that relating to the quality issues at the APD DNA lab and that relating to the scientific developments in DNA mixture interpretation—did not become available to Mr. Escobar until several years after his 2011 trial.

1. Evidence concerning the APD lab crisis did not become available until 2016

181. As to the first category of evidence, it is not an overstatement to say that the entire criminal justice community, as well as the scientific community, was completely caught off guard by the issues uncovered by the TFSC audit of the APD DNA lab. The TFSC report itself raised serious concerns that the DNA lab's problems had not been identified by any previous external audits. App2X 144 at 26-27. The TFSC report found, and Dr. Budowle testified, that despite the shortcomings of the accreditation system, "criminal justice stakeholders relied on accreditation as an indication that the quality of the laboratory's work is sound." App2X 88 at 27; 21 EH2RR 152. *See also* App2X 195 ¶ 26. The Quattrone Center similarly found that overreliance on accreditation as a guarantee of quality "contributed to the lack of awareness of the issues in the APD DNA Laboratory over time." App2X 195, Attachment J at 79.

182. If the scientists tasked with auditing the APD DNA Section failed to detect the significant issues permeating the lab prior to 2016, then it would be patently unreasonable to expect Mr. Escobar's trial attorneys to have discovered these issues prior to his 2011 trial. Indeed, trial counsel Allan Williams and Steve Brittain testified via affidavit that they "relied on the fact that both the APD DNA lab and Fairfax were accredited laboratories," and thus "had no reason to suspect that either lab generally employed unscientific methods for DNA testing and interpretation." App2X 201 ¶ 2.[15] The Court has no reason to doubt

[15] Mr. Williams and Mr. Brittain have decades-long experience as well-respected criminal defense attorneys in Travis

this testimony, which is fully supported by the findings of both the Quattrone Center and the TFSC. Mr. Williams and Mr. Brittain further state that while they were informed about some of Stacey Wells's work performance issues, they had no reason to believe these issues "were anything more than isolated incidents," and "had no reason to suspect that the Forensic Science Division—as a whole—suffered from serious quality assurance issues such as problems with inadequate documentation, poor leadership, and the complete absence of root cause analyses." *Id.* ¶ 9.

183. Even if trial counsel had attempted to investigate APD's quality issues, any investigation would not have been fruitful, given that the prior quality complaint filed by Cecily Hamilton was dismissed as a "personality conflict" issue. App2X 195, Attachment J at 48. The lab's culture of lack of transparency, poor documentation practices, and failure to understand its disclosure obligations would have posed significant hurdles to any efforts to uncover the lab's institutional incompetence. App2X 195, ¶¶ 25-28, 31-48 and Attachment J at 19, 49. Indeed, multiple APD employees have acknowledged that contamination incidents were not shared outside of the lab, nor is there any guarantee that all quality incidents were actually documented in writing. App2X 195, ¶¶ 34, 44, and Attachment J at 50, note 169.

184. Accordingly, the Court finds that the evidence concerning the APD lab's issues did not become available until 2016, after the publication of the TFSC audit report.

2. Evidence concerning the developments in DNA mixture interpretation did not become available until August 2015 at the earliest

185. While scientists and researchers have been aware of the difficulties of mixture interpretation for some time, it wasn't until 2015 that labs nationwide, including in Texas, became aware of the need to update their mixture interpretation protocols in accordance with current scientific knowledge. 20 EH2RR 46-48; App2X 144 at 10-12; App2X 88 at 77-78; App2X 127 ¶ 6. The Court finds that the evidence concerning developments in DNA mixture interpretation did not become available, at the very earliest, until August 21, 2015, when the TFSC issued a letter to the criminal justice community about the need to reinterpret DNA mixtures. SW2X 17 at 3; App2X 195, Attachment J at 21; 21 EH2RR 115.

186. Some of the evidence presented by Mr. Escobar did not become available until even later. This includes the APD report of December 14, 2015, indicating that some of the DNA samples in Mr. Escobar's required reinterpretation (App2X 9); the Mitotyping report of August 10, 2016 (App2X 11); and Dr. Budowle's report of March 31, 2017 (App2X 44), which did not become available until after Mr. Escobar filed the instant writ application. Furthermore, much of the legal community did not become fully aware of the problems related to the subjectivity of mixture interpretation until the publication of the PCAST report in September 2016, which found that the CPI/CPE statistic is not foundationally valid. App2X 88 at 78.

County. Both have tried numerous capital murder cases, including several death penalty cases. App2X 201 ¶ 1. The Court finds the testimony of Mr. Williams and Mr. Brittain credible.

H. The new scientific evidence regarding the APD lab's problems and the developments in DNA mixture interpretation either contradicts or seriously undermines the reliability of all DNA evidence relied on by the State at trial

1. The new scientific evidence concerning the APD lab crisis renders all DNA evidence connected to APD unreliable

a. As a result of the serious quality issues at the APD DNA lab and Forensic Science Division, all DNA results produced by the lab in this case have diminished reliability

187. The Court adopts the agreed upon conclusion of Dr. Krane, Professor Inman, and Dr. Budowle that in light of the number and seriousness of the errors that plagued the APD lab, it is difficult to have confidence in any DNA results produced by the DNA section.

188. Dr. Krane testified that individually, each of the issues identified by the TFSC audit, as well as the additional problems discovered later, "diminishes the confidence that . . . any reasonable person would put in the work product of the laboratory." 20 EH2RR 153. When considered cumulatively, the issues have an "inconceivably compounding" and "multiplicative" effect, such that the spectrum of confidence in the lab's work is "moving in the direction of zero." 20 EH2RR 154. Dr. Krane further testified there is no scientific method for assessing the probability of error based on the types of problems prevalent at the lab, because it is assumed "that people would know not to go down those paths." 20 EH2RR 154-155. In other words, there are strong reasons to believe that *all* DNA results emanating from the lab should not be trusted, but there is no way to place a precise numerical value on the risk of error that exists in this case or in others.

189. Professor Inman's assessment of APD's work product was equally stark, finding that APD's "long history and circumstances . . . substantiate the contention that significant questions could be raised about the reliability of any scientific result emerging from the APD Laboratory." App2X 195 ¶ 30. Furthermore, because of the opportunities for error at every step of the forensic process, from the collection of evidence at the crime scene to the testing of evidentiary samples by the DNA lab, "uncertainty exists for any one item of physical evidence, regardless of the quality of work conducted by the DNA section or the 'reported' result for any one specific item of evidence." *Id*. ¶ 30. "In sum, the risk of error in this case exceeds that of laboratories possessing agency-wide robust quality systems, and extends beyond just the DNA section of the APD Laboratory." *Id*. ¶ 107.

190. The State's expert Dr. Budowle likewise expressed concern about the quality of APD's work product as a whole. He testified that he would "have a low expectation on a general level for that lab if it was in the same conditions, doing the same thing, with all the information that has been brought to light over the past few years." 21 EH2RR 230. "That would be a low expectation because they didn't address the concerns and didn't improve the process." *Id*. He agreed it was appropriate for the lab to shut down to avoid "catastrophic failures," 21 EH2RR 228, and told the DA's Office that he believed APD's entire quality assurance system needed to be overhauled. *Id*. at 153.

191. Although Dr. Budowle testified he believes the APD DNA lab was capable of producing "some" reliable work, such as generating and interpreting a single source profile, 20 EH2RR 195, the Court finds this portion of his testimony is of limited value for several reasons. First, Dr. Budowle's case reviews focused on the lab's interpretations of the DNA profiles generated by the lab, based on the lab's casefiles and the raw data "in some cases." 20 EH2RR 184-185. Although he also reviewed these cases for contamination, his contamination reviews were confined to the testing data and consisted primarily of looking at the order in which samples were handled during DNA analysis. *Id.* at 185-186. Second, other evidence that Dr. Budowle admittedly did not consider reveals significant quality issues not just within the DNA lab, but across APD's entire Forensic Science Division. *See*, *e.g.*, App2X 195. Because of the risk of error and opportunities for contamination prior to DNA analysis, Dr. Budowle's opinions regarding APD's ability or inability to interpret certain types of DNA profiles say nothing about APD's ability to generate DNA profiles that accurately and reliably reflect the original crime scene evidence. Third, Dr. Budowle's opinion was based on his review of 46 cases that, by the State's own concession, do not constitute a representative sample of all of the DNA lab's work.[16] 21 EH2RR 25.

192. Dr. Budowle also expressed the view that a lab's or particular analyst's error rates have limited usefulness in assessing the reliability of the results in any given case. 21 EH2RR 197. He testified that past errors are not a good measure of future performance in forensic science because "[t]here's a quality assurance program" that will result in remediation of any issues causing errors. 14 EH2RR 190, 196.

193. The Court agrees that a general error rate has only limited value in the assessment of the accuracy of a single test but does not agree that error rates have little utility in forensic science, particularly in a death penalty case where fact-finding procedures must aspire to a heightened standard of reliability.[17] Rather, the APD lab's historical errors and the errors of the specific analysts involved in Mr. Escobar's case are directly relevant to assessing the reliability of the DNA evidence in this case. Moreover, Dr. Budowle's opinion that the commission of errors triggers a quality assurance response that "improves the process" is

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[16] Mr. Escobar objected to the admission of Dr. Budowle's reports in these 46 cases, compiled in SW2X 76, on the ground that the reports are irrelevant, misleading, prejudicial, and do not reflect a representative sampling of cases that may have been affected by the APD DNA lab's systemic issues. On September 23, 2020, the Court received a letter from representatives of the Capital Area Private Defender Service Forensic Project and private attorneys representing individuals affected by the APD DNA lab issues. *See Letter to Hon. Wahlberg Regarding Ex Parte Areli Escobar Exhibit 76*, dated September 23, 2020. The letter provides further details about how these 46 cases came to be reviewed by Dr. Budowle and why they do not capture all of the problems within the lab. On September 29, 2020, Stacie Lieberman, Director of the Forensic Project at CAPDS, appeared before the Court and provided further information about the concerns raised in the letter. 25 EH2RR 34-46. The Court overruled Mr. Escobar's objection and admitted SW2X 76 under seal. However, given the concerns about other pending cases that might be impacted by SW2X 76, and because the Court agrees that the 46 cases are not a representative sample of the APD DNA lab's work, the Court has not relied on this exhibit to draw any inferences about the overall performance of the lab.

[17] Indeed, the CCA has explicitly recognized that error rates are an important aspect of forensic science that should be considered in the context of new science claims under Tex. Code Crim. Proc. art. 11.073(d). *Ex parte Robbins (Robbins II)*, 478 S.W.3d 678, 691-692 (Tex. Crim. App. 2014) (quoting BLACK'S LAW DICTIONARY 1004 (10th ed.2014)) (identifying "known or potential rate of error" as one of the four factors that should be assessed in determining whether knowledge is "grounded on scientific methods").

flatly contradicted by evidence of the failures of APD's quality assurance system, including Dr. Budowle's own testimony that the entire quality assurance system needed to be overhauled. 21 EH2RR 153.

194. Mr. Escobar also presented evidence that in December 2016, a representative from the Travis County DA's Office indicated that APD's senior DNA analysts "may no longer be utilized for expert testimony[.]" App2X 129 ¶ 12 and Attachment D (Letter from Brady Mills to Brandon Grunewald, December 12, 2016). As mentioned above, Travis County DA Margaret Moore then sent a letter to APD Assistant Chief Troy Gay, indicating the DA's Office would no longer sponsor Diana Morales as a witness in either DNA analysis or serology. App2X 53; SW2X 56. On May 23, 2018, DA Moore issued a second letter reversing her position with regards to sponsoring Ms. Morales as an expert witness in serology. App2X 192, Attachment B. The stated reason for this policy reversal—that the DA's Office had no "reason to believe that serology work done by Diana Morales was defective or unreliable"—is dubious, particularly in light of Ms. Morales's inability to complete the remedial serology training by DPS and the issues in her serology work in the case discussed above. Indeed, it appears the policy reversal may have been specifically motivated by the need to respond to Mr. Escobar's writ application.[18] Regardless of the reasons for this policy reversal, the fact that the DA's Office is now willing to rely on Ms. Morales's past serology work does not change this Court's finding that all of her work and that of the APD DNA lab in general can no longer be viewed as reliable.

195. What the Court finds most salient is that the problems at the APD DNA lab were of such magnitude that they led to the lab's permanent closure and loss of accreditation, and that the senior DNA analysts—including those involved in Mr. Escobar's case—were subsequently deemed untrainable and relegated to administrative positions. Based on these facts alone, if Mr. Escobar's case were to be tried today, this Court finds that the DNA results produced by the APD DNA lab would be inadmissible under *Daubert v. Merrell Dow*, 509 U.S. 579 (1993); *Kelly v. State*, 824 S.W.3d 568, 573 (Tex. Crim. App. 1992) and the relevant Texas statutes concerning the admissibility of forensic evidence.[19]

196. The court finds that the relevant scientific community, law enforcement, the judiciary and the governmental entities responsible for the funding and oversight of the APD DNA lab came to the conclusion that the deficiencies of the lab's operation were systemic, long-term and ongoing; that therefore the DNA testing done by the lab was unreliable.

197. The Court finds it particularly compelling that the APD DNA lab has not been re-opened. The Court finds this reflects the consensus of the stakeholders that the problems with the DNA lab were so severe and pervasive that it could not be re-constituted.

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[18] *See* App2X 192, Attachment A (February 12, 2018 email from Diana Morales to Dana Kadavy, indicating that the DA's Office had requested information regarding her serology training in relation to the "appeal" in "the Escobar case"); State's Answer of April 16, 2018 at 95 note 96 ("The Travis County District Attorney's Office now amends its position on sponsoring Ms. Morales as an expert witness on serology because there is no reasonable basis upon which to conclude that her serology work has been anything other than consistently reliable and dependable." See SW2X 40 (Diana Morales' DPS remedial serology training notebook).").

[19] *See*, *e.g.*, Tex. Code Crim. Proc. art. 38.01, Sec. 4-a, effective January 1, 2019 ("A person may not act or offer to act as a forensic analyst unless the person holds a forensic analyst license.").

198. Accordingly, the Court finds that the evidence concerning APD's significant quality issues undermines the reliability of all DNA results generated by the APD DNA lab in this case.

b. The specific issues identified with regard to APD's handling and testing of the DNA evidence in Mr. Escobar's case further undermine the reliability of the DNA results in this case

199. While the Court finds that the issues uncovered by the TFSC audit, the Quattrone Center, and Professor Inman call into question all of the work of the APD DNA lab, the Court also finds that the DNA results in Mr. Escobar's case are particularly untrustworthy. As detailed above, the specific DNA analysts who handled the evidence in this case had multiple contamination incidents that were met with inadequate responses by lab leadership, and they continued to experience the same types of errors over and over again, demonstrating an inability to learn from their mistakes. Their behavior was so concerning that they were dropped from DPS's remedial training program.

200. Additionally, Professor Inman identified multiple points in the process that could have impacted the integrity of the physical evidence in this case—prior to the DNA testing and analysis. These include the handling of the evidence by at least two Crime Scene Section employees with a documented history of violating important evidence handling protocols, the storage of bloody items from the crime scene in the same drying room as items collected from Mr. Escobar's mother's house, subsequent handling of the evidence in a manner that created a risk of cross-contamination between evidence collected from three different locations, and incomplete and inconsistent documentation regarding how the evidence was packaged and stored.

201. Records also indicate that the seals on multiple evidence packages may have been compromised, further increasing the risk of error and diminishing confidence in the overall results. For example, on June 20, 2009, before screening the Nautica shirt (APD Item 78) for the presence of DNA, Ms. Morales noted that the seal of the evidence package was "coming undone." App2X 6 (excerpts from APD serology and DNA testing materials) at 1. Ms. Morris described a similar issue in her lab notes regarding the carpet cutting (APD Item 44), writing: "Seal appears to be coming apart. Re-sealed myself." *Id.* at 2. Mr. Morris claimed in an affidavit she submitted for the State that the seal coming apart was not an issue. SW2X 10 (Affidavit of Elizabeth Morris) at 2. Given her track record of balking at this type of quality assurance issue, this Court finds her post-hoc explanation not credible. App2X 195 ¶ 75 and Attachment P; App2X 56. This Court also finds that these circumstances increase the risk of contamination that could have occurred prior to DNA testing, and introduce even more uncertainty into the final results. App2X 10 ¶ 19; App2X 95 ¶ 22.

202. Like Ms. Morales had improperly done in the Tyrone Robinson case, Ms. Morris tested several crime scene samples, including high-quantity DNA swabs from the victim's fingernail clippings (Items 105.1 and 106.1), the baby lotion bottle (Item 6.1), and the

victim's front door (Items 17.1, 17.2, and 17.3), at the same time as low-quantity DNA samples from the Nautica shirt (78.2) and the Lee jeans (86.1). App2X 6 at 7. In doing so, Ms. Morris violated best practices—established since at least the mid-1990s—dictating that crime scene samples should not be placed next to person-of-interest samples. 20 EH2RR 146. Because the fingernail samples contained over one thousand times more DNA than the Nautica shirt sample, the risk of carryover contamination increased, as occurred in the Tyrone Robinson case. App2X 5-6; App2X 10 ¶ 18.

203. Dr. Budowle's review of the DNA testing in Mr. Escobar's case does not overcome the concerns discussed above because he only reviewed the testing data. 21 EH2RR 193-194. Dr. Budowle also acknowledged that simply looking at the reagent blanks for contamination "may not tell you what happens on a specific sample to sample." 21 EH2RR 144. He testified that you can gather information to help "refute the potential of contamination, but . . . you don't physically see it." *Id.* at 145. Dr. Budowle also acknowledged that he did not review APD's evidence handling practices, could not say how the DNA profiles actually got on the samples, and couldn't answer "one way or the other" if "something happened beforehand." *Id*. at 194-196.

204. Accordingly, this Court finds that specific issues identified with respect to the manner in which the evidence in Mr. Escobar's case was collected, stored, and handled at various stages of the process provide further reason to question the overall reliability of the DNA results in this case.

c. Because of the downstream effects of APD's evidence handling issues, Fairfax's DNA results for items handled by APD have diminished reliability

205. The Court further finds that APD's failure to handle evidence in a manner that would consistently preserve its integrity has serious implications for the reliability of the testing conducted by Fairfax. Because APD's Forensic Science Division initially collected, packaged and stored all of the evidence at issue in this case, Fairfax's DNA testing results, like those generated by the APD DNA lab, have diminished reliability. 20 EH2RR 156; App2X 10, ¶ 19.

206. Specifically, APD collected and conducted serology and initial DNA testing on the evidentiary samples from the Polo shoes, Nautica Shirt, Lee jeans, and the doorknob. 20 EH2RR 152. Dr. Krane testified that because the Fairfax analysis occurred "downstream" from APD's work on these samples, "just as with wastewater treatment plant in a river, for instance, if we have contamination taking place upstream, it has the potential to compromise quality downstream." 20 EH2RR 153. Thus, APD's "handling of the samples before they came to Fairfax could only cause a reasonable person to have less confidence in the Fairfax results than they would have had if that had not been the case." *Id.* at 156.

207. Even the samples that were not initially tested by the APD DNA lab—namely the Mazda car samples—were initially collected, processed, and stored by APD prior to being sent to Fairfax for analysis, and therefore, suffer from the same reliability concerns.

Because the quality issues were not limited to the APD DNA lab but were emblematic of the entire Forensic Science Division, *see* App2X 195, the Mazda samples, like the other samples that passed through APD, have no guarantee of reliability.

208. Further, the Mitotyping review of the Fairfax results indicates that the Fairfax work was not entirely reliable. *See supra*.

2. The new scientific evidence concerning developments in DNA mixture interpretation contradicts the trial evidence regarding at least 7 DNA samples

a. The Mazda car samples—the only samples that were not previously tested by the APD DNA lab—are now considered inconclusive

209. The Court finds that in light of the developments in DNA mixture interpretation that have occurred since Mr. Escobar's trial, which include increased understanding about the dangers of subjective interpretation methods, the Mazda samples—Items 7 and 8—should be deemed uninterpretable and inconclusive. Dr. Krane's testimony on this matter is credible, persuasive, and supported by the relevant scientific literature as well as the various guidelines and standard setting documents cited above.

210. The Court finds there is no objective method for determining the number of contributors and major/minor contributions to these samples, especially given the concerns regarding degradation, allelic dropout, allele stacking, saturation, and the error rates associated with underestimating the number of contributors. 20 EH2RR 120-121, 166-167. The Court further finds it significant that Ms. Roe was exposed to task-irrelevant information about the prosecution's theory that Mr. Escobar drove the Mazda "from the crime scene." Exposure to such information has been empirically proven to bias examiners. App2X 88 at 76-77. The Court is also concerned with the inability to review Fairfax's validation studies, which are essential to determining whether a lab's practices are scientifically supportable and reliable.[20] 20 EH2RR 41-42.

211. To refute Dr. Krane's testimony regarding Fairfax Items 7 and 8, the State asked Dr. Budowle to evaluate the electropherograms for these items at the evidentiary hearing. 20 EH2RR 180. Dr. Budowle had not seen the electropherograms for these items prior to the hearing. 21 EH2RR 203. The State presented no evidence that Dr. Budowle saw any of the DNA case file for Items 7 and 8 at *any* time. Dr. Budowle disagreed with Dr. Krane's conclusions that Items 7 and 8 are uninterpretable and testified that he would pull out and run statistics on what he believed to be the major contributor to these profiles. 21 EH2RR 77-78. However, Dr. Budowle expressly acknowledged that "reasonable people could disagree" about the interpretations, *id.* at 92, and that "anything is possible," *id.* at 211, but he was providing what he believed to be "the best plausible explanation." *Id.* at 77.

[20] HNL's five-year documentation retention policy raises further questions about whether Fairfax, Mitotyping, and their parent company HNL adequately understand their disclosure obligations when performing casework for criminal cases.

212. Dr. Budowle admitted he did not have a "good validation study" to support his interpretation methods, while at the same time acknowledging it is critical to look at a lab's validations, especially if you want to "push the data." 21 EH2RR 79, 215-216. Dr. Budowle also agreed with Dr. Krane and Ms. Roe that Item 8 is "at least a three-person mixture," 21 EH2RR 85. The Court notes that, Mitotyping's protocols indicate that mixtures of this type should not be interpreted. In short, Dr. Budowle's interpretations of Items 7 and 8 were not based on any scientifically validated methods but appear to be based solely on his own subjective perceptions about what he believed was most "plausible." The Court thus finds Dr. Budowle's opinions regarding Items 7 and 8 are of limited utility.[21]

b. The Mitotyping report establishes that at least five of the DNA samples tested at Fairfax are now considered inconclusive

213. The Court finds that five DNA samples tested by Fairfax are now considered inconclusive. The Mitotyping report and the affidavit of Ross Kirkendoll unequivocally establish that the sample from the doorknob lock (APD Item 17.3/Fairfax Item 1.2), one sample from the left Polo shoe (APD Item 84.16/Fairfax Item 2.2.5), and all three samples from the Nautica shirt (APD Item 78.2/Fairfax Item 1.1, APD Item 78.4/Fairfax Item 2.1.3, and Fairfax Item 3.4) cannot be reliably interpreted in accordance with currently accepted interpretation methods. App2X 11 at 6, 8, 9; App2X 127 ¶ 7.

c. The Dr. Budowle's case review establishes that the Nautica shirt sample is inconclusive and that APD engaged in suspect-driven practices in Mr. Escobar's case

214. Notwithstanding the reliability issues impacting all of the DNA evidence connected to APD, the Court further finds that APD's results for the Nautica shirt sample—which the State previously argued contained the victim's DNA—should be deemed inconclusive. SW2X 4, Attachment B at 2. Additionally, Dr. Budowle's case report and testimony support the conclusion that APD engaged in suspect-driven methods while interpreting the DNA results in this case. *Id*.

I. Had the new scientific evidence been available at trial, the State's case against Mr. Escobar would have been substantially weakened

1. Had the new scientific evidence been available at trial, all of the DNA evidence relied on by the State would have likely been excluded or subject to a strong reliability challenge

[21] If Mr. Escobar's case were being retried today, Dr. Budowle's methods for interpreting Items 7 and 8 would not satisfy the standards for admissibility of scientific evidence under *Daubert v. Merrell Dow*, 509 U.S. 579 (1993); *Kelly v. State*, 824 S.W.3d 568, 573 (Tex. Crim. App. 1992), because the methods are subjective and not based on any validated data. *See also* App2X 88 at 4 (explaining that "foundational validity," which corresponds to *Daubert*'s legal requirement of reliable principles and methods," requires a forensic method to be "based on empirical studies, to be *repeatable*, *reproducible*, and *accurate*[.]"); App2X 88 at 5 ("[N]either experience, nor judgment, nor good professional practices . . . can substitute for actual evidence of foundational validity and reliability.").

215. This Court previously found that in light of all the new scientific evidence regarding the issues at the APD DNA lab and Forensic Science Division, all of the DNA evidence connected to APD in this case has diminished reliability. This includes not only the DNA results generated by the APD DNA lab but also the DNA analyses conducted by Fairfax, since APD initially collected, processed and stored all of the physical evidence tested by Fairfax. The Court further finds that if the new scientific evidence had been available at trial, all of the DNA evidence would have either been excluded or, at minimum, subject to a strong reliability challenge.

216. Trial counsel Allan Williams and Steve Brittain testified via affidavit about how the new evidence concerning the APD lab would have impacted their trial strategy. App2X 201. Mr. Williams and Mr. Britain testified that "given what we now know about the closure of the APD DNA lab and the removal of Diana Morales and Elizabeth Morris from all lab work, we would have moved to preclude all DNA evidence produced by the APD lab through all available legal means." App2X 201 ¶6. The Court finds that such a strategy would have been fruitful and that there is a strong likelihood that all of the DNA results generated by the APD DNA lab would have been excluded.[22]

217. The State argued that several samples tested by the APD DNA lab could still be relied on, and offered Dr. Budowle's reinterpretations of those samples.[23] Dr. Budowle's expertise in the field of DNA analysis cannot be denied. However, the scope of his review, per the State's referral, was limited. Therefore, Dr. Budowle's review of the testing in Mr. Escobar's case did not account for any of the factors that could have compromised the evidence prior to DNA testing. When considering all of the issues uncovered by the TFSC audit, the Quattrone Center, and Professor Inman, simply looking at the data generated by the lab, as Dr. Budowle did here, cannot tell us whether that data can reliably be associated with the original evidence. App2X 195 ¶¶ 17, 24. Thus, Dr. Budowle's attempt to reinterpret[24] APD's DNA results does not diminish the likelihood that all of the testing conducted by the APD DNA lab in this case would have been precluded at trial.[25]

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[22] Indeed, if Mr. Escobar were being tried today, Ms. Morales and Ms. Morris would likely be prohibited from testifying and acting as "forensic analysts" pursuant to Tex. Code Crim. Proc. art. 38.01, Sec. 4-a, effective January 1, 2019.

[23] These include Stain E from the right Polo shoe (APD Items 84.5), Stain G from the right Polo shoe (Item 84.8), Stain H from the left Polo shoe (Item 84.10), Stain J from the left Polo shoe (Item 84.12), and Stain M from the left Polo shoe (Item 84.16).

[24] Moreover, as became evident during his cross-examination, Dr. Budowle's methods for interpreting the DNA mixtures in this case were not based on any validation studies, but rested primarily on his "experience." He testified, for example, that he applied a "sort of loose" stochastic threshold "somewhere in [the] range" of 300 to 400 RFUs, and that sometimes he applied it, but sometimes he didn't. 21 EH2RR 178-179. He acknowledged he did not perform any validation studies to establish this "loose" stochastic threshold. *Id.* at 180. When asked how he was able to identify the major and minor contributors to a particular sample, he testified his interpretation was the "best explanation" "based on my experience" and what he "typically" saw in other cases. Dr. Budowle's methods appear inconsistent with the standards and guidelines reflecting the scientific consensus that DNA mixture interpretation methods must be based on a lab's internal validation studies. *See* App2X 158, App2X 159, App2X 135, App2X 136. The Court previously adopted and found credible the testimony of Dr. Krane and Dr. Budowle himself that following validated procedures is absolutely essential to any forensic methodology. 20 EH2RR 41-42; 21 EH2RR 101-102. The State has failed to present any evidence or arguments as to why Dr. Budowle should be exempted from this requirement.

[25] Dr. Budowle's reinterpretations of the DNA results generated by the APD DNA lab are also irrelevant to the

218. Trial counsel also testified that "given the pervasive nature of the problems at the APD lab, we would have engaged a DNA expert to assess . . .the downstream effects of these concerns on the testing conducted by Fairfax." App2X 201 ¶ 7. The Court finds that, had all of the evidence discussed above been available, including the new information concerning the collection and storage of the physical evidence by the APD Forensic Science Division, there would have been ample grounds for challenging all of the DNA results generated by Fairfax.

219. Even if Mr. Escobar would not have succeeded in excluding the DNA results from both labs, trial counsel could have offered the newly available evidence in order to refute the DNA results, either through cross-examination of the State's witnesses or through a defense expert. App2X 201 ¶ 13. Additionally, the newly available evidence would have allowed trial counsel to mount a strong *Daubert/Kelly* challenge to the DNA mixtures that are now considered inconclusive. App2X ¶ 13. Trial counsel could have also presented the jury with evidence that both APD and Fairfax were exposed to task-irrelevant information about the crime, creating a high risk of examiner bias. *Id.* ¶ 12. This evidence would have been powerful in light of a recent study establishing that jurors find experts less credible and are less likely to convict if the experts are exposed to task-irrelevant information. *Id*. ¶ 12 and Attachment A.

220. In sum, the Court finds that had the new scientific evidence presented by Mr. Escobar in support of Claim One been available at trial, all of the DNA evidence relied on by the State at trial would have either been excluded or subjected to a strong reliability challenge.

2. DNA was the linchpin of the prosecution's case at trial

221. The Court finds that the DNA evidence was the most critical part of the prosecution's case against Mr. Escobar. Although the State argued to the jury in closing that it was necessary to view all of the evidence cumulatively as "pieces of a puzzle" because "[n]o one piece of evidence in this case is going to tell you what happened," the prosecutors repeatedly emphasized the importance of the DNA evidence throughout the trial proceedings. During jury selection, the State asked the entire jury panel to confirm that DNA "is a reliable thing," attempting to ferret out those potential jurors who thought DNA was "too mumbo jumbo." 7 RR 227-228.

222. During opening statements, the State promised the jurors that "the science of DNA does tell us who is connected to this crime." 22 RR 50, 51. The State specifically emphasized that the samples from the Polo shoes, the doorknob lock and the Mazda were "critical because they are a strong connection to the defendant and to Bianca." 22 RR 50, 51. In closing, the State stressed that the jurors were "fortunate" because so many of them indicated in their jury questionnaires that they wanted to see DNA evidence and "you got

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assessment of Mr. Escobar's claim under Article 11.073 of the Texas Code of Criminal Procedure, because the assessment focuses on what evidence *Mr. Escobar* could have presented at trial, not what the State could have presented. *See Ex parte Robbins (Robbins III)*, 560 S.W.3d 130, 149-150 (Tex. Crim. App. 2016) (Richardson, J, concurring).

that." 28 RR 26. It emphasized that the Polo shoes, Mazda samples, Nautica shirt, and doorknob lock were the "key pieces of the evidence" connecting Mr. Escobar to the crime. 28 RR at 26, 29, 32-33, 35-37. The State further argued that the "forensics alone" and the "science of all this" was sufficient in and of itself to support a guilty verdict. 28 RR 39.

223. The Court further finds that DNA evidence, and scientific evidence in general, has a powerful effect on jurors. Indeed, one of the Assistant District Attorneys who prosecuted Mr. Escobar's case testified during these writ proceedings that because of the "CSI effect," when people come from the community to serve as jurors, they expect to see scientific evidence just like they see on television. 24 EH2RR 42-43. Mr. Escobar's trial attorneys also testified that in their experience, "jurors put a lot of weight on the type of forensic evidence presented by the State at trial because it is viewed as more objective and reliable." App2X 201 ¶ 20.

224. The record from Mr. Escobar's initial writ proceedings further supports the conclusion that the DNA evidence was likely what tipped the scales in the State's favor. During an evidentiary hearing on an unrelated issue, the State asked one of the sitting jurors when he decided that Mr. Escobar was guilty. He answered: "I was sitting on the fence, if you will, as to whether he was guilty or not guilty all the way up to when the DNA evidence was submitted to the jury, and for me, that was the sealing factor." 3 EH1RR 84.

3. The remaining evidence relied on by the State was circumstantial and questionable

225. The Court finds that without the DNA evidence, the remaining evidence relied on by the State was circumstantial and weak and would not have supported a conviction for capital murder. As discussed *infra*, the other main form of "scientific" evidence—a partial, low quality latent print found at the crime scene that purportedly "matched" the joint of Mr. Escobar's left ring finger—was admitted under circumstances suggestive of suspect-driven bias and was expressed in terms that do not comply with current standards. Furthermore, as discussed in relation to Claim Six *infra*, the cell-tower evidence was also substantially incomplete and could not be used to reliably place Mr. Escobar at the crime scene. The only other forensic evidence consisted of the testimony of an APD analyst that one of Mr. Escobar's shoes had a similar tread design as an apparent shoe print left on Ms. Maldonado's carpet—a tread design shared by thousands of other shoes in the Austin area. 25 RR 49. The Court notes that shoe-print evidence, like bitemark testimony, is now considered of questionable validity.

226. The State also relied on the testimony of Mr. Escobar's ex-girlfriend Zoe Lopez, who on the day of the crime, told at least four different people that she had tried to call Mr. Escobar on his cell phone and heard what she thought was him cheating on her with another woman. 23 RR at 182; SX 173, 35 RR at 144-415. In a series of text messages, Ms. Lopez described to others what sounded like consensual sex, expressing that she was extremely upset and that it was "over" between her and Mr. Escobar. SX 173. That is, she was "a woman scorned" and had motive to fabricate or exaggerate. By the time Ms. Lopez testified at trial two years later, her account of what she heard on that phone call changed

dramatically, as she told the jury she heard "a woman screaming and screaming and screaming and screaming and just screaming." 23 RR at 76-77.

227. The State also presented evidence that on the early morning of Ms. Maldonado's murder, Mr. Escobar showed up to his mother's house and changed his clothes. The next day, she washed his clothes, and then later noticed yellow spots on them. 23 RR at 168-170. The evidence also showed that Mr. Escobar told multiple individuals that he "got jumped twice" on the night of the crime. 23 RR at 183; SX 172, 35 RR at 128. Mr. Escobar's friend Miguel Aguirre, a.k.a. "Tano", testified that he personally witnessed and broke up one of those fights. 24 RR at 172-174. The State also presented evidence that Mr. Escobar had some injuries on his body at the time of his arrest. 24 RR 109-112.

228. Without the DNA evidence, and in light of the problems with the other forensic evidence, the prosecution would have had to rely primarily on Ms. Lopez's inconsistent accounts of what she heard when she called Mr. Escobar around the time the murder occurred, as well as the evidence of his injuries and that he changed his clothes at his mother's house on the morning of the crime. The Court finds that, absent the DNA evidence, the remainder of the State's case was not highly persuasive. The role of the DNA evidence as the "sealing factor" for at least one juror demonstrates that the State would not have been able to obtain a conviction without the DNA evidence. 3 EH1RR 84.

J. CONCLUSIONS OF LAW REGARDING CLAIMS ONE & TWO

1. Legal requirements for a claim for relief under Article 11.073 of the Texas Code of Criminal Procedure

229. Article 11.073 provides that a court may grant a convicted person relief if:

> (1) the convicted person files an application, in the manner provided by Article 11.07, 11.071, or 11.072, containing specific facts indicating that:
>
> (A) relevant scientific evidence is currently available and was not available at the time of the convicted person's trial because the evidence was not ascertainable through the exercise of reasonable diligence by the convicted person before the date of or during the convicted person's trial; and
>
> (B) scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date of the application; and
>
> (2) the court makes the findings described by Subdivisions (1)(A) and (B) and also finds that, had the scientific evidence been presented at trial, on the preponderance of the evidence the person would not have been convicted.

Tex. Code Crim. Proc. art. 11.073(b).

230. Subsection (d) further provides:

> In making a finding as to whether relevant scientific evidence was not ascertainable through the exercise of reasonable diligence on or before a specific date, the court shall consider whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based has changed since:
>
> (1) the applicable trial date or dates, for a determination made with respect to an original application; or
> (2) the date on which the original application or a previously considered application, as applicable, was filed, for a determination made with respect to a subsequent application.

2. Mr. Escobar has presented relevant scientific evidence that was not ascertainable through the exercise of reasonable diligence before or during his 2011 capital murder trial

231. Mr. Escobar has presented relevant scientific evidence concerning significant quality issues at the APD DNA lab and developments in DNA mixture interpretation. Both categories of evidence fall within the scope of Article 11.073 and were not available before or during Mr. Escobar's trial.

232. In determining whether the relevant scientific evidence was not reasonably ascertainable before or during Mr. Escobar's trial, the Court must consider "whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based" has changed. Tex. Code Crim. Proc. art. 11.073(d). "Scientific knowledge" includes:

> Knowledge that is grounded on scientific methods that have been supported by adequate validation. Four primary factors are used to determine whether evidence amounts to scientific knowledge: (1) whether it has been tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) the degree of acceptance within the scientific community.

Robbins II, 478 S.W.3d at 691-692 (quoting BLACK'S LAW DICTIONARY 1004 (10th ed.2014)). "Scientific method" means "[t]he process of generating hypotheses and testing them through experimentation, publication, and republication." *Id.* at 691 (quoting BLACK'S LAW DICTIONARY 1547 (10th ed.2014)).

233. Article 11.073 encompasses claims based on both "bad science" and "bad scientists." "'Bad science' and 'bad scientists' are inseparable. A scientist may not intend to present bad science, nor must that scientist be a bad scientist in every situation. . . . The result of inexperience or outdated knowledge may be testimony that may rightfully be called bad science, even if not intentionally so, and that testimony may persuade a jury to convict when it should not." *Robbins II*, 478 S.W.3d at 693 (Johnson, J., concurring). As such, the legislature "enact[ed] Article 11.073 without any express limitation on what constitutes 'scientific knowledge' [.]" *Robbins III*, 560 S.W.3d at 161 (Newell, J., concurring).[26]

234. The evidence concerning the APD DNA lab crisis is directly relevant to the scientific validity and reliability of the DNA testing and analyses generated by the lab and its personnel. The evidence therefore relates to both "bad science" and "bad scientists," and concerns changes in scientific knowledge, scientific methods, as well as the scientific knowledge of the particular DNA analysts that testified at trial.[27] The evidence concerning developments in DNA mixture interpretation also relates to changes in scientific knowledge, scientific methods, and to the scientific knowledge of the particular DNA analysts involved in this case.

235. Additionally, both categories of evidence were "not ascertainable through the exercise of reasonable diligence on or before" Mr. Escobar's capital murder trial. Tex. Code Crim. Proc. art. 11.073(d). The Court previously found that the evidence concerning the APD DNA lab's problems did not become available to Mr. Escobar until 2016, after the publication TFSC audit. Accordingly, considering all the factual findings previously made, the Court concludes that the evidence concerning the APD DNA lab was not ascertainable through the exercise of reasonable diligence on or before Mr. Escobar's trial in 2011.

236. Moreover, the Court previously found that the scientific developments regarding DNA mixture interpretation did not occur until several years after Mr. Escobar's trial, until August 2015 at the very earliest. Accordingly, considering the foregoing factual findings, the Court concludes that the evidence concerning the developments in DNA mixture

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[26] *See also Robbins II*, 478 S.W.3d at 706 ("Regardless of whether a conviction is based on an unreliable field of science *or* unreliable scientific testimony, the result is the same: an unreliable verdict that cannot stand the test of time. It is built upon the shifting sands of 'junk' science or a 'junk' scientist, and it is the purpose of Article 11.073 to provide a statutory mechanism for relief and a retrial based upon 'good' science and 'good' scientific testimony.") (Cochran, J., concurring).

[27] Representatives from the Travis County DA's Office have publicly acknowledged that the APD lab's shortcomings should be treated as "new scientific evidence" in post-conviction litigation. See App2X 16 at 5. In its Answer, the State argued this acknowledgment "was made in the context of a budgetary/funding request and tailored to an audience that had no need for a nuanced discussion about the extent to which any possible issues arising from the closure of the APD DNA Lab met the statutory definition of 'new scientific evidence' under Article 11.073." *State's Answer* at 88. The State further disputes that this public statement should be construed as "a concession in any particular criminal case that any evidence relating to the deficiencies at that particular lab will rise to the level of new scientific evidence." The Court finds that Mr. Escobar's evidence relating to the APD DNA lab crisis falls within the ambit of Article 11.073 regardless of whether the State has made any concession on this issue. The Travis County DA's inconsistent statements and messages conveyed in relation to the APD DNA lab closure, as well as their lack of transparency in relation to its *Brady* obligations give cause for concern, as previously discussed.

interpretation was not ascertainable through the exercise of reasonable diligence on or before Mr. Escobar's trial in 2011.

3. The scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date of the application

237. The Court finds that the evidence concerning the APD DNA lab crisis and the developments in DNA mixture interpretation would be admissible at a trial held on the date Mr. Escobar filed the instant application, February 10, 2017.[28] Specifically, the evidence would be admissible to support a challenge to the reliability and admissibility of the DNA results generated by both APD and Fairfax under Texas Rule of Evidence 702, *Daubert v. Merrell Dow*, 509 U.S. 579 (1993); *Kelly v. State*, 824 S.W.3d 568, 573 (Tex. Crim. App. 1992).[29]

238. Rule 702 requires the trial judge to determine whether: "(1) the witness qualifies as an expert by reason of his knowledge, skill, experience, training, or education; (2) the subject matter of the testimony is an appropriate one for expert testimony; and (3) admitting the expert testimony will actually assist the fact-finder in deciding the case." *Vela v. State*, 209 S.W.3d 128, 131 (Tex. Crim. App. 2006). "These conditions are commonly referred to as (1) qualification, (2) reliability, and (3) relevance." "Qualification is distinct from reliability and relevance and, therefore, should be evaluated independently." Reliability is assessed based on the factors identified in *Kelly*: (1) the underlying scientific theory must be valid, (2) the technique applying the theory must be valid, and (3) the technique must have been properly applied on the occasion in question. *Kelly*, 824 S.W.2d at 573.

239. The evidence presented by Mr. Escobar in support of Claim One would be directly relevant and admissible at a retrial to challenge the admissibility of the State's DNA evidence pursuant to the above standards. The evidence concerning the APD DNA lab crisis would be relevant both to challenging the qualifications of the particular DNA analysts who testified at trial—Diana Morales and Elizabeth Morris—as well as the reliability of the DNA results generated by APD. As to reliability, the new evidence implicates all three prongs of the *Kelly* factors.

240. The evidence relating to developments in DNA mixture interpretation would likewise be admissible for this purpose—as the evidence indicates that the underlying mixture interpretation methods applied by both APD and Fairfax were not reliable and were not reliably applied in this case.

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[28] The Court previously found the TFSC report admissible notwithstanding Tex. Code of Crim. Proc. art. 38.01, Section 11, because Mr. Escobar's constitutional rights to confront and cross-examine witnesses and to due process override the statutory prohibition on the use of the TFSC report. This is especially true in a capital case, in which "factfinding procedures [must] aspire to a heightened standard of reliability." *Ford v. Wainwright*, 477 U.S. 399, 411 (1986) Even if a trial court were to determine that the TFSC was inadmissible, the information contained within could be admitted through the testimony of witnesses.

[29] And if the trial occurred today, additional challenges could be raised pursuant to Tex. Code Crim. Proc. art. 38.01, Sec. 4-a, effective January 1, 2019.

241. The Court further finds that the new evidence would also be admissible on cross-examination of the State's witnesses or through Mr. Escobar's own expert witness.

4. Had the scientific evidence been presented at trial, on the preponderance of the evidence Mr. Escobar would not have been convicted

242. In making the inquiry under Tex. Code Crim. Proc. art. 11.073(b)(2), this Court may consider the existence of other evidence incriminating the applicant and the extent to which the State emphasized the evidence now called into question at trial. *Robbins II*, 478 S.W.3d 692 (finding 11.073(b)(2) satisfied where the medical examiner's discredited testimony was the only evidence that conclusively established cause of death and the State "also emphasized her testimony in its closing statement"); *Ex parte Steven Mark Chaney*, 563 S.W.3d 239 (Tex. Crim. App. 2018) (relief granted under Art. 11.073 based on invalidated bitemark evidence where the State's case would have been "incredibly weakened" had the new scientific evidence been presented at trial, where the prosecution had emphasized the bitemark evidence in its closing argument, and where, during a motion for new trial hearing, one juror testified that the bitemark evidence was "what did it for her"). This Court may also consider any other evidence in the record indicating that the jurors were particularly persuaded by the evidence in question. *Chaney*, 563 S.W.3d at 263.

243. The Court should consider the new habeas evidence "in light of the totality of the record," to assess the impact it would have had at trial. *See*, *e.g.*, *Ex parte De La Cruz*, 466 S.W.3d 855, 871 (Tex. Crim. App. 2015) (materiality of false evidence claim should be based on the totality of the record). Accordingly, to the extent Mr. Escobar has challenged the reliability and credibility of other trial evidence, the Court may also consider the evidence presented in relation to those claims. *See Ex parte Kussmaul et al*, 548 S.W.3d 606, 623-27 (Tex. Crim. App. 2018) (relief granted under Art. 11.073 based on new DNA testing, where applicant also presented evidence challenging the reliability of the co-defendants' confessions); *Chaney*, 563 S.W.3d at 274 (assessing materiality of *Brady* claim cumulatively with evidence presented in support of Art. 11.073 claim).

244. The Court may also consider the impact that the new scientific evidence would have had on defense counsel's strategy at trial. *See Kussmaul et al*, 548 S.W.3d at 623-27 (considering the testimony of trial counsel that had he known about the exculpatory DNA results, he would not have advised his client to take a guilty plea). *See also Thomas v. State*, 841 S.W.2d 399, 406 (Tex. Crim. App. 1992) (considering, in deciding materiality of *Brady* claim, how the absence of certain evidence might have "affected the preparation and presentation" of the defense case); *Ex parte Mares*, No. 76,219, 2010 WL 2006771 (Tex. Crim. App. May 19, 2010) (not designated for publication) at *8 (deciding whether *Brady* violation was material by considering, *inter alia*, whether "applicant would have adopted a different defense strategy" if the suppressed evidence had been disclosed).

245. Finally, while the Court's assessment must be based on the totality of the record, it necessarily focuses on the new evidence that *Mr. Escobar* could have presented at trial, not on what other evidence the State could develop or present at a retrial. This is because Article 11.073 only applies to evidence that "was not available to be offered *by a convicted*

person at the convicted person's trial" or that "contradicts scientific evidence relied on by the state at trial." Tex. Code Crim. Proc. art. 11.073(a). Thus, "[t]he test for materiality under Article 11.073(b)(2) does not factor in what the State could have presented." *Robbins III*, 560 S.W.3d at 149-150 (Richardson, J, concurring).[30] "The test under the statute is whether, had the scientific evidence . . . been presented *at trial,* on the preponderance of the evidence Applicant would not have been convicted." *Id*.

246. The standard under Article 11(b)(2) is far less onerous than the clear and convincing standard applicable to actual innocence claims. Thus, the standard may be satisfied even where the record contains some evidence that the jurors could view as incriminatory. *See Kussmaul et al*, 548 S.W.3d at 641 (relief granted under Art. 11.073 but not on actual innocence grounds, where other incriminating evidence included fiber comparison evidence, firearms and toolmark identification evidence, eyewitness testimony that the co-defendants were seen with the victims on the night of the crime, and the co-defendant's confessions which were of questionable reliability but could not be "completely discredit[ed]").

247. As detailed above, the Court finds that in light of the problems at the APD DNA lab and the developments in DNA mixture interpretation, *all* of the DNA evidence relied on by the State would have either been excluded or significantly discredited through cross-examination of the State's witnesses or through the testimony of a defense expert. This would have significantly changed the evidentiary picture presented to the jury.

248. DNA was the linchpin of the prosecution's case. Indeed, the Court need not speculate about the impact the DNA evidence had on the jury because at last one juror has confirmed he was "on the fence" as to Mr. Escobar's guilt until the DNA evidence was presented. EH1RR 84. The Court has also found that the remaining evidence was circumstantial and weak.

249. Accordingly, based on the totality of the record and the foregoing factual findings, the Court finds, by a preponderance of the evidence, that had the new scientific evidence been available at trial, Mr. Escobar would not have been convicted. Therefore, this Court recommends granting Claim One of Mr. Escobar's Subsequent Application.

5. The State's use of false, misleading, and unreliable DNA evidence violated Mr. Escobar's constitutional rights to due process.

250. The State's use of false evidence to obtain a conviction violates the due process clause of the Fourteenth Amendment. *Napue v. Illinois*, 360 U.S. 264, 269 (1959); *Giglio v. United States*, 405 U.S. 150, 153-54 (1972). In *Ex parte Chabot,* the CCA held that a conviction secured by false evidence violates due process, even if the State neither knew nor should have known that the evidence was false. *Ex parte Chavez*, 371 S.W.3d 200, 204 (Tex. Crim. App. 2012) (citing *Ex parte Chabot*, 300 S.W.3d 768, 772 (Tex. Crim.

[30] For this reason, and for the other reasons already discussed, the Court finds that Dr. Budowle's opinion that some of the DNA results generated by APD and Fairfax can be reinterpreted and relied on is not relevant to the inquiry under Article 11.073(b)(2).

App. 2009). To prevail on a *Chabot* claim, the applicant has the burden of proving by a preponderance of the evidence that: "(1) false evidence was presented at his trial and (2) the false evidence was material to the jury's verdict of guilt." *Ex parte De La Cruz*, 466 S.W.3d 855, 866 (Tex. Crim. App. 2015). "[A] false statement is material only if there is a reasonable likelihood that the false testimony affected the judgment of the jury." *Ex Parte Weinstein*, 421 S.W.3d 656, 665 (Tex. Crim. App. 2014).

251. In determining whether evidence is false, "the relevant question is whether the testimony, taken as a whole, gives the jury a false impression." *De La Cruz*, 466 S.W.3d at 866. Testimony "need not be perjured to constitute a due process violation; rather it is sufficient that the testimony was false." *Chavez*, 371 S.W.3d at 208. Ultimately, the rationale underlying *Chabot* claims is to ensure that convictions and sentences rest on truthful testimony. *De La Cruz*, 466 S.W.3d at 866 (internal quotation marks and citations omitted).

252. Testimony that is factually accurate on its face but creates a false impression by omitting critical factors can violate due process. The CCA has observed that false impression testimony can be caused under circumstances where "the witness omitted or glossed over pertinent facts." *Ex parte Robbins*, 360 S.W.3d 446, 462 (Tex. Crim.App.2011). *See, e.g., Ex parte Ghahremani*, 332 S.W.3d 470, 477 (Tex. Crim. App. 2011) (testimony from parents of a sexual assault victim describing psychological difficulties she experienced after the attack created a false impression because it omitted information about other intervening factors that could have also impacted the victim's psychological condition); *see also Alcorta v. Texas*, 355 U.S. 28 (1957) (where defendant claimed he murdered his wife in sudden passion when he found a man kissing her, the testimony of the only eyewitness created a false impression when the eyewitness omitted the fact that he was the wife's paramour).

253. "[T]he introduction of faulty evidence violates a petitioner's due process right to a fundamentally fair trial." *Gimenez v. Ochoa*, 821 F.3d 1136, 1143 (9th Cir. 2016) (citing *Estelle v. McGuire*, 502 U.S. 62, 68-70 (1991); *Lee v. Houtzdale SCI,* 798 F.3d 159, 162 (3d Cir.2015); *Dowling v. United States*, 493 U.S. 342, 352-53 (1990); *McKinney v. Rees*, 993 F.2d 1378, 1385 (9th Cir. 1993); *Kealohapauole v. Shimoda*, 800 F.2d 1463, 1465-66 (9th Cir. 1986). Relief is available if reliance on flawed forensic evidence was "so extremely unfair that it[ ] ... violate[d] fundamental conceptions of justice." *Gimenez*, 821 F.3d at 1145 (quoting *Dowling,* 493 U.S. at 352 (internal quotation marks omitted)).

254. The newly available scientific evidence regarding the APD lab clearly demonstrated that Dr. Holland's and Ms. Morris's testimony about the significance of the accreditation system gave the jury a false impression that because the APD lab was accredited, it followed protocols based on sound scientific principles, and had checks and balances in place to ensure scientifically valid and reliable results. Likewise, the new scientific evidence reveals that Ms. Roe's and Ms. Morris's testimony that the DNA results for the Nautica shirt, the Mazda samples, the doorknob lock and one shoe stain connected Mr. Escobar to the crime scene was false. Whether or not these witnesses or the State knew this

testimony was false is irrelevant. Chavez, 371 S.W.3d at 208. What matters is that Mr. Escobar was convicted based on testimony that was inaccurate and untrue.

255. . Because the jury was made to believe that the DNA evidence from the APD DNA lab was "based on sound scientific principles" and that the lab had the types of "checks and balances" one would expect at a doctor's office, the jurors had no reason to question the reliability of the State's most important evidence. Had the jurors been aware that, in fact, the "checks and balances" at APD had utterly failed, and that the lab employed unscientific practices, and was riddled with significant quality issues that had never before been identified by auditors, the jurors would have viewed the DNA evidence with greater skepticism. Furthermore, had the jury been aware that seven of the DNA samples relied on by the State were inconclusive rather than incriminating, the jury would have had further reason to question the evidence the State characterized as the most important piece of the evidentiary puzzle.

256. Having found that the relevant scientific community, law enforcement, the judiciary and the governmental entities responsible for funding and oversight of the APD DNA lab reached the conclusion that the testing done by the lab was unreliable, the Court concludes it would be shocking to the conscience to uphold the conviction of Mr. Escobar. Mr. Escobar's trial was fundamentally unfair.

257. Based on the foregoing findings of fact, the Court finds that there is a "reasonable likelihood" that the false DNA testimony affected the judgment of the jury. *Chavez*, 371 S.W.3d at 207. The State's use of unreliable, false, or misleading DNA evidence to secure Mr. Escobar's conviction violated fundamental concepts of justice. DNA was the crux of the prosecution's case, and the remaining evidence was either weak and circumstantial, or has now been shown to be scientifically questionable. Accordingly, the use of flawed DNA evidence violated Mr. Escobar's rights to due process as guaranteed by the United States and Texas Constitutions, and this Court recommends that Mr. Escobar's conviction be reversed.

III. CLAIM THREE: THE STATE'S FAILURE TO DISCLOSE MATERIAL IMPEACHMENT EVIDENCE IN VIOLATION OF *BRADY V. MARYLAND*

258. In his third claim, Applicant asserts, "[t]he State violated Mr. Escobar's right to due process by failing to disclose materials that significantly undermined the reliability and validity of the DNA evidence, in violation of *Brady v. Maryland*, 373 U.S. 83 (1963)." *Application* at 127.

259. Escobar claims *Brady* violations regarding a number of discrete matters including: failure to disclose information regarding prior contamination events; failure to disclose a whistleblower report by a lab employee; failure to disclose recalculated DNA probabilities; failure to disclose DNA analysis conducted by DPS; failure to disclose a freezer malfunction in the APD lab; failure to disclose a compromised seal on an evidence bag; failure to disclose certain chain-of-custody documents; failure to disclose information about an APD analyst; failure to disclose a report regarding a reevaluation of

APD DNA results; and failure to disclosure a report concerning the APD lab. Each allegation is analyzed separately.

260. Under *Brady v. Maryland*, 373 U.S. 83 (1963), the State has an affirmative duty to disclose to the defense evidence that is both favorable to the defendant and material. *See Brady*, 373 U.S. at 87; *Ex parte Miles*, 359 S.W.3d 647, 665 (Tex. 153 Crim. App. 2012). Failure to disclose such evidence violates due process, irrespective of the good faith or bad faith of the State. *Id*.

261. There are, however, significant exceptions to that general rule. Under *Brady*, "[a] prosecutor does not have a duty to turn over evidence that would be inadmissible at trial." *Ex parte Kimes*, 872 S.W.2d 700, 703 (Tex. Crim. App. 1993). There may be an exception to this exception for evidence which, though inadmissible on its own, may reasonably lead to other admissible evidence. Nor does the State have any duty, under Brady, to disclose evidence that is already known or available to the defense. *Hayes v. State*, 85 S.W.3d 809, 815 (Tex. Crim. App. 2002); *Jackson v. State*, 552 S.W.2d 798, 804 (Tex. Crim. App. 1976). "[A] *Brady* violation does not arise if the defendant, using reasonable diligence, could have obtained the information." *Westley v. Johnson*, 83 F.3d 714, 725-26 (5th Cir. 1996).

262. For purposes of *Brady*, "[f]avorable evidence is any evidence that, if disclosed and used effectively, may make a difference between conviction and acquittal and includes both exculpatory and impeachment evidence. Exculpatory evidence may justify, excuse, or clear the defendant from fault, while impeachment evidence is that which disputes or contradicts other evidence." *Harm v. State*, 183 S.W.3d 403, 408 (Tex. Crim. App. 2006) (citing *Thomas v. State*, 841 S.W.2d 399, 404 (Tex. Crim. App. 1992); *see United States v. Bagley*, 473 U.S. 667, 676 (1985).

263. Under *Brady*, nondisclosure of favorable evidence violates due process only if it is "material" to guilt or punishment. "The mere possibility that an item of undisclosed information might have helped the defense, or might have affected the outcome of the trial, does not establish 'materiality' in the constitutional sense." *United States v. Agurs*, 427 U.S. 97, 109-10 (1976) (emphasis added); *see Pena v. State*, 353 S.W.3d 797, 812 (Tex. Crim. App. 2011).

264. "Evidence is material only if there is a reasonable probability that, had the evidence been disclosed to the defense, the result of the proceeding would have been different." *Bagley*, 473 U.S. 667 at 682; *see Ex parte Adams*, 768 S.W.2d 281, 291 (Tex. Crim. App. 1989). "The question is not whether the defendant would more likely than not have received a different verdict with the evidence, but whether in its absence he received a fair trial, understood as a trial resulting in a verdict worthy of confidence." *Kyles v. Whitley*, 514 U.S. 419, 434 (1995). Thus, a "reasonable probability" of a different result is shown when the State's failure to produce the evidence at issue "undermines confidence in the outcome of the trial." *Bagley*, 473 U.S. at 678.

265. Materiality of the undisclosed evidence must be considered collectively, not item

by item. *Kyles*, 514 U.S. at 436. Nevertheless, as the Supreme Court pointed out in *Kyles*, "We evaluate the tendency and force of the undisclosed evidence item by item; there is no other way. We evaluate its cumulative effect for purposes of materiality separately…" *Kyles*, 514 U.S. 419, 436 n.10; *see Ex parte Carty*, No. WR-61,055-02, 2018 Tex. Crim. App. LEXIS 53, at *78 (Crim. App. Feb. 7, 2018) (Richardson, J., concurring) (designated for publication).

A. *Brady* Allegations Regarding Extraneous Contamination Events

266. This Court finds that until its closure in 2016, the APD DNA lab was as a division of the Austin Police Department, a law enforcement agency. *See* App2X 195, Attachment J at 76. The APD DNA lab was in possession of contamination logs, corrective action reports, and internal memos that were available at the time of Mr. Escobar's trial. *See*, *e.g.*, App2X 22 (post-trial discovery receipt listing internal materials from the APD NDA lab); App2X 192 (Affidavit of Efrain Perez) ¶ 9. Those contamination logs, corrective action reports, and internal memos reveal incidents of contamination that occurred within the APD DNA lab, including several incidents involving DNA analysts Elizabeth Morris and Diana Morales. *Id.*

267. This Court finds that the contamination logs and memos document a total of eleven contamination incidents between 2005 and the time of Mr. Escobar's trial in May 2011. These include seven separate incidents involving Ms. Morris, and three incidents involving Ms. Morales. App2X 8 (Excerpts from APD Lab Contamination Logs and Corrective Action Reports) at 1-15. Corrective Action Reports ("CARs") from 2009 also document two additional instances of contamination, in which the DNA profiles of APD employees were discovered in evidentiary DNA samples. App2X 8 at 16-19.

268. The Court finds this evidence to be favorable, clearly within the ambit of *Brady*.

269. The Court finds the State failed to give adequate notice of this *Brady* material.

270. The Court finds the evidence would have been favorable to the defense. The Court finds the evidence would have been admissible. However, the Court finds this evidence, standing alone, does not create a reasonable probability that, had the evidence been disclosed, the outcome would have been different.

B. *Brady* Allegations Regarding the Cecily Hamilton Complaint

271. Escobar asserts the State failed to disclose a "whistleblower" complaint made by an APD DNA employee relating to employee performance and contamination issues at the lab.

272. This Court finds that in 2010, former APD DNA analyst Cecily Hamilton lodged an internal complaint raising several issues relating to the DNA lab's management and quality assurance controls. App2X 23; SW2X 37. The complaint alleged, among other things, that DNA analyst Diana Morales was unqualified for her position, that technical leader Cassie

Carradine assisted Ms. Morales in cheating on a proficiency exam, that Ms. Carradine was inconsistent in addressing technical errors in casework, and that there were serious deficiencies in the lab's training program. *Id.*

273. The State asserts that the information was provided to Escobar prior to trial by way of a blast email sent by a non-attorney staff member (a paralegal, not an assistant district attorney associated with this case) of the DA's office to a large group of defense lawyers, including one of Escobar's trial counsel, in July 2010, prior to the commencement of trial on the merits and prior to the filing of Escobar's original writ. Defense counsel, by affidavit, has stated he has no recollection of the email. The court finds the email was not designated as a *Brady* disclosure, made no mention of *Brady*, and made no reference to this case or any of the witnesses involved. The State further claims Escobar was given notice by virtue of a motion in limine filed prior to trial on the merits. The Court finds that item #17 of the State's motion in limine referred to a complaint filed by Hamilton about the lab but made no disclosure of the substance of the allegations concerning lab practices or the various personnel involved.

274. The Court finds the complaint should have been disclosed in accordance with *Brady*. The Court finds the claimed disclosures by the State were insufficient. The Court finds the evidence would have been favorable to the defense and the information would have been admissible. The Court finds that this evidence, standing alone does not create a reasonable probability that, had the evidence be disclosed, the outcome would have been different.

C. *Brady* Allegations Regarding Recalculation of Probability Statistics

275. Escobar also asserts the State failed to disclose *Brady* material relating to recalculation of some of the probability statistics generated by the APD DNA lab and by Fairfax.

276. The State retained DNA expert Ranajit Chakraborty to perform a statistical analysis of certain DNA results. CR at 266. The State specifically asked Dr. Chakraborty if he could provide different statistics for the DNA mixtures that had "low" numbers. App2X 29. Before knowing the details of the case, Dr. Chakraborty agreed to analyze the data based on "exclusion probability by a likelihood analyses . . . that is likely to yield stronger evidence." *Id.* Dr. Chakraborty ultimately did not testify at trial.

277. This Court finds that while many of Dr. Chakraborty's statistical calculations were in a similar range as the statistics generated by APD and Fairfax, his conclusions regarding stain C from the doorknob lock (Item 17.3) were different than Marisa Roe's (formerly Fahrner) testimony about that evidence. Ms. Roe testified that Mr. Escobar could not be excluded from the major component of the profile, which had a frequency rate of .0003, or 3 out of 11,393 males. 26 RR 185. According to the document titled "Topics of Testimony by Dr. Ranajit Chakraborty," Dr. Chakraborty obtained the same frequency rate of .0003, but applied a 95% confidence limit. This increased the frequency rate to 1 out of 1,250 males, thereby weakening the statistic. App2X 25 (Topics of

Testimony for Ranajit Chakraborty) at 8.

278. The Court finds the recalculations done by Dr. Chakraborty and his expert opinion are favorable to the applicant, just as the recalculations discussed with regard to claim one.

279. The Court finds the State did not disclose this *Brady* material prior to the trial on the merits.

280. The Court finds this evidence, standing alone, does not create a reasonable probability that, had the evidence been disclosed, the result would have been different.

D. *Brady* Allegations Regarding DNA Testing by DPS

281. Applicant complains that the State did not disclose until March 23, 2017, "[d]ocumentation indicating that, in July 2010, approximately nine months before Mr. Escobar's trial, APD requested that [the DPS Lab] conduct additional testing on Stain B from the Nautica shirt (APD Item 78.2) and Stain C from the doorknob lock (APD Item 17.3). The disclosure provided on March 23, 2017 did not include any documentation regarding the results of such testing." Application Supplement at 8.

282. The court finds that the original offense reports made reference to the transmittal of certain biological evidence alleged to have been located on Escobar's Nautica shirt and the doorknob lock at the victim's apartment. SW2X 51 at 48 of 444 and 129-130 of 444. The parties made joint motions to have this evidence transmitted to Fairfax for testing. 1 CR 160-161. DPS did, at some point, conduct an analysis of Stain B (the Nautica shirt). AW2X 48. This testing was accomplished during Escobar's 2011 trial but was not disclosed to Escobar until 2017. *Id*. The results were inconclusive. However the "inconclusive" result was caused by "invalid positive control result." That is, a procedural error prevented full analysis.

283. The Travis County DA's Office was unaware of the existence of the report until Applicant's counsel requested it. Moreover, the Travis County DA's Office was unaware that DPS had performed any testing on Stain B from Applicant's Nautica shirt until it made efforts to obtain the DPS lab report at the request of Applicant's counsel.

284. DPS did not generate the report until May 16, 2011, three days after the jury found the applicant guilty of capital murder. 28 RR; 2 CR 295.

285. Even assuming, arguendo, that the State failed to disclose to Applicant, DPS's lab results for Stain B from the Nautica shirt, Applicant is, nevertheless, not entitled to relief on this claim because that evidence is neither favorable nor material to him.

286. Applicant suggests that DPS's results for Stain B from the Nautica shirt were "inconclusive" and, therefore, could have been used to impeach testimony from Morris and Fahrner Roe. In fact, the mini-STR result obtained by DPS for that particular item

was reported as "inconclusive due to an invalid positive control result." No mini-STR results were actually reported for the sample itself. Accordingly, there is no reasonable probability that, had the evidence been disclosed to the defense, the result of the Applicant's trial would have been different.

E. *Brady* Allegations Regarding the APD Freezer Malfunction

287. Applicant complains that the State did not disclose until March 23, 2017, "[d]ocuments confirming that since 2009, DNA samples from Mr. Escobar's case were stored in the APD DNA lab freezer that malfunctioned in March 2016." Application Supplement at 8.

288. The freezer failure at the APD DNA Lab in March of 2016 occurred after testing of the evidence in the case was completed by both APD and Fairfax and five years after Applicant's 2011 trial.

289. The malfunction of that freezer—several years after the DNA testing in Applicant's case—does not reflect negatively on the competence of the APD DNA Lab or its personnel. Another document cited by Applicant indicates that the malfunction remained undiscovered for a week, not because of lab personnel incompetence but because of a glitch in the software for the electronic monitoring system. AW2X 14. That glitch prevented the system from notifying lab personnel that the cooling unit was, in fact, broken. *Id*.

290. Lab personnel became aware of the freezer failure on March 14, 2016 and had it repaired that very same day. AW2X 14.

291. Even if it is assumed, arguendo, that the information contained in the documents cited by Applicant would be admissible, such information is relevant only to the general failure of the lab to follow appropriate procedures and not truly "favorable" to Applicant because the cited documents expressly indicate that the freezer malfunction occurred "after processing by our lab and the external lab [i.e., Fairfax]" and that there were no other instances "at APD" in which "the forensic samples and evidence in Mr. Escobar's case were ever stored in a freezer or other location that malfunctioned in any way with respect to the temperature at which it was kept." AW2X 37 at 1, No. 11.

F. *Brady* Allegations Regarding Compromised Seal on Evidence Bag

292. Applicant complains that the State did not disclose until March 23, 2017, "[a]n internal memorandum by former APD DNA lab supervisor Cassie Carradine, referencing an incident that occurred in an unidentified case in December 2009, within months of the DNA testing in Mr. Escobar's case, in which the seal on an evidence bag became compromised after being handled by lab personnel." Application Supplement at 9.

293. Even if it is assumed, arguendo, that the information contained in the document cited by Applicant would be admissible, such information would be relevant only o the

general failure of the lab to follow acceptable procedures but not otherwise favorable to Applicant and only marginally material.

294. The cited document appears to be a response to a corrective action report ("C.A.R."). Nothing in the cited document suggests that either the C.A.R. or the cited document relates in any way to the instant case. Further, nothing in the cited document suggests the APD DNA Lab mishandled the evidence bag at issue. On the contrary, the cited document contains an affirmative statement of Cassie Carradine that "the seal was intact" when the item of evidence in question was transferred from the DNA lab to the central evidence locker. The document also reflects her statement that, because the item was in the possession of another person and/or unit after it left the DNA lab, it would have been inappropriate for a DNA lab employee to correct that seal. AW2X 38.

G. *Brady* Allegations Regarding Chain of Custody Documentation

295. Applicant complains that the State did not disclose until March 23, 2017, "[p]reviously undisclosed documents pertaining to the chain of custody of key DNA samples in Mr. Escobar's case." Application Supplement at 9. Applicant argues, "Some of these materials appear incomplete or are inconsistent with other chain of custody documents, raising further questions about whether APD followed proper chain of custody protocols in this case." *Id*. In particular, Applicant suggests that the chain of custody form attached to the package containing Applicant's Polo shoes is incomplete or is somehow inconsistent with the corresponding Evidence Continuity form. Application Supplement at 9, n.9 (citing AW2X 5 at 1; AW2X 39). Applicant also suggests that the chain of custody form attached to the package containing a carpet cutting is incomplete or somehow inconsistent with its corresponding evidence continuity form. Application Supplement at 9, n.9 (citing AW2X 5 at 2; AW2X 40).

296. Internal APD records reflect that, on June 2, 2009, after collecting the shoes from Applicant's bedroom at his Decker Lane apartment, Crime Scene Specialist Stacey Wells transported them to the police department's East Substation and placed them in temporary storage. AW2X 2 at 4; SW2X 9 at 2 and Attachments D and E.

297. On June 3, 2009, Wells removed the shoes from the crime scene locker and submitted them to the central evidence locker. AW2X 2 at 4-5; SW2X 9 at 2 and Attachments D and E.

298. On June 4, 2009, Crime Scene Supervisor James Gibbens conducted an internal storage transfer of the shoes, moving them from the central evidence locker to the APD Evidence storage facility. SW2X 9 at 2 and Attachment E.

299. On June 8, 2009, Det. Scanlon submitted a request for transfer of some of the evidence to DPS. APD Crime Scene Specialist Ian Farrell saw the request and, on June 10, he assigned the task to himself and submitted a request to APD property room for the items. On June 11, Farrell retrieved the shoes from their storage location at the APD property room and placed them back into temporary locker 10, located in the Crime

Scene section. The shoes remained in the locker until June 15, 2009, when Farrell removed them and, that same day, delivered them to the DPS lab, along with the carpet cutting from Bianca's apartment. SW2X 9 at 3.

300. The records at issue do not suggest that APD failed to follow chain-of-custody protocols in this case. *Cf. Lagrone v. State*, 942 S.W.2d 602, 617 (Tex. Crim. App. 1997) ("In the absence of any evidence of tampering, therefore, we see no reason to prohibit the admission of properly identified evidence just because it has been kept in an evidence room for an extended period of time and undergone prior forensic testing").

301. Even if it is assumed, arguendo, that the records cited by Applicant would be admissible, those records would not be favorable to Applicant. Nor would they be material.

H. *Brady* Allegations Regarding Koehler PowerPoint Presentation

302. Applicant complains that the State did not disclose until April 12, 2017, additional materials relating to Diana Morales, who screened some of the evidence in this case. Application Supplement at 10. Specifically, Applicant refers to a PowerPoint presentation prepared by Jody Koehler (then-DNA section manager at DPS), which addresses some extraneous cases in which DNA analysis was performed by Morales.

303. Koehler's PowerPoint presentation actually bears the date "2/10/2017," which indicates that the presentation was created nearly six years after Applicant's trial. AW2X 41 at 1. Further, nothing in the document suggests that its contents existed before trial. The presentation addresses a "DNA Case Review" and suggests that the review was precipitated after an issue was identified "[d]uring the TFSC audit of the APD laboratory." *Id*. at 2. That audit, of course, occurred years after Applicant's trial. The document also refers to a "Validation Review." *Id*. at 9. However, nothing in the presentation suggests that such a review occurred prior to Applicant's 2011 trial.

304. Koehler's PowerPoint presentation addresses the performance of Diana Morales only in relation to her DNA analyses. Diana Morales did not participate in any DNA analysis relating to this case. Instead, her "exclusive role with regards to this case [was] simply screening the evidence." 25 RR 107.

305. Nothing in Koehler's PowerPoint presentation supports a rational inference that contamination occurred when Morales screened evidence in this case.

306. Koehler's PowerPoint presentation was not in existence at the time of trial and therefore could not be a *Brady* violation.

I. *Brady* Allegations Regarding March 31, 2017 Dr. Budowle Report

307. Applicant complains that the State did not disclose until April 17, 2017, a report issued by Dr. Bruce Budowle. Application Supplement at 13. That report addresses Dr.

Budowle's review and re-evaluation of the APD lab's DNA results. SW2X 4 (Attachment A). That report, dated March 31, 2017, was generated nearly six years after Applicant's trial.

308. Applicant does not assert, and nothing in the report suggests, that Dr. Budowle's review and re-evaluation were performed before trial or that the opinions summarized in the report were in the possession of the State before trial.

309. There is no basis for any conclusion that the report or its contents could have been used by Applicant as exculpatory or impeachment evidence at trial.

310. Because Dr. Budowle did not complete the report until March 31, 2017, there is no way that the State could have provided it to the Applicant prior to the filing of the subsequent application, which occurred in February of that same year.

J. *Brady* Allegations Regarding Report of Dr. van Daal

311. Applicant complains that the State did not disclose until April 18, 2017, a report issued by Dr. Angela van Daal. Application Supplement at 14-15. However, Applicant does not assert, and nothing in the report suggests, that Dr. van Daal's analysis was performed before trial or that the opinions summarized in the report were in the possession of the State before trial. On the contrary, Applicant himself suggests that the analysis underlying the report was performed at the request of the TFSC. Application at 15.

312. Dr. van Daal's report appears to be undated, but it was clearly written years after Applicant's 2011 trial. The report contains numerous references to events that occurred after 2011. AW2X 46 at 2. The report also refers to "the 2016 APD DNA Laboratory Technical Manual," as well as "[t]he APD DNA Laboratory 2013 manual" and "the manuals from 2014 onwards." *Id*. at 11. It therefore seems clear that Dr. van Daal's report was issued years after Applicant's trial.

313. There is no basis for any conclusion that the report or its contents could have been used by Applicant as exculpatory or impeachment evidence at trial.

IV. CLAIM FOUR: SCIENTIFICALLY UNRELIABLE LATENT PRINT EVIDENCE USED TO CONVICT MR. ESCOBAR

314. Forensic disciplines are evolutionary. Our criminal justice system strives for greater accuracy and reliability. As a result, testimony that seemed appropriate at the time of trial may appear outmoded just a few years later. This is the crux of this issue.

315. The State presented evidence and testimony purporting to match a fingerprint[31]

[31] This print was not the typical "fingerprint," in that it was not an impression of the pad of the first joint of the finger. This was a partial print of the middle joint.

found on a lotion bottle near the body of the deceased, Bianca Maldonado, to Mr. Escobar. 27 RR 1-120. This print will be referred to as "Item 132.9" in accordance with the item number utilized by the Austin Police Department ("APD").

316. During early investigations in the case, the latent print section of the APD crime lab determined Item 132.9 did not belong to Mr. Escobar. 27 RR at 11. This initial exclusion, made by APD latent print examiner Sandy Siegel, was verified by a supervisory examiner in the section, Dennis Degler. Id.; 15 EH2RR 37 (testimony of Mr. Degler).

317. Latent print analysis may be the oldest forensic discipline. The core methodology employed in latent print analysis is known as "ACE-V" (Analyze, Compare, Evaluate, Verification). This methodology has remained largely unchanged since fingerprint analysis was first used in criminal trial more than 100 years ago. The essence of this discipline is simply a visual comparison done by an examiner. Results of latent print analysis are still generally reported as an identification, an exclusion or inconclusive. While there is certainly room for technological advances in the comparison process, none have gained general scientific acceptance at this time.

318. During trial, over the weekend of May 8-9, 2011, APD analyst Sandy Siegel conducted a re-examination of Item 132.9 after ADA Allison Wetzel asked her to collect more known samples from the victim's family. Ms. Siegel then decided to re-compare Item 132.9 to Mr. Escobar's known prints. 27 RR 11-12, 69-74. When she did so, she reversed her original finding, deciding the latent print did in fact match the middle digit of Mr. Escobar's left ring finger. 27 RR 66. That conclusion was verified by supervisory APD latent analyst Richard Pickell. 27 RR 99.

319. Ms. Siegel testified at trial that the latent print from Item 132.9 was not initially identified to Applicant. 27 RR 68. She later testified that upon re-examination of the print, she concluded that it was "identified to the left ring finger" of Applicant, that it "was made by Areli Escobar," and that it was "identical" to his known print. 27 RR 74-76. Prosecutor Wetzel Clarified that Siegel was stating her opinion. 27 RR 75.

320. The defense objected to the State's introduction of this surprise evidence. 27 RR 42-43. Defense counsel had not prepared prior to trial in the forensic discipline of friction ridge analysis. Their trial strategy had not incorporated the possibility of a bloody fingerprint purportedly belonging to their client found inches from the body of the deceased. App2X 201 (Affidavit of trial counsel Allan L. Williams and Steve Brittain) ¶¶16-18. Counsel did not voir dire on the topic of fingerprints, nor did they mention it in their opening statements. 22 RR 52-60. Counsel did not have any experience with the type of print at issue here. 27 RR 26. The Court overruled the objection, despite acknowledging that it "has sort of put them [counsel] on the horns of a dilemma[.]" 27 RR 48-52.

321. Ms. Siegel did not assign any numerical value or level of certainty to her conclusions and she did not state that the identification was to the exclusion of all others.

322. Ms. Siegel testified on cross-examination that Item 132.9 was complex and a "low-quality print." 27 RR 89.

323. Applicant complains about statements made by Ms. Siegel regarding the error rates of print analysis. This exchange occurred outside the presence of the jury.

324. State's witness, Mr. Pickell, testified at trial that when he was asked to verify a print, he would reach an independent conclusion. 27 RR 89.

325. Mr. Pickell testified that Item 132.9 "did match the subject," Areli Escobar. 27 RR 99. He further testified that he could not exclude Applicant as a source of the print. 27 RR 98, 104.

326. Mr. Pickell explained that he did not evaluate prints in terms of low, medium, or high quality per se, but when pressed by the defense attorney, said that he thought the print was medium quality. 27 RR 101.

327. Mr. Pickell did not assign any numerical value or level of certainty and did not state that the identification was to the exclusion of all others.

328. In the presence of the jury, both Ms. Siegel and Mr. Pickell testified without equivocation that Item 132.9 belonged to Escobar.

329. In closing argument, the State told the jury that the expert testimony proved a "match."

330. Applicant presented documentary evidence and the live testimony of Dr. Simon Cole and Dr. Cedric Neumann concerning the latent print evidence and developments in the science surrounding latent-print analysis.

331. Escobar's assertions of "scientifically unreliable" friction ridge testimony generally falls into three categories: (a) the language of identification; (b) evidence relating to error rate; and (c) procedural processes for dealing with low quality prints.

332. At the time of trial, the National Academy of Sciences and the International Association of Identification had both issued documents stating that examiners should not assert absolutely or positive identifications. National Research Council. (2009). *Strengthening forensic science in the United States: a path forward*. National Academies Press; State's Writ B Exh. 75.

333. There is a trend away from expressions of certainty and toward probabilistic evaluations when it comes to latent-print analysis. APD policy concurs: "A latent print analyst should not express a finding in absolute terms because it leaves the impression in the minds of the jury that the conclusion was indisputable." D.Degler, SW2X 13, 3.

334. Latent analysis is subject to some error rate, a fact that the State's expert appeared to deny. A clear example is the misidentification of the Brandon Mayfield/Madrid bombing case. The fact that there are errors associated with latent print analysis was known in the profession prior to Escobar's trial. The Court heard differing assessments of error rate from the experts for each party. To date, there is no consensus in the scientific community concerning the rate.

335. Escobar offered evidence that complex or poor-quality prints should be subjected to enhanced procedures.

336. All witnesses in this litigation agree that Item 132.9 is of poor quality and therefore should be categorized as a "complex" print under the appropriate, current, technical guidelines. 13 EH2RR 80-81 (testimony of Sandra Siegel); 15 EH2RR 44 (testimony of Dennis Degler); 16 EH2RR 70 (testimony of Dr. Neumann, noting consensus among testifying analysts that 132.9 is a complex print). The Court finds this testimony credible and finds that latent 132.9 is of poor quality and should be categorized as "complex."

337. According to post-2011 scientific literature and relevant standards, "complex" prints such as Item 132.9 must be handled in a particularized manner to ensure reliability of results. Pursuant to those post-2011 standards, blind verification, enhanced documentation procedures, and multiple verifications must be utilized in the case of complex prints such as Item 132.9. 16 EH2RR 68-69 (testimony of Dr. Neumann); App2X 81 (Scientific Working Group on Friction Ridge Analysis, Study and Technology ("SWGFAST") Doc. #10, Standards for Examining Friction Ridge Impressions and Resulting Conclusions (Sept. 2011)) at § 6.4.2.2 and Table 2; App2X 83 (SWGFAST Doc. #8, Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V) (Nov. 2012)) at §§ 1.2, 7.[32]

338. Both Dr. Neumann and Dr. Cole explained that blind verification is a "bias management tool" where, prior to conducting the verification of a low quality print such as Item 132.9, the verifier is not permitted access to any information about the original examiner's conclusions. 13 EH2RR 98-100; EH2RR at 70; App2X 82 (SWGFAST Document #14, Standard for the Application of Blind Verification of Friction Ridge Examinations (Nov. 2012)). The Court finds credible Dr. Neumann and Dr. Cole's testimony explaining blind verification and when it is required.

339. There are multiple factors identified in the current (post-2011) standard set forth in App2X 82 that would trigger the requirement of a blind verification with respect to Item 132.9. 13 EH2RR 100. In fact, Ms. Siegel's characterization of the print as "low" quality is one factor requiring blind verification under existing standards. 13 EH2RR at 102-103; App2X 82 at § 3.1.2.

340. Another triggering factor requiring blind verification is the presence of

[32] SWGFAST was the standards-setting body for the field of friction ridge analysis; it has since been superseded by the Organization of Scientific Area Committees, or "OSAC". 13 EH2RR at 56-57.

conflicting opinions. 13 EH2RR 104; App2X 82 at § 3.1.3. Here, the conflict was with examiner Siegel herself, as she had previously reached the opposite conclusion and excluded Mr. Escobar as the source of Item 132.9. Id. at 104. That conflict is amplified by the fact that the initial exclusion had also been verified by Mr. Degler. 15 EH2RR 37.

341. Current guidelines also suggest requiring blind verification when a print is "highly probative" or there is "uncertainty as to anatomical origin" 13 EH2RR104-105; App2X 82 at §§ 3.2.2., 3.2.4. Ms. Siegel acknowledged that Item 132.9 was both highly probative and was of uncertain anatomical origin. 14 EH2RR 26-29, 115.

342. Finally, there exists in this case an additional factor triggering the need for blind verification, namely, the fact of a "strong contextual influence." In this case, ADA Allison Wetzel requested Sandra Siegel to re-evaluate Item 132.9 in the midst of trial. 13 EH2RR 102-103; App2X 82 at § 3.1.1. On this point, Dr. Neumann stressed the need to follow quality assurance protocols such as blind verification to minimize the risk of influence from contextual or confirmation bias. 16 EH2RR at 72-73. The Court credits Dr. Neumann's testimony contradicting the opinion of State's witness Dennis Degler that simply being aware of the possibility of bias could help mitigate it. 16 EH2RR 82. The Court finds credible the testimony of both Dr. Neumann and Dr. Cole that cognitive bias in forensic science cannot be controlled through will power alone. 13 EH2RR 101; 16 EH2RR 82.

343. Ms. Wetzel's mid-trial request to Ms. Siegel was the reason Ms. Siegel decided to re-compare Item 132.9 to Mr. Escobar's known print. She was motivated to conclude that it was a match at least to someone. In her own words: "I had an open latent print, and I was trying to find who it belonged to." This was an important piece of trial evidence. Ms. Wetzel and Ms. Siegel were aware that failure to identify the source of the print would be harmful to the State's case. New science unavailable at the time of trial demonstrates that these are exactly the type of circumstances that create a risk of pro-prosecution confirmation bias. App2X 30 at ¶¶ 19-21.

344. Blind verification did not occur in this case. 13 EH2RR 105 (Dr. Cole testimony); EH2RR 16 (Ms. Siegel testimony); 15 EH2RR 81-82, 111 (Mr. Degler testimony). However, the State did offer the testimony of Richard Pickell, who reached the same conclusion as Siegel. Pickell asserted there was a "match."

345. In addition to blind verification, prints designated as "complex" require enhanced documentation. 16 EH2RR 68. A primary purpose of documentation is to allow the examiner's methodology to be scrutinized during verification. 16 EH2RR 69. Ms. Siegel's documentation methods, however, were difficult to ascertain. The Court credits the testimony of Dr. Neumann, who had the opportunity to review Ms. Siegel's documentation and observe her testimony, concluding that Ms. Siegel's explanation of her documentation practices exhibited a lack of clarity regarding her methodology. 16 EH2RR 65. For example, it was not clear at which point in the process she annotated certain features on the print. 16 EH2RR 63. She also failed to maintain lab notes from which her process could be ascertained. 16 EH2RR 66. Dr. Cole likewise noted a lack of

extensive documentation of the complex print in this case. 13 EH2RR 108. Whether the documentation was as detailed as might be desired is debatable. The Court finds there was documentation that generally complied with current standards.

346. The methodology used by both Sandra Siegel and Richard Pickell, as they described in their trial testimony, was consistent with currently-existing standards for the evaluation and reporting of latent prints.

347. Article 11.073 provides that a court may grant a convicted person relief if:

> (1) the convicted person files an application, in the manner provided by Article 11.07, 11.071, or 11.072, containing specific facts indicating that:
>
> (A) relevant scientific evidence is currently available and was not available at the time of the convicted person's trial because the evidence was not ascertainable through the exercise of reasonable diligence by the convicted person before the date of or during the convicted person's trial; and
>
> (B) the scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date of the application; and
>
> (2) the court makes the findings described by Subdivisions (1)(A) and (B) and also finds that, had the scientific evidence been presented at trial, on the preponderance of the evidence the person would not have been convicted.

Tex. Code Crim. Pro. Ann. art. 11.073(b)

348. Subsection (d) further provides:

> In making a finding as to whether relevant scientific evidence was not ascertainable through the exercise of reasonable diligence on or before a specific date, the court shall consider whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based has changed since:
>
> (1) the applicable trial date or dates, for a determination made with respect to an original application; or
>
> (2) the date on which the original application or a previously considered application, as applicable, was filed, for a determination made with respect to a subsequent application.

349. Serious concern is justified when an expert changes an important opinion mid-trial. That concern is heightened when, as here, the change is from “no” to “yes” regarding evidence suggesting the accused is the actual perpetrator. The concern is

further heightened when the change is made in circumstances strongly suggestive of pressure and confirmation bias. However, the issue before this court is whether the latent print analysis admitted in trial was scientifically unreliable.

350. Applicant has demonstrated that the field of scientific knowledge as to latent-print analysis or reporting, with regard to the terminology to be used in reporting a conclusion, has changed since trial. Applicant has demonstrated that a scientific method or procedure regarding analysis of low-quality prints related to the latent-print evidence has changed since trial to suggest enhanced procedures.

351. Applicant has not demonstrated that the evidence regarding latent print analysis deviated significantly from those new standards.

352. Applicant has not shown by a preponderance of the evidence that, had this evidence been presented at trial, he would not have been convicted.

353. Applicant has failed to show that he is entitled to relief on his Fourth Remanded Claim for Relief.

V. CLAIM SIX: THE STATE'S PRESENTATION OF MISLEADING AND FALSE TESTIMONY CONCERNING CELL-TOWER RECORDS

354. The prosecution presented cell-tower evidence through two witnesses: Belinda Owens, the Custodian of Records for Sprint Nextel Corporation, and Sheila Hargis, a crime analyst supervisor at APD.

355. Through Ms. Owens testimony, the State introduced the Sprint Nextel business records relating to Mr. Escobar's phone, admitted as State's Trial Exhibit 381. 22 RR 76; App2X 62. These records included, inter alia, call-detail records and a list of the network's cell-tower locations in the Austin-market area. 25 RR 77-87.

356. Ms. Owens, who is "not a physicist or engineer," claimed to have "general knowledge [of cell towers] based on the training [she] had received" while working for Sprint. 25 RR 79. Ms. Owens testified that "[cell] towers are sending out signals looking for the phones, so therefore, a tower is *always going to know where that phone is coming from* when it actually initiates and makes a call." *Id*. at 78-79 (emphasis added).

357. Ms. Owens used the call-detail records to identify the cell towers through which Mr. Escobar's phone received four calls around 4:00 a.m. on the morning of May 31, 2015. 25 RR 83. She testified that using the call-detail records, she could identify the longitudinal and latitudinal coordinates for each cell tower relying upon the network's cell site listing and stated that this information could be used to plot the cell tower location on a map. 25 RR 86.

358. Ms. Owens testified that a cell phone connects to the cell tower with the strongest signal, which is generally the tower closest to the phone. 25 RR 81. However, she did not

testify that the cell phone records showed the location of the Applicant's phone.

359. Ms. Owens' testimony regarding the cell towers to which Mr. Escobar's phone connected did not include information regarding the individual sectors on the towers to which the calls connected, nor did it include the azimuth of those sectors (i.e. the geographical direction to which the sector is oriented). Her testimony also omitted any information regarding how the actual coverage area of any given cell tower is determined. *See* 25 RR 75-99.

360. APD Crime Analyst Hargis testified that she used the longitudinal and latitudinal cell tower coordinates to plot on a map the "cell tower hits" associated with Mr. Escobar's phone on May 31, 2009, between 12 a.m. and 12 p.m. 25 RR 143. The map she prepared was admitted as State's Trial Exhibit 382. 8 EH2RR 79-80; App2X 67. The map, depicted the cell towers as triangles, suggesting each tower had three sectors with corresponding geographical orientations. *See* SX 382; App2X 67; 8 EH2RR 79-80. However, no information was presented at trial regarding the actual orientation and coverage area of the cell tower sectors at issue. *See* 25 RR 75-99, 194-203.

361. The cell towers Ms. Hargis plotted on the map showed only the geographic location of the towers and the times of various calls connected through those towers. 8 EH2RR 80. It did not indicate the specific cell tower sectors to which the calls connected or the azimuth of those sectors; nor did it indicate the coverage area of the cell sites in question. *Id*. Further, the map did not include all cell towers in the geographic area covered by the map, only the ones that were "hit" by calls on Mr. Escobar's phone during the specified time frame. 25 RR 151.

362. On the same map, Ms. Hargis plotted the location of the murder, depicted as a figure of a dead body between two towers with the bolded text "**Murder/7000 Decker Ln.**" *See* App2X 67. The location of Mr. Escobar's parents' residence was also plotted on the map. *Id*.

363. At the evidentiary hearing held before this Court on September 6, 2018, Mr. Escobar presented the testimony of Digital Forensics Investigator Gerald R. Grant, an expert in cell phone forensics and historical cell site analysis. Mr. Grant has been a digital forensics examiner for over 30 years, holds various certifications in the field, has been recognized by courts as an expert in digital forensics 37 times, and has conducted cell site data analysis in thousands of cases. 8 EH2RR 48-51.

364. Mr. Grant provided detailed testimony regarding how cell towers function and the limits of the conclusions that can be drawn from historical cell site data. Specifically, he explained that because the evidence presented at trial lacked critical data, it was not possible to draw any specific conclusions regarding the possible location of Mr. Escobar's cell phone in relation to the cell towers, and the trial testimony suggesting the contrary was misleading. This Court finds Mr. Grant's testimony credible and that it established the following:

365. Gerald Grant, the Applicant's expert in cell-phone forensics who testified at the writ hearing, agreed with the trial testimony, stating that a phone does not necessarily connect to the closest tower but that it does happen in many cases. 8 EH2RR 56.

366. Historical cell site analysis can only provide information with respect to a phone's general location within a certain coverage area on the map. App2X 31 (Affidavit of Gerald R. Grant, Jr.) ¶ 11. It cannot pinpoint the precise location of the phone at the time of the call activity. 8 EH2RR 75.

367. A cell phone will connect to the cell tower with the strongest signal, which may or may not be the closest tower. 8 EH2RR 56. A "sectorized tower" is a cell phone tower that has been sectioned off into different sectors. 8 EH2RR 63. The most common configuration is a three-sector cell tower, in which each sector provides 120-degrees of coverage (plus overlap), in order to cover the entire 360 degrees of the cell tower. *Id*.

368. The general coverage area in which a phone is located at the time of a call may be determined by establishing which specific sector the phone connected to during the call activity. App2X 31 ¶ 11. Because call activity connects to a particular sector on a cell tower, not the tower as a whole, without information demonstrating the sector involved, the location of a phone at the time of the call activity can only be said to be somewhere in the coverage area of the tower to which the phone connected. App2X 31 ¶ 12.

369. The geographical area covered by a particular sector of a tower is determined by a number of factors. The sector's azimuth—i.e., the compass heading—denotes the directional orientation of the sector's coverage. 8 EH2RR 69. Several other factors affect the coverage area of a sector. Some of the factors that determine coverage area—such as orientation, down tilt, beam width and signal strength—are manipulated by design, where cell phone company engineers control the area covered by the cell tower so as to avoid interference, provide the best signal, and reduce costs. 8 EH2RR 67-68. Additional factors that affect coverage include features of the landscape or natural occurrences, such as the growth of foliage or dips in the terrain. 8 EH2RR 68, 73. The coverage area of a sector is not a neatly defined shape, but more so like an amoeba-shaped "blob." 8 EH2RR 73.

370. The best way to determine the coverage area of a sector is to perform a drive test using specialized equipment in a vehicle that—while driven on as many roads as possible—records the signal strength at any given time of a sector in relation to the location of the device in the vehicle. 8 EH2RR 71-72. Drive-tests will not provide accurate historical information since the factors that affect coverage-area regularly change over time. 8 EH2RR 72. Accordingly, in order to be accurate, a drive test must be conducted as close as possible to the relevant time period. Id.

371. The cell towers at issue in this case were configured in the typical three-sector configuration. 8 EH2RR 65-66. But the trial testimony omitted any information regarding the sectors to which the calls in question connected, even though that information was readily discernable from the call records. 8 EH2RR 80. Specifically, when Ms. Owens

testified that specific number and letter combinations in the records could be used to identify the tower to which a call connected (25 RR 92), she did not explain that the specific number-letter combinations could be used to identify not just the tower to which a call connected, but the specific sector on the tower to which a call connected. 8 EH2RR 112. She also did not explain that the records indicated that some of the calls which she described as having connected to a particular tower actually connected to two different sectors on that tower, meaning that those calls may have involved different coverage areas. *Id*.

372. The map created by Ms. Hargis similarly failed to accurately depict the available data. The map indicated only that three calls connected to one tower and four calls connected to the other tower, omitting the critical fact that of the four calls depicted as having connected to a single tower, three calls connected to one sector on the tower and one connected to a different sector on the tower. See App2X 62; 8 EH2RR 104. Again, the information as presented to the jury failed to make clear that different calls to the same tower involved distinct coverage areas.

373. The trial testimony also omitted any information regarding the azimuth of the cell tower sectors at issue. Because the azimuth identifies the directional orientation of a sector's coverage, that information is necessary to determine the geographic direction of the phone in relation to the tower to which it connected. 8 EH2RR 75-76. Without the azimuth data, you cannot draw a conclusion regarding the location of the phone relative to the tower except that "[the call] just hit that cell tower" 8 EH2RR 76. The State did not present azimuth evidence at trial although it would have been available and accessible by the State, since information was maintained by cell phone companies in 2009. 8 EH2RR 117.[33]

374. The actual coverage area of the relevant cell tower sectors also was not established at trial. A drive-test conducted close to the time of the incident could have provided this information, but there is no evidence that a drive-test was ever conducted. 8 EH2RR 113. Without this information, given the multiple factors that can influence the range of a cell tower, it is purely speculative to assume an "average" coverage area for a cell tower sector. 8 EH2RR 78.

375. Likewise, no conclusions can be drawn regarding the coverage area or signal strength of a cell tower based upon knowledge of the population density, or the presence or absence of any geographic obstacles, in the area where the tower is located. Antenna broadcast strength is determined not just by population density and landscape, but also by height of the tower and down-tilt of the antenna. 8 EH2RR 85. In this case, no information was presented about these factors; therefore, nothing can be assumed about the signal strength or coverage area of the towers at issue regardless of any familiarity with the population density and landscape of the area. 8 EH2RR 87.

376. The cell tower evidence was used to suggest that the only reasonable inference

[33] Mr. Grant testified that in another case from that same time period, he was provided such information from Sprint/Nextel. *Id*.

was that Mr. Escobar's cell phone was located between the two cell towers at issue, in the vicinity of the murder scene. Mr. Grant testified such an inference "would be false." 8 EH2RR 90. "[W]ithout [the missing] data, you just simply can't draw a conclusion. The best you can say is that [the cell phone] was connected to those two towers, nothing with location." 8 EH2RR 92. By presenting cell tower data without orientation and sector data, "you're not showing the true picture of what's happening to that phone." 8 EH2RR 86. "It's the lack of data that's misleading."[34] 8 EH2RR 112.

377. To illustrate the misleading nature of the evidence presented at trial, Mr. Grant demonstrated that, based on that evidence, Mr. Escobar's phone could have been in a multitude of possible locations at the time of the calls in question. See, e.g., 8 EH2RR 81-87, 109. Using the map prepared by Ms. Hargis, Mr. Grant demonstrated that—depending on various permutations of the variables omitted from the trial testimony (i.e., sector, azimuth, and coverage area of the towers in question)—the phone could have been in countless locations nowhere in the vicinity of the crime scene. See App2X 72 (Diagram with demonstrative drawings by Gerald R. Grant)

378. The testimony of Belinda Owens was factually accurate but incomplete.

379. APD Crime Analyst Hargis testified that she used the longitudinal and latitudinal cell tower coordinates to plot on a map the "cell tower hits" associated with Mr. Escobar's phone on May 31, 2009, between 12 a.m. and 12 p.m. 25 RR 143. The map she prepared was admitted as State's Trial Exhibit 382. 8 EH2RR 79-80; App2X 67.

380. The fact that Escobar's cell phone connected at various times to two adjacent cell towers may indicate that the phone changed location or may indicate that the signal was "passed off" from one receiver to another due to cell-traffic overload.

381. The map contained in State's 382 was not inaccurate.

382. Ms. Hargis did not testify that the map showed the location of Applicant's phone. When questioned by defense counsel she agreed that the map did not show the actual location of the phone.

383. There was no testimony from any witness that placed the Applicant or his phone

[34] The State asserts that the omission of sector and azimuth data is permissible because Texas courts have admitted cell phone evidence without such data. *See* State's Argument Regarding Cell Tower Evidence, filed on November 20, 2018, at 7. In support of its argument, the State, cites *Patterson v. State* and *Wilson v. State*. Neither case, however, addresses the issue raised here: that the testimony interpreting cell tower data offered at trial created a false impression due to the omission of critical data. *Patterson* involved a *Daubert* challenge to expert testimony regarding the content of cell phone records. In *Patterson*, the defense originally stipulated to the admissibility of cell phone records, but later challenged the proffered testimony of a police detective who offered testimony interpreting those cell phone records. *Patterson v. State*, No. 05-13-00450-CR (Tex. App. Dallas, May 19, 2015). There was no claim raised that the cell phone testimony offered by the detective misled the jury or omitted crucial information that impacted the jury's verdict. Likewise, in *Wilson v. State*, the issue was not whether the testimony was misleading or omitted important data, but instead, whether summaries of voluminous data presented at trial were admissible under Rule 1006 of the Texas Rules of Evidence. *Wilson v. State*, No. 05-15-01407-CR (Tex. App. — Dallas, Jan. 5, 2017).

at a specific location based on the cell phone records in State's Exhibit 381 or the map entered as State's Exhibit 382.

384. During closing argument, ADA Allison Wetzel stated that the phone records showing the calls placed through the two cell towers were "consistent with him being" at the crime scene. 28 RR 73. She did not assert that the records definitively placed the Applicant at the scene. The jury was admonished that argument of counsel is not evidence and no objection to Ms. Wetzel's statement was raised by Applicant's trial counsel. 28 RR 20.

385. Grant testified at the writ hearing that the cell phone records did not exclude the possibility that the Applicant's phone was at the crime scene. 8 EH2RR 110.

386. The cell-tower evidence, standing alone, is of only minor probative value because Escobar and the victim lived in the same apartment complex. The persuasive power of this evidence is due its connection to the testimony of Escobar's girlfriend that she heard sounds she associated with sexual activity and heard a woman screaming; these two items together connected Escobar to the offense in a manner which neither standing alone could accomplish.

387. Additional evidence tied the Applicant to the crime scene. The Applicant's DNA was found on the doorknob lock in Bianca Maldonado's apartment, Bianca Maldonado's DNA was found on a pair of shoes found in the Applicant's apartment and in a Mazda that the Applicant had been driving. The Applicant's fingerprint was found on a lotion bottle recovered from Bianca Maldonado's apartment. Zoe Lopez Moreno, the Applicant's girlfriend at the time, testified about placing multiple calls to the Applicant's cell phone in the early morning hours of May 31, 2009. While most of the calls went to voicemail, one call connected, and for ten minutes she heard someone screaming and moaning in the background. Nancy Escobar, the Applicant's sister, testified that her mother had contacted her that morning asking whether Applicant had been in a fight and saying he had blood on his shirt.

388. The State's use of false evidence to obtain a conviction violates the due process clause of the Fourteenth Amendment. *Napue v. Illinois*, 360 U.S. 264, 269 (1959); *Giglio v. United States*, 405 U.S. 150, 153-54 (1972). In *Ex parte Chabot,* the CCA held that a conviction secured by false evidence violates due process, even if the State neither knew nor should have known that the evidence was false. *Ex parte Chavez*, 371 S.W.3d 200, 204 (Tex. Crim. App. 2012) (citing *Ex parte Chabot*, 300 S.W.3d 768, 772 (Tex. Crim. App. 2009). To prevail on a *Chabot* claim, the applicant has the burden of proving by a preponderance of the evidence that: "(1) false evidence was presented at his trial and (2) the false evidence was material to the jury's verdict of guilt." *Ex parte De La Cruz*, 466 S.W.3d 855, 866 (Tex. Crim. App. 2015). "[A] false statement is material only if there is a reasonable likelihood that the false testimony affected the judgment of the jury." *Ex Parte Weinstein*, 421 S.W.3d 656, 665 (Tex. Crim. App. 2014).

389. In determining whether evidence is false, "the relevant question is whether the

testimony, taken as a whole, gives the jury a false impression." *De La Cruz*, 466 S.W.3d at 866. Testimony "need not be perjured to constitute a due process violation; rather it is sufficient that the testimony was false." *Chavez*, 371 S.W.3d at 208. Ultimately, the rationale underlying *Chabot* claims is to ensure that convictions and sentences rest on truthful testimony. *De La Cruz*, 466 S.W.3d at 866 (internal quotation marks and citations omitted).

390. Testimony that is factually accurate on its face but creates a false impression by omitting critical factors can violate due process. The CCA has observed that false impression testimony can be caused under circumstances where "the witness omitted or glossed over pertinent facts." *Ex parte Robbins*, 360 S.W.3d 446, 462 (Tex. Crim.App.2011). *See, e.g., Ex parte Ghahremani*, 332 S.W.3d 470, 477 (Tex. Crim. App. 2011) (testimony from parents of a sexual assault victim describing psychological difficulties she experienced after the attack created a false impression because it omitted information about other intervening factors that could have also impacted the victim's psychological condition); *see also Alcorta v. Texas*, 355 U.S. 28 (1957) (where defendant claimed he murdered his wife in sudden passion when he found a man kissing her, the testimony of the only eyewitness created a false impression when the eyewitness omitted the fact that he was the wife's paramour).

391. The evidence presented at trial regarding cell-phone calls and cell towers was substantially incomplete regarding the cell-site sector, azimuth information, and coverage-area testimony. However, the testimony presented was not inaccurate nor did it create a false impression, as in *Ghahremani* or *Alcorta*. The essence of Applicant's complaint relates not to whether the testimony was misleading, but rather to whether the argument based on the evidence was erroneous.

392. Ms. Wetzel's statement during closing argument was a reasonable inference from the evidence presented.

393. Applicant has failed to establish that the evidence presented at his trial concerning the cell-tower records was false.

394. Even assuming *arguendo* that the cell-tower evidence was misleading because of the omission of additional information concerning cell-site sector, azimuth information, and coverage area, Applicant has failed to establish that the testimony was material in that it was reasonably likely to have affected the judgment of the jury.

395. The evidence presented at trial regarding cell-phone records and cell-tower locations did not violate the Applicant's right to due process under the Fourteenth Amendment to the U.S. Constitution.

396. Applicant has failed to show that he is entitled to relief on his Sixth Remanded Claim for Relief.

OVERALL FINDINGS OF FACT AND CONCLUSIONS OF LAW REGARDING THE FORENSIC EVIDENCE USED TO CONVICT MR. ESCOBAR

I. THE STATE RELIED ON UNRELIABLE, FALSE, AND MISLEADING EVIDENCE TO SECURE MR. ESCOBAR'S CONVICTION

397. The Court expressly adopts and incorporates all previously made Findings of Fact and Conclusions of Law.

398. The Court finds that new scientific evidence concerning the APD DNA lab crisis and scientific developments in DNA mixture interpretation casts substantial doubt on the DNA evidence presented at trial. In light of the significant quality issues uncovered at the APD DNA lab, including the failure of the lab's entire quality assurance system, there can be no confidence that the lab produced valid and accurate results. This is especially true in Mr. Escobar's case, given the problems with the particular lab personnel who handled the evidence and the concerns about the collection, storage, and handling of the evidence at every step of the forensic process. Because of the downstream effects of these issues, there can likewise be no confidence in the DNA results obtained by Fairfax, since either the APD DNA lab or the APD Forensic Science Division handled every single evidentiary item later processed by Fairfax.

399. Furthermore, new scientific understandings about DNA mixture interpretation reveal that the methods used to interpret at least seven out of the twelve incriminating DNA samples in this case were subjective and not scientifically valid. The samples impacted by the developments in DNA mixture interpretation include the only two samples that were not tested by the APD DNA lab—the Mazda samples.

400. The Court finds that the applicant did not demonstrate that new scientific evidence concerning friction ridge analysis significantly undermines the reliability of the latent print evidence presented at trial.

401. The Court further finds that the cell-tower evidence, while incomplete, was not false and did not give the jury the false impression that cell data placed Mr. Escobar in the vicinity of the crime scene.

402. The Court finds that, after removing the DNA evidence presented at trial, the remaining evidence relied on by the State was questionable and circumstantial. The Court finds by a preponderance of the evidence that the outcome would have been different, especially in light of the testimony of a sitting juror that he was "on the fence" until the DNA evidence was submitted.

II. THE STATE'S RELIANCE ON FLAWED FORENSIC EVIDENCE VIOLATED MR. ESCOBAR'S DUE PROCESS RIGHTS AND WARRANTS REVERSAL OF HIS CONVICTION.

403. "Finality of judgment is essential in criminal cases, but so is accuracy of the result—an accurate result that will stand the test of time and changes in scientific knowledge." *Robbins II*, 560 S.W.3d at 161 (Newell, J., concurring) (quoting *Ex parte Robbins (Robbin I),* 360 S.W.3d 446, 469–70 (Tex. Crim. App. 2011) (Cochran, J., dissenting). The Court finds that in this case, accuracy must override finality.

404. The Court finds that the use of unreliable and misleading DNA evidence violated Mr. Escobar's due process rights by undermining the fundamental fairness of his trial. *Gimenez v. Ochoa*, 821 F.3d 1136, 1143 (9th Cir. 2016) (citing *Estelle v. McGuire*, 502 U.S. 62, 68-70 (1991); *Lee v. Houtzdale SCI,* 798 F.3d 159, 162 (3d Cir.2015); *Dowling v. United States*, 493 U.S. 342, 352-53 (1990); *McKinney v. Rees*, 993 F.2d 1378, 1385 (9th Cir. 1993); *Kealohapauole v. Shimoda*, 800 F.2d 1463, 1465-66 (9th Cir. 1986). Accordingly, the Court recommends that relief be granted and Mr. Escobar's conviction be reversed.

III. CONCLUSION AND RECOMMENDATION

405. The Court has found sufficient facts to support granting relief in accordance with Articles 11.073 and 11.071(5)(a) of the Texas Code of Criminal Procedure and clearly established federal and state case law interpreting the United States Constitution. The Court therefore recommends that Applicant be granted habeas corpus relief with respect to Claims One and Two set forth in his subsequent writ application. Specifically, the Court recommends that Applicant be granted a new trial because relevant scientific evidence, admissible under the Texas Rules of Evidence, is currently available that contradicts scientific evidence relied on by the State at trial to convict Mr. Escobar and currently available science was not available to be offered by Mr. Escobar at trial. Furthermore, the Court recommends that Applicant be granted a new trial because Mr. Escobar's conviction was secured in violation of Mr. Escobar's right to due process under the Fourteenth Amendment to the U.S. Constitution. *Brady v. Maryland,* 373. U.S. 83 (1963); *Napue v. Illinois*, 360 U.S. 264 (1959); *Ex parte Chabot*, 300 S.W. 3d 768 (Tex. Crim. App. 2009).

The Clerk shall send a copy of this order to the Applicant and to the State of Texas.

Signed on this the 12/31/2020 | 4:02:46 PM CST day of 12/31/2020 | 4:02:46 PM CST, 2020.

DocuSigned by:
DAVID WAHLBERG
A934C30560B6478...

The Honorable David Wahlberg
Judge, 167th District Court

APPENDIX C

NO. WR-81,574-02
TRIAL COURT CAUSE NO. D-1-DC-09-301250-B

IN THE COURT OF CRIMINAL APPEALS

OF THE STATE OF TEXAS

EX PARTE	§	IN THE DISTRICT COURT
	§	OF TRAVIS COUNTY, TEXAS
ARELI ESCOBAR	§	167TH DISTRICT COURT

STATE'S SUGGESTION FOR RECONSIDERATION ON THE COURT'S OWN INITIATIVE

TO THE HONORABLE JUDGES OF THE COURT OF CRIMINAL APPEALS:

COMES NOW the State of Texas, by and through its District Attorney for Travis County, Texas, in the above-entitled cause, and respectfully suggests that this Court reconsider[1] its *per curiam* Order on Applicant's Application for Writ of Habeas Corpus denying relief to the Applicant. A request by the State to reconsider the denial of habeas

[1] "A motion for rehearing an order that denies habeas corpus relief or dismisses a habeas corpus application under Code of Criminal Procedure, articles 11.07 or 11.071, may not be filed. The Court may on its own initiative reconsider the case." Tex. R. App. P. 79.2(d); *see also, Ex parte Moreno*, 245 S.W.3d 419 (Tex. Crim. App. 2008).

relief, although "an unusual move," is not without precedent. *Ex parte Dyson*, 631 S.W.3d 117 (Tex. Crim. App. 2021). The State has conceded that the Applicant is entitled to relief, and suggests that this Honorable Court file and set the case and order briefing from the parties. In support thereof, the State of Texas submits the following:

Procedural History

Applicant was convicted of capital murder in May 2011, and the trial court set punishment at death in accordance with the jury's answers to the special issues submitted under Article 37.071. This Court has affirmed the conviction and sentence on direct appeal. *Escobar v. State*, No. AP-76,571 (Tex. Crim. App. Nov 20, 2013) (not designated for publication).

Applicant filed an initial post-conviction application for habeas relief, which was denied by the Court. *Ex parte Escobar*, No. WR-81,574-01 (Tex. Crim. App. Feb. 24, 2016) (not designated for publication).

Subsequently, Applicant filed on February 15, 2017, the instant application for habeas relief, raising additional grounds. On October 18, 2017, this Court remanded the application to the District Court, finding that "with regard to Allegations One through Four, applicant has

alleged prima facie facts sufficient to invoke Article 11.073." This Court additionally found:

> "with regard to that portion of Allegation Six in which applicant asserts that the State violated his right to due process by presented misleading testimony about his proximity to the murder scene based on cell-tower location information, applicant has alleged prima facie facts sufficient to satisfy Article 11.071, section 5(a)(2). Therefore, as to those five allegations, the application satisfies the requirements of Article 11.071, § 5(a), and the cause is remanded to the convicting court for consideration on the merits."

Consistent with this order, the District Court undertook the laborious task of considering the merits of the remanded claims. The District Court admitted hundreds of exhibits and presided over a series of evidentiary hearings starting in May 2018 and culminating in closing arguments on December 3, 2020. On December 31, 2020, the Judge of the 167th District Court signed lengthy findings of fact and conclusions of law, consisting of 405 paragraphs, ultimately recommending this Court grant relief to Applicant.[2] Specifically, the District Court concluded that Applicant was entitled to habeas relief and a new trial based on Claims One and Two.

[2] *See* District Court's Findings of Fact and Conclusions of Law and Order to Transmit Habeas Corpus Record (Article 11.071 and 11.073 Post Conviction Application).

On January 1, 2021, a newly-sworn administration began work at the Travis County District Attorney's Office. Subsequently, on January 11, 2021, the State filed its Objections to the Court's Findings of Fact and Conclusions of Law and Abandonment of Certain Proposed Findings of Fact and Conclusions of Law. In its Objections, the State objected to specific portions of the District Court's findings of fact and conclusions of law and abandoned any other previously proposed findings and conclusions.

On January 26, 2022, this Court issued a *per curiam* order rejecting the recommendations of the District Court with respect to Claims One and Two, and denying Applicant's plea for relief. In the interests of justice, the State respectfully suggests this Court reconsider.

Clarifying The State's Position

The State of Texas ultimately concurs with the District Court that Applicant's due process rights under the laws and Constitution of Texas and under the Constitution of the United States have been violated and that he is entitled to relief under both Claims One and Two.

The State is concerned that it did not clearly illuminate its changed position from initially opposing relief to ultimately that of

supporting relief for the Applicant. The possibility that the State failed to have clearly indicated its change in position has come to its attention because this Court did not acknowledge in its Order, as is usual practice, that the State had conceded that Applicant was entitled to relief.[3]

The State has much to offer this Court in terms of analysis of the facts, the law, and the failures in the forensic science that supported the conviction, but procedurally could only provide a brief if this court requests it.

Prayer

Based on the foregoing, the State respectfully suggests that the most productive way to help this Court in its decision in this case would

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[3] *See, e.g., Ex parte Colone*, No. WR-89,538-01, 2022 ___S.W.3d ___, (Tex. Crim. App. Mar. 2, 2022); *Ex parte Timmons*, No. WR-92,604-02, 2021 Tex. Crim. App. Unpub. LEXIS 511, at *2 (mem. op., not designated for publication) (Tex. Crim. App. Sep. 22, 2021) ("[T]he State concedes the aggravated robbery conviction should be vacated."); *Ex parte Kussmaul*, 548 S.W.3d 606, 629 (Tex. Crim. App. 2018) ("At the end of the habeas hearing the State conceded that Kussmaul is entitled to a new trial because his trial counsel had DNA results but failed to correct a false impression left with the jury[.]"); *Ex parte Barnaby*, 475 S.W.3d 316, 321 (Tex. Crim. App. 2015) (noting that the State conceded the issue of falsity); *Ex parte Zavala*, Nos. WR-79,731-01, WR-79,731-02, WR-79,731-03, 2013 Tex. Crim. App. Unpub. LEXIS 842, at *2 (Tex. Crim. App. July 24, 2013) (mem. op., not designated for publication) ("The State concedes that relief should be granted."); *Ex parte Golden*, 991 S.W.2d 859, 863 (Tex. Crim. App. 1999) ("Our willingness in this case to address the merits of applicant's claim is grounded on the particular facts of this case: first, the State has not moved to dismiss applicant's application on the ground it is unsworn; second, the State concedes applicant is entitled to relief; third, the trial court has made relevant fact-findings; and fourth, there is adequate proof in the record to support applicant's claim.").

be for this Court to file and set the case, order briefing, and issue a full opinion acknowledging the entirety of the record, in the interests of justice.

Respectfully submitted,

José Garza
District Attorney
Travis County

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Certificate of Compliance and Service

I certify that on 3/11/2022 | 4:22 PM CST, a true and correct copy of the State's Suggestion for Reconsideration on the Court's Own Initiative was electronically served on Benjamin Wolff, benjamin.wolff@ocfw.texas.gov; Carlotta Lepingwell, carlotta.lepingwell@gmail.com; and Robert McGlasson, rlmcglasson@me.com, Attorneys for the Applicant.

DocuSigned by:
Colin Bellair
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Colin J. Bellair
Assistant District Attorney
Travis County, Texas

APPENDIX D

OFFICIAL NOTICE FROM COURT OF CRIMINAL APPEALS OF TEXAS FILE COPY
P.O. BOX 12308, CAPITOL STATION, AUSTIN, TEXAS 78711

4/4/2022

ESCOBAR, ARELI CARBAJAL Tr. Ct. No. D-1-DC-09-301250-B WR-81,574-02

This is to advise that the State's suggestion for reconsideration has been denied without written order.

Deana Williamson, Clerk

ARELI CARBAJAL ESCOBAR
C/O BRAD LEVENSON
OFFICE OF CAPITAL WRIT
1700 N. CONGRESS, STE. 460
AUSTIN, TX 78711

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4/4/2022

ESCOBAR, ARELI CARBAJAL Tr. Ct. No. D-1-DC-09-301250-B WR-81,574-02

This is to advise that the State's suggestion for reconsideration has been denied without written order.

Deana Williamson, Clerk

PRESIDING JUDGE 167TH DISTRICT COURT
P O BOX 1748
AUSTIN, TX 78767-1748
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4/4/2022

ESCOBAR, ARELI CARBAJAL Tr. Ct. No. D-1-DC-09-301250-B WR-81,574-02

This is to advise that the State's suggestion for reconsideration has been denied without written order.

Deana Williamson, Clerk

DISTRICT CLERK TRAVIS COUNTY
VELVA L. PRICE
P.O. BOX 679003
AUSTIN, TX 78767
* DELIVERED VIA E-MAIL *

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4/4/2022

ESCOBAR, ARELI CARBAJAL Tr. Ct. No. D-1-DC-09-301250-B WR-81,574-02

This is to advise that the State's suggestion for reconsideration has been denied without written order.

Deana Williamson, Clerk

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4/4/2022

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Deana Williamson, Clerk

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4/4/2022

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