EXHIBIT 4z

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE 2-11-78 Interview with Billy Brown -1-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q: Okay Billy what we've done is we've turned on a tape recorder so we can record the conversation and I'm sure you recall talking to a DetectiveSnow?

A: Yeah

Q: Okay he had a tape recorder on.

Q: Billy, uh I'm gonna ask the officers to read you your rights again and uh uh, Officer Christensen and Lean.

Q: Billy this is in regards to uh a situation that developed out in Modesto and ended up here in Calowa and uh theres some information that uhm we'd like to clarify before we go ahead, hu, we wanta advise you of your rights, you have the right to remain silent, anything you say can and will be used against you in a court of law. You have the right to talk to a lawyer and have him present with you while your being questioned. If you cannot afford to hire a lawyer one will be appointed to represent you before any questioning if you wish. You can decide at any time to exercise these rights and not answer any questions or make any statements. Do you understand each of the rights I have explained to you?

A: Yes

Q: Uh having these rights in mind do you wish to talk to us now?

A: Yes

Q: Okay, Billy, I wanta ask you a few questions, and you, you when you talked to Detective Snow here today you gave a pretty detailed statement but theres

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Christensen/Lean/Ardiaz		Sheriff's Dic...	2-14-78	

FURTHER ACTION ☐ YES ☐ NO

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CAL. JUS. CR #2 SO-7

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -2-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q: a couple of things I wanta clear up. Now, Billy you recall, you recall do you know, do you recall seeing a girl named Christine?

A: Yeah

Q: Okay, you know who she is?

A: Yeah she looks like an injun broad.

Q: Okay, now where'd you first see her.

A: Went with some guy, named a Fresno there, joint there, some bar downtown

Q: Think it was joint here?

A: Some bar downtown.

Q: Okay, you remember the girl you talked about the red headed girl, the girl that got shot, was she with you at that time?

A: Yea

Q: Okay, now Billy I'm gonna go through a sequence of events based on what you previously stated and I'm gonna ask you a few questions about that. Okay you picked up Christine Menchaka, when I say you, she got in the car. Okay, and the girl who's car it was was in the car with you, Right. Okay than according to your statement you went by a place, the Olympic Hotel or something, and ther you went out onto the west side where the girl was shot, is that right.

A: Yea thats right

Q: Yeah I understand, and then after that happened you went back for some, where, Clovis?

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LEAN/ARDIAZ, CHRISTENSEN		Dlc	2-14-78	

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: Yeah

Q: And then they took you home

A: Yea

Q: Where you talked to your parents. All right now Billy, we have some police officers who were on the west side that night about 8:00 p.m. and they say that they saw some people in a car just like this and that they stopped, they stopped and talked to them.

A: Yeah

Q: Okay, okay now, what what is that, do you recall how many officers it was.

A: There was two of em

Q: Were they on foot

A: Yes

Q: And uh where was the car when they talked to em?

A: When they talked to uh, we were in front there

Q: In front of what

A: In front of the Seven seas resteraunt

Q: The Seven seas

A: Uh huh (positive)

Q: Well was that when you picked up Christine Menchaka?

A: No we didn't pick, she was already in the car. They told her, to go

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FURTHER ACTION ☐ YES ☐ NO

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

inside and see if they could sell that watch, that that girl had

Q: Okay now, okay lets back up Billy, whenever, when the police officers came up they asked you how old you were right?

A: Yeah

Q: And where were you seated in the car?

A: I was seated on the, on the drivers side, no I was sitting right in the middle on that little lump on the in the car.

Q: In the back or the front?

A: In the back

Q: Okay where was the girl who's car it was?

A: THEY already shot her.

Q: They already shot her?

Q: Okay, thats what were trying to clear up, cause you know whenever you said you'd go on back to ClovisWith us you know, where's the Olympic Hotel then in relation to the Seven Seas?

A: Well it in, cause the deal with the thirty dollars and the watch, and when they got in to Fresno, they were to pick up Christine at that bar, some bar, (unintelligible) and then we went to the Olympic Motel to pick up a the Heroin I think thats what they were talking about, and we stopped there and from there they, from there they jammed out, and they drove, they go lets go pick up at Calwa, you know, and then they drove out to Calwa and I

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE

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70. CODE SECTION | 71. CRIME | 72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.) | 74. ADDRESS ☐ RESIDENCE ☐ BUSINESS | 75. PHONE

A: thought we were in Fresno cuz I was tired and then they musta shot her out there and then they go alright lets head back to Chinatown cuz they had the watch and the thirty dollars and

Q: Okay let me stope you a minute, when you say they musta shot her, you mean, your talking about the location, you weren't too sure about the location

A: No man cuz I was sleeping see, they drove all that way, and

Q: You saw Zankowicz shhoot the girl, you've already told us about that okay, let me get my sequence of events straight because its important to us exactly what happened. You stopped off and you picked up CHRISTINE MANCHAKA at the Joy Joy, which you think is the Joy Joy. The girl, then you all got into the car and you went out to Olympic Motel and Zankowicz and who else got out of the car?

A: CHRISTINE and TINA, in there, and then they drove uh, Lewis, they gave LEWIS the gun and told LEWIS to watch the car. And the girl, and I was sitting on this side and then the girl, and then right, then the guy with the gun was right here and then the girl was talking and she goes uh I hope there ain't no shooting down, and I go yeah I know cuz I don't wanta get shot and she said the same thing. And then they played, then Stakowitz came back down, down then he got the gun and she asked him again is there anything that she (unintelligible). And then Zankowitz said I don't know. But he got the gun and stuck it in his pants and they called him back up again and he went

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DATE _____ -6-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

back up there.

Q: Whos they?

A: Tina and Christine called him back up there again. So he went back up there and about five minutes later he came down and then they we split to Calwa and then that when they shot her, right there on the corner of 10th & 9th they said.

Q: Okay, you know now that it was Calwa. That night you weren't to sure it was. Okay, Okay so who got out of the car when the girl was shot?

A: Uh, lets see, I was in the car,passenger, this side, on the drivers side on the drivers side towards the front, and Christine and the girl and the wait a minute, TINA, CHRISTINE, Larry and the girl that was sitting in the middle and I was sitting they were ther, and he goes uh, they were asking some kinda question, if we were hungry or something you know,

Q: Who was?

A: TINA, she goes you hungry Billy? Because Tina, TINA was supposed to make sure I was home that night, cause my mom said she was gonna call the cops, and I said yeah I'm hungry and she told the other guys, she told Doug and that Lewis and her to get out of the car cuz they were gonna go pick up some Herion so you know, some more Heroin so they got outta thecar and then I seen Lewis come walking back to the door and then I looked over at Doug and that girl and I seen Doug point the gun at her head and go "POW" and she dropped and thats

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73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.) | 74. ADDRESS ☐ RESIDENCE ☐ BUSINESS | 75. PHONE

A: when Doug come over to the car.

Q: Okay let me ask you a question. Now I understand you described how he pointed the gun. Now when he pointed the gun, did he hold his hand out straight and point it, did he hold it with two hands and point it?

A: No, he couldn't.

Q: Okay could you show me how?

A: Yeah, it was like this (demonstrates) cause I seen his wrist pop up like that.

Q: Okay what your describing to me, let me see if we get it correct, what your describing to me is holding his gun in his right hand, the arm extended straight out, like this (demonstration), and then taking the left hand, the palm under what would be the grip of the gun and holding it like that.

A: Yeah and when he shot it popped up like that. Just a little bit.

Q: Popped up a little bit of recoil.

A: Yeah, he only just shot once.

Q: Where was the girl looking whenever he fired the gun.

A: Looking the other way, the opposite way

Q: Okay, you told us you heard uh, him uh make a statement to Lewis about how he really dropped her. Where was Lewis standing when Zankowitz shot the girl.

A: All right. The girl was standing there, Zankowitcz standing there.

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FURTHER ACTION ☐ YES ☐ NO

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Lewis was still kinda making the L.

Q: Kind of in a L shape if you connected the dots up.

A: Yeah, then Lewis was standing there. Lewis started walking to the car, and then two guys started getting in and I looked over like that and I seen him shoot her, and then he came running to the car.

Q: Okay, when Lewis was out there, did he have any kind of a weapon with him.

A: He had his knife.

Q: Was the knife out?

A: The knife was out of the case.

Q: How was he holding the knife.

A: He (stuttering) was holding it like this (demo).

Q: Now your describing in your right hand with the blade up in the air?

A: Yeah, no he had it on his leg like, like this.

Q: And he was just holding it?

A: Uh huh (affirmitave)

Q: Knife was out, you could see the blade? Did he have it with him whenever he got out with the girl?

A: Unh unh (negative) I don't think so.

Q: You think he was unarmed?

A: Yeah

Q: You know where the knife was?

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FURTHER ACTION ☐ YES ☐ NO

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: I think at that time it was right where the console was. You know what a console is? I think in between the seat the console.

Q: The console that goes down the middle of the car?

A: Unh huh (affirmitave).

Q: Okay. Now Billy when you uh , okay so the girl, the girl was shot, okay Zankowitz got back in the car, Lewis was in the car talking, Mancheka Manchaka and you right?

A: Mhmm

Q: Now anybody else in the car?

A: Nmhm (negative)

Q: Okay where did you go then?

A: Thats when I went to that bar.

Q: That when you went back to the Seven Seas, or went to the Seven Seas.

A: Yeah, yeah and they tried to sell it.

Q: Okay, who's they?

A: Uh, TINA, and TINA, wait a minute, CHRIS IS the one that walked in to see if she could see it.

Q: CHRISTINE MENCHAKA?

A: Yeah. And then she asked a Lewis, she goes, Lewis, why don't you go in and see whats taking her so long you know, and thats when the two Sheriffs came up and then TINA seen em come up you know and I was really scared, and

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FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
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69. CASE NO. 78-1809

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70. CODE SECTION | 71. CRIME | 72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.) | 74. ADDRESS ☐ RESIDENCE ☐ BUSINESS | 75. PHONE

I thought they were going to shoot me, so Tina goes, "Billy, you'd better tell them that your name is Billy LEWIS. So, I told them, I go, I go, they ask Tina what's her name, and they ask Doug, and then they ask me, and I go, "Billy LEWIS." Cause they would have took me out and shot me, too.

Q. Who?

A. STANKEWITZ, man. They were driving through all kinds of dark streets. That's how come I didn't say nothing.

Q. All right, now Billy, when the police officers came up to the car, TOPPING was in the car, Tina and you were in the car...

A. Uh huh

Q. Where was STANKEWITZ?

A. Doug was on the passenger side of the front seat.

Q. He was sitting on the right front passenger seat when the police officer came up to the car?

A. Uh huh

Q. OK. Had LEWIS gotten out of the car and gone into the bar?

A. Yeah, LEWIS, and then she said...

Q. Who's she?

A. Tina goes, yeah, she goes to the officer, will you go in there and see what's taking them so long. And then she goes, that officer goes, why

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FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

don't you have your brother to go in and see. So STANKEWITZ was getting out of the car and he just opened the door and looked over and they were coming so he got back in the car, and then they got back in their car. And then that's when uh, TINA went over, and we took off when TINA was handing the gun back to STANKEWITZ. Then STANKEWITZ put it, put it right here on his lap. And then that's when we went out to Clovis to, over to someone's house to see if he got any, anymore 25 shells. And that's when, uh, someone told them out in Clovis that my Mom was uh, she, she had put a, what do you call that?

Q. A missing persons data?

A. Yeah, yeah

Q. For you?

A. Yeah. Then I told them, I go, that's why I wanted to go home, so then they took me home. That's when I told my probation officer and I told some detectives out there what happened.

Q. OK, now, BILLY, when you picked up CHRISTINE MANCHAKA, at the, what you think was the JOY, JOY, did anybody tell CHRISTINE MANCHAKA that the car was stolen, that the car was hot?

A. I think TINA did.

Q. OK, did anybody tell you who the girl with the red hair was ..

A. TINA did.

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		lk	2-15-78 0410	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
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69. CASE NO. 78-1809

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q. She did, what did she tell her?

A. TINA, I think TINA told her that got the car from Modesto, and they had brought her down with the car, and she still got in the car. But then when they brought her down, when they were bringing her down they told her to go, when we get downtown JOY, JOY we'll let you out of this car in back and then we're gonna go on our own, and go back. So when we got downtown, right there where CHRISTINA was picked up, I started getting out of the car, because they said when we got to JOY, JOY they were gonna let her have it, you know, so I started getting out of the car. Then STANKEWITZ told me to get back in the car, so I just got back in the car and I sat down, and then that's when CHRISTINE came out, let's see, yeah that's when TINA went in to get CHRISTINE, and then CHRISTINE came out, TINA got back in the car and then that's when we left.

Q. That was right before the girl was shot?

A. That was, yeah, right before.

Q. OK, now you say when you went to the SEVEN-SEAS, the time whenever the Police officers came up, that you went in to get rid of the girl's watch , is that it? Not you, but CHRISTINE and TINA went in to see about getting rid of the girl's watch?

A. Uh-uhm (YES)

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		lk	2-15-78 0430	

FURTHER ACTION ☐ YES ☐ NO

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70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q. OK, who had the watch, when they went in there, do you know?

A. CHRISTINE did.

Q. Now who gave the watch to CHRISTINE?

A. TINA

Q. What about, was there money, you said there was money taken from uh, I'm gonna call her THERESA, that's the name of the girl that was killed, OK? Now did TINA give CHRISTINE any of the money that was taken from THERESA?

A. She gave, when we made a stop at the OLYMPIC MOTEL she gave her, gave her, let's see, I think it was twenty (20)

Q. Who did?

A. Uh, TINA did.

Q. OK

A. (unintelligible)

Q. Alright, so, when the officers, do you know or not whether they ever got rid of the watch?

A. No I don't, I don't, they might of, because they dropped me in Pinedale when they left again. You know, I don't know if they got rid of it or not, because all I seen, they didn't get rid of it at the SEVEN-SEAS though.

A. You know they didn't get rid of it at the .....

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		lk	2-15-78 0450	

FURTHER ACTION ☐ YES ☐ NO

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73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A. I know that, cause they said no, nobody to buy it, so we went to Clovis and, see if they had anymore 25 shells and then they took me home, and they still had the watch, so I don't know if they got rid of it.

Q. OK, did anybody ever have any sex with the girl?

A. Huh-uh (negative)

Q. Anybody ever threaten to have any sex with the girl?

A. NO

Q. OK, now ART you have one question that I can't, right above the sexual activity, I can't read it.

Q. Uh, when you were stoped in Manteca, I believe it was, in the white Oldsmobile, uh, did STANKEWITZ have the gun on him at that time?

A. No I don't think so, I think it was inside the bag, one of those bags you carry your cloths and stuff in, I think it was in there.

Q. BILLY I wanted to ask you about (unintelligble). Now you went up to Sacramento with TINA?

A. Uh-uh (yes)

Q. OK

A. And (unintelligible) WALKER.

Q. And WILLIE WALKER, OK, now when your on your way back, uh, from Manteca, your on your way back, your on your way back from Sacramento

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		lk	2-15-78 0520	

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73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

you were in a car, an Oldsmobile, remember that white Oldsmobile?
OK, what kind of, where'd they get that car?

A. I don't know, the other guys, they had it when they came down to Fresno, when we came to Fresno.

Q. Who was in the car?

A (unintelligible)

Q. When you stoped in Manteca?

A. Alright, there was me, STANKEWITZ, TINA, and MARY, uh STANKEWITZ's mother, and this guy we call ROGER DODGER, that's STANKEWITZ's brother, andLEWIS.

Q. OK, ROGER DODGER, how old is he, about 17?

A. Yeah.

Q. Alright, and LEWIS, was there another man there about 30 or so years old?

A. Oh yeah, J.C.

Q. What's his name?

A. I don't know his name, they just started calling him J.C.

Q. OK, now BILLY, when you stoped, OK, you got stoped by the police, right

A. Uh-huh

Q. In some little town, right?

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		lk	2-15-78 0637	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -16-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A. Uh=huh

Q. The officer got everybody out of the car?

A. Uh-huh.

Q. And took you in and put you in the holding tank, holding cell?

A. They, they, yeah, they

Q. What did they do with you?

A. They had us up in the front, right there you know, and they were trying to clear it, we were sitting there for about an hour, about an hour and a half, and then they told us that, I told them that I had to use the restroom, STANKEWITZ, they took all three of us, ME LEWIS & STANKEWITZ back to use the restroom, and then, uh, they brought us out and then he, that officer comes up and says we got some good news and we got some bad news. The officer goes, well the good news is you guys can go, he says, the bad news, the car stays. He says, because we haven't got hold of your Uncle, talking about TINA's uncle, and that's all he said and then we left.

Q. Alright, BILLY, now, that was early in the morning, that was real early in the morning.

A. Uh, about 4:30

Q. Yeah, it's still dark outside. OK, now you got a whole bunch of you people, did you try to hitch-hike somewhere?

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
		lk	2-15-78 0615	

FURTHER ACTION ☐ YES ☐ NO

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REVIEWED BY	DATE

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -17-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A. Huh-uh, we just walked over, they told us where a bus depot was and we walked about 2 blocks to the bus depot, but it was closed so we sat right there in the donut shop til about 6:00 in the morning then we missed that bus, and then there was another one at 9:00 something, we missed that one, and then we missed them all the way up til about, it was about 10:00, they wanted to stay and catch the 2:00 bus.

Q. Whose they?

A. MARY, ROGER DODGER and his date. And then LEWIS goes, MARY Asked me, MARY asked me if I was going to hitch hike, I go Yeah, and then LEWIS goes (unintelligible), so STANKEWITZ and TINA they started out first. And then we started in and we got a ride, and then we got right up there and we asked them to stop and pick up them two, they said yeah, so they gave us a ride up to the freeway, and then from there..

Q. Who hitched that ride up to the freeway?

A. Me, TINA, STANKEWITZ and LEWIS, we were, well me and LEWIS asked them if they would stop up there and pick up our friends, you know.

Q. Which friends?

A. STANKEWITZ and TINA.

Q. OK, where was the guy you call ROGER DODGER, MARY STANKEWITZ AND JC.

A. They stayed at the bus stop.

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
		lk	2-15-78 0630	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE

70. CODE SECTION | 71. CRIME | 72. CLASSIFICATION

-18-

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.) | 74. ADDRESS ☐ RESIDENCE ☐ BUSINESS | 75. PHONE

Q. OK

A. They were going to wait for a bus, to come here I guess, or Sacramento.

Q. OK, did you every see them again that night?

A. (unintelligible)

Q. OK, now you, we're gonna back up again a little bit, when you were stopped by the police officer, when we asked you about the gun that STANKEWITZ had, you say it was in a bag? You think it was in a bag?

A. No it was inside of a case, I told him.

Q. OK, but whenever the officer, remember when the officer kind of searched people, you know when they stopped you guys. Did the officer search you?

A. No, did the officer search us when, when we're here?

Q. No, when the officer, remember whenever the officer stopped the car in that little town, the Oldsmobile, remember the officer stopping you?

A. Uh-huh

Q. And taking you out of the car there?

A. Uh-huh.

Q. Were you searched then?

A. No, no

Q. Did they take you to the police station after that?

A. Yeah.

REPORTING OFFICERS | RECORDING OFFICER | TYPED BY lk | DATE AND TIME 2-15-78 0640 | ROUTED BY

FURTHER ACTION ☐ YES ☐ NO

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CAL. JUS. CR #2 SO-7

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -19-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73 VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q. OK, were you searched there?

A. No

Q. Where was the gun?

A. The gun was in that little bag I guess, that, that sack thing.

Q. What kind of sack was it?

A. It was like uh, you know that decorated sacks where you put cloths and stuff in the plastic ones.

Q. Oh you mean just a little, like a plastic bag.

A. Plastic sack with designs on it.

Q. Shopping bag?

A. Yeah

Q. OK., you mean the whole time that you, was that, STANKEWITZ was holding that gun that whole time that you were in the police station?

A. It was in the police station but he wasn't holding it, MARY was holding the bag.

Q. MARY STANKEWITZ?

A. Yeah

Q. DOUG's mother?

A. Uh-hum

Q. And she left the bag with who?

A. And then when we got over to the donut shop, DOUG, DOUG said, uh

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		lk	2-15-78 0650	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE

-20-

70. CODE SECTION | 71. CRIME | 72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.) | 74. ADDRESS ☐ RESIDENCE ☐ BUSINESS | 75. PHONE

we're not gonna wait here forever, so, they uh, he, he told LEWIS, hand him that bag. So he got the gun out and stuffed it in his pants and him and J.C. went out somewhere. They come back about an hour and a half later and says it's no good, they waited about a half hour and they went out again, they came back and they said nothing. So we were sitting there waiting for the bus.

Q. Did they have any money when they came back the secnnd time?

A. No, I don't think so.

Q. Did they ever talk about, uh, robbing a man, a Mexican man of his, of his money, shooting at him?

A. (unintelligible) all I heard was he was talking to his Mom, said they were going to go rob somebody, that's all I heard. And then I was just sitting there, I was, what I was going to do I was going to wait there for the bus, but then MARY came up with this idea saying, well you guys better, she told us she wasn't gonna let us ride on the bus, then she told us, she told, this way, well you guys better start hoofen it.

Q. MARY is DOUG STANKEWITZ's mother. OK, so now, I think I understand, you guys clear on that? You don't recall anywhere between Manteca and Chinatown, here in Fresno, of DOUG robbing a man?

A. No

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FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -21-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

Q: Firing a shot at him?

A: No.

Q: If he did you weren't there is that it?

A: Right

Q: Okay, so now I'd like, its like, its about, you've hitchhiked over to the freeway about what time is this?

A: Uh, we got a ride from uh Sacramento to Modesto, that was, that was about, lets see, uh about 10:00 or 11:00 we got a ride from Sacramento to Modesto, uh me and

Q: Wait a minute you were already you, you got stopped in a town called uh, Manteka.

A: Yeah

Q: And you had come from Sacramento in the Oldsmobile right?

A: Oh yeah, we uh we come from Sacramento in the Oldsmobile and then the Oldsmobile started messing up you know, and like and everybody said it needs oil, it needs oil so we bought some oil and put it in it and it still clanged you know so we go it needs transmission fluid, it needs transmission fluid, so Larry opened up the hood and a poured transmission fluid in, no and Larry stabbed a hole in the deal, in the can with the knife and then thats when uh the cop says STANKEWITZS, put your hands on the hood, so he did and thats when they took his (unintelligible) and then from there were at the bus, were at

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		Dlc	2-16-78	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

78-1809

DATE

-22-

10. CODE - SECTION	11. CRIME	12. CLASSIFICATION
13. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	14. ADDRESS RESIDENCE BUSINESS	15. PHONE

A: the bus stop and the bus stop was closed so we went to the Donut shop and we stayed there from about two or three hours and then from there we moved to the bus stop in the morning and we were sitting around there for about three or four hours and then thats when me, Stankewitz, TINA and LEWIS started hitchhiking.

Q: Where did you hitchhike to?

A: From that little town we hitchhiked to Modesto.

Q: You hitchhiked to Modesto. Now what time did you get to Modesto?

A: Uh, we got there about 1:00 or 2:00

Q: Okay, and what kind of a car did you get a ride in?

A: Uh, lets see, a brown truck, I think it was a Dodge.

Q: Okay, did you talk to a man at all.

A: Nah, me and LEWIS were in the back.

Q: Was there anything unusual about the truck.

A: NO

Q: I mean was ah, was it a new truck, and old truck.

A: No a new truck

Q: And was it a little pickup or a big truck?

A: Big truck. It was like uh a large pickup. It was brown and it was

Q: Where did the man go after he dropped you off?

A: Uhm, we were in Modesto, and we pulled up on the exit and he dropped us off

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		Dlc	2-15-78	

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -23-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: and then he went thataway you know, down toward, thataway.

Q: He turned off the freeway?

A: Yeah, and then uh, and then over towards this side so me and uh LEWIS said we'll keep on hitchhiking cause see, so we stuck our thumb out we needed to get a ride.

Q: Let me, let me ask, let me back up and ask you , he turned thataway you said, you mean he turned, he took the right right exit off the freeway.

A: Yeah

Q: Okay. In Modesto?

A: Mhmm (positive)

Q: What'd the man look like?

A: I dont, I didn't even look at him. We were way in the back, in the back of the truck.

Q: Okay, do you know, do you have any idea wether he was Mexican, uh

A: He was white

Q: He was white?

A: Yeah, when he stopped and pulled over I seen his face was, I don't know what he looked like, I know he was a white guy though.

Q: Could you tell wether or not he was a young man an older man, was he did he have long hair, short hair, anything about him.

A: He had short hair, sorta like his.

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -24-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE. ☐ BUSINESS	75 PHONE

Q: Like um, Detective Leans?

A: Mhmm

Q: Okay, so when you were dropped off there, what did you do?

A: We just started hitchhiking down the freeway, and DOUG looks down at us and goes like this and goes like that.

Q: You mean he motioned with his head for you to come over to him,

A: Yeah so we walked up there to where, we walked across the freeway, to that store K-Mart and then he told us first were right here and then the little, the other thing like right here, me and LEWIS was standing here and he told us to wait here don't move, so TINA and him were walking through the parking lot and they walked all around K-Mart parking lot, so I told him come on lets go over to hitchhike, me and LEWIS did, so me and LEWIS started walking and they were right behind us so, we started hitchhiking again and he called us back up again and then we came back and we started looking around this other deal other parking lot and there was no, me and LEWIS was back over hitchhiking, they were right behind us and it started raining real hard so we went back and thats when I was standing, you know, in fron of K-Mart right there by a telephone, and then thats when that lady walked out, uh, that one that got shot. She walked out and uh TINA was walking right behind her and then STANKOWITZ was walking on the other side of the road, so when they, when she got in the car she didn't get time to shut the door yet. TINA had pushed her

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		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

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CAL. JUS. CR #2 SO-7

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -25-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: over and that girl was honking her horn and then STANKOWITZ went around this side and then LEWIS got in an unlocked the door, and then I was still standing there they had her in the car and everything and then they kept calling my name, come on, come on, you need to walk, so I didn't wanta walk so I went over and got in the car I didn't see nothin, I didn't do nuthin.

Q: Did you see STANKOWITZ with the gun? Whenever the girl got in the car? When they forced, when TINA forced the girl into the car?

A: Yeah

Q: STANKOWITZ had the gun?

A: Mhmm (positive)

Q: What did LEWIS have?

A: LEWIS had that knife.

Q: He had that knife?

A: Yeah

Q: Okay.

A: What do they got me in here for anyway?

Q: Well the whole point is , is uh Billy to be honest with you uh because uh everybody who is involved in a, in a trial, in the murder of the girl, thats why your here, were trying to weed through this to see who did what when.

A: Ididn't do nuthin man, I was just settin back.

Q: Well I understand you were you know, that you were in the car, and that

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FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -36-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

you didn't shoot the girl or anything like that, I understand all that, but uh, I want you to understand that what were trying to do is were trying to go through this and figure out what happened, okay, and were trying to make that decision as reasonably as we can, and as fairly as we can.

A: So when will all this be cleared up?

Q: Well, I don't know how long its gonna take, us Billy, we gonna go talk to some other people, and see whats going on. Billy, what happened to your uh what happened to your lip?

A: Uunintelligible)

Okay, we finished side one of the tapes, starting side 2.

Q: Alright now, Billy uh when the girl was shot you previously stated that uh Stankowitcz made a statement, uh to the effect that he really, really dropped her, and LEWIS said something?

A: Yeah, yeah LEWIS goes man you dropped her then he started laughing.

Q: LEWIS laughed?

A: Yeah

Q: How about STANKOWITCZ?

A: STANKOWITCZ was laughing anyway. He's physco

Q: So what about the, did they talk about it anymore after it was done? After the girl had been shot? How about you, did you say anything?

A: I told them, I go you know it was cold, don't talk about it man, its over

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		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -27-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: Thats all I said.

Q: What about TINA?

A: TINA didn't say nuthin. Told CHRIS she outa sell that watch

Q: What did CHRIS say to her.

A: We went over to Seven Seas, and we went over there to try and sell it and then we went over to CLOVIS and dropped me off.

Q: Okay, I think I've finished my questions.

Q: Billy, at anytime when they took the young lady out of the car where was she at in the back seat?

A: Mhmm (positive)

Q: When they took her out and you saw what transpired out there uh what did TINA and CHRISTINE say at that time?

A: They didn't say nuthin, TINA was sitting there getting ready to drive off, I guess. Thats when LEWIS came came walking up to the car, and STANKOWITZ shot her and then they they got in the car and then TINA just drove off and then DOUG goes, drive slow, drive slow somebody will think something, so she just drove off.

Q: But they hadn't uh, she didn't say anything about the, when they took her out of the car. Did CHRISTINE say anything?

A: No, I don't think so.

Q: You can't recall anything?

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FRESNO COUNTY SHERIFF'S DEPARTMENT
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69. CASE NO. 78-1809

DATE _____ -28-

70. CODE SECTION	71. CRIME	72. CLASSIFICATION

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: No

Q: Okay, yeah uh, during the course of the events from the time of the kidnapping of the girl there in Modesto, till the time of the killing, had you or any other member of the party involved in this thing been drinking?

A: No

Q: You hand't had anything to drink? You didn't see anybody else drink?

A: No, till after

Q: After, okay. After that time, up till that time again, from the time of the kidnapping to the killing of the girl, did you see anybody take any narcotics. Actually see anybody see anyone take narcotics? Anybody smoke any marijuana?

A: No

Q: Nothing, everybody was straight?

A: Mhmm

Q: Your shaking your head you mean no you didn't see anything

A: That what, no I didn't see anything

Q Okay

A: But they woulda, they woulda in the motel, I don't know what they did up there.

Q: But you did not personally see any member of this party that was involved in the killing of this girl take any alcohol or drugs in your presence?

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		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

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FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -29-

70 CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: No

Q: And neither did you?

Q: When they came back from the Olympic Motel Billy were they acting alright?

A: Nah, they were acting kinda goofy to me.

Q: What do you mean kinda goofy?

A: They were, she was driving crooked, and she was closing her eyes every once in awhile,

Q: TINA

A: Yeah, and then DOUG would do the same thing, so I don't know

Q: Yeah, but you, I mean

A: I, I can't say they took anything, to me it looked like they did, I just can't say anything, I didn't see em.

Q: They didn't say anything?

A: Mhmm, they didn't, they had to go pick up in Calwa.

Q: So it was your impression they hadn't even scored, they hadn't been able to buy any yet, is that what you assumed?

A: I think they got some at the Olympic Motel, but I think they was just using Calwa for, to do her in there, you know, uh,

Q: But they said that they were gonna go score in Calwa.

A: Yeah

Q: Who said that?

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		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

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CAL. JUS. CR #2 SO-7

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809

DATE _____ -30

70. CODE SECTION	71. CRIME	72. CLASSIFICATION	
73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)		74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE

A: :DOUG and CHRIS. DOUG asked CHRIS "you know of any other place?" and then CHRIS goes yeah in Calwa.

Q: DOUG asked CHRIS do you know of any other place?

A: Yeah, and she said Calwa so they already had it planned out when they came, when they were walking down the stairs.

Q: Where they were going out there to get something and uh they decided to kill her along the way.

A: Mhmm

Q: Okay, I don't have any more questions.

The time is uh 1035 hrs. Today is the 11th February, 1978. Uh this is case#78-1809 and this interview is conducted in Room 2 at Juvenile Hall Present is Detective Tom Lean, uh Mr. James Ardiaz, District Attorneys Office and myself Christensen. Okay were gonna shut off the tape.

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
		Dlc	2-15-78	

FURTHER ACTION ☐ YES ☐ NO

COPIES TO: ☐ DETECTIVE ☐ GII ☐ JUVENILE ☐ PATROL ☐ DIST. ATTNY. ☐ _____ OTHER ☐ S.O./P.D. ☐ _____ OTHER

REVIEWED BY | DATE

EXHIBIT 4aa

CRIMINAL DOCKET

MUNICIPAL COURT, FRESNO JUDICIAL DISTRICT
COUNTY OF FRESNO, STATE OF CALIFORNIA

CASE NO. F 32495

THE PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff,

vs.

DOUGLAS RAY STANKEWITZ

DOB: 5-31-58

Defendant(s)

Charge- a felony, to-wit:
PC 187, CT 1
PC 211, CT 2
PC 209(b) CT 3
First Amended Complaint filed - see below
Complainant D. SHIPMAN

Bail (cash) (bond) $
Rec.#
Furnished by
Address
Cited for

Attorney for Defendant Public Defender

☐ Retained by Defendant
☒ Appointed by Court - Paid $
Date

DATE 1978	PROCEEDINGS
	Complaint Filed. Warrant issued. ~~(City)~~ (County) Bail Set: $ ~~$20,000.00~~ No bail
2-10-78	RECORD OF ARREST FILED. DN
2-14-78	First Amended Complaint filed:
	Count 1 - PC 187
	Count 2 - PC 211
	Count 3 - PC 209(b)
	Count 4 - PC 211
	Count 5 - PC 209(b)
	Count 6 - PC 664/187
	I, EVERETT H. LONGSTAFF, ... JUDICIAL DISTRICT, COUNTY OF FRESNO, STATE OF CALIFORNIA, DO HEREBY CERTIFY THE FOREGOING TO BE A FULL TRUE AND CORRECT COPY OF THE ... IN THE ABOVE ENTITLED ACTION. WITNESS MY HAND AND SEAL OF THIS COURT THIS 21st DAY OF October, 1978. EVERETT H. LONGSTAFF, CLERK BY [illegible] DEPUTY (MUNICIPAL COURT FRESNO COUNTY CALIF.)
2-14-78	Minute order filed. Defendant arraigned, pleads not guilty and matter set for Preliminary Hearing on February 27, 1978 at 9:15 a.m. in Block M. Defendant held in custody without bail. Remanding order issued. (ek)
	JAMES V. PAIGE, Judge
FEB [illegible] 1978	Report of Honor Defense Officer filed. Defendant ... released on his own recognizance.
	A. D. CALTON
2-24-78	MOTION FOR LINEUP, DECLARATION AND ORDER FOR LINEUP and ORDER signed & filed. (lk)

FMC-410

DATE	Proceedings Continued
2-27-78	Minute order filed. Counsel moves witness Jesus Marez not be allowed in the Courtroom until after he views the lineup this afternoon. Motion granted. This matter is continued for Preliminary hearing to February 28, 1978 at 8:00 a.m. in Block M.
	Defendant held in custody without bail.
	Wm D. CARTON
	Judge
2-28-78	Minute order filed. Witness Patricia Hernandez given immunity by the District Attorney. Court ordered defendant held to answer to Count 1 - PC 187, Count 2 - PC 211, Count 3 - PC 209(b), Count 4 - PC 211, Count 5 - PC 209(b) and Count 6 - PC 664/187. Defendant to appear in Superior Court on March 17, 1978 at 9:30 a.m. in Department #6.
	Defendant held in custody without bail.
	Commitment held to answer issued. rac
	Remanding order filed. rac
	Wm D. CARTON Municipal Judge Done in open Court, this 28 day of Feb., 1978 Attest: Everett H. Longstaff, Clerk. By L. Leach, Deputy Clerk
3-3-78	Papers filed in Superior Court. lt
	Superior Court Case No. 227015-5.
3-21-78	Exhibits given to Dep. Leon.(rac)
3/16/79	Copies of file made for State Public Defenders Office. (sh)
5-8-79	Witness fees in the amount of $42.40 paid to Gerald Pawlowski. (mj)
5-8-79	Witness fees in the amount of $24.00 paid to Nancy Pawlowski. (mj)

EXHIBIT 4bb

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO. 78-1809 78-39-26

Follow Up

FPD No. 78-5819

DATE

70. CODE SECTION	71. CRIME	72. CLASSIFICATION
187 PC	Homicide	

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE
GREYBEAL, Theresa		

RO contacted Det. TOM LEAN at 1840 hours on 2-9-78, on the first floor of Fresno Sheriff's Department Headquarters.

Det. LEAN requested RO transport suspect DOUGLAS STANKEWITZ from the holding facility on Headquarters first floor to Valley Medical Center. Det. LEAN provided RO with a court order signed by Judge ARMANDO RODRIQUES ordering Valley Medical Center (VMC) to take a blood sample from suspect STANKEWITZ.

RO took custody of suspect STANKEWITZ and transported him to VMC. The blood sample was taken in RO's presence by the lab technician at 1920 hours. The technician signed and dated the sample and RO took the sample of blood into custody.

RO watched the technician take the blood sample from suspect STANKEWITZ' left arm at the vein in the inner elbow.

RO returned the suspect STANKEWITZ to Fresno Sheriff's Department Headquarters Identification Bureau.

RO personally placed the sealed, signed and dated envelope containing the suspect's blood sample into the Identification Bureau evidence refrigerator.

RO escorted suspect STANKEWITZ to the Breathalyzer Room, where Deputy JACK DUTY of the Identification Bureau took color photographs of the blood sample site on suspect's inner left elbow. The photos were taken at 1945

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
T. Ronlake	Same	vk	2-10-78 0900	

FURTHER ACTION ☐ YES ☐ NO

COPIES TO: ☐ DETECTIVE ☐ CII ☐ JUVENILE ☐ PATROL ☒ DIST. ATTNY. ☒ OTHER Fresno PD ☐ SO./P.D. ☐ OTHER

13/

REVIEWED BY	DATE
Lt. Magarian	2-10-78

FRESNO COUNTY SHERIFF'S DEPARTMENT
Fresno, California

69. CASE NO.
78-1809
78-39-26

-2-

DATE

70. CODE SECTION	71. CRIME	72. CLASSIFICATION
187 PC	Homicide	

73. VICTIM'S NAME - LAST, FIRST, MIDDLE (FIRM IF BUS.)	74. ADDRESS ☐ RESIDENCE ☐ BUSINESS	75. PHONE
GREYBEAL, Theresa		

hours. RO then escorted the suspect to the jail and turned him over to jail personnel at 1950 hours.

REPORTING OFFICERS	RECORDING OFFICER	TYPED BY	DATE AND TIME	ROUTED BY
T. Ronlake	Same	vk	2-10-78 0901	

FURTHER ACTION ☐ YES ☐ NO

COPIES TO: ☐ DETECTIVE ☐ CII ☐ JUVENILE ☐ PATROL ☐ DIST. ATTNY. ☐ OTHER ☐ S.O./P.D. ☐ OTHER

REVIEWED BY 132

DATE

CAL. JUS. CR #2 SO-7

EXHIBIT 4cc

T. C. NELSON, JR., M.D.
J. W. NELSON, M.D.
PATHOLOGISTS

R. K. LANSING, Ph.D.

P. O. BOX 11866
2111 E. DAKOTA
TELEPHONE (209) 226-3550

Pathological and Clinical Services

FRESNO, CALIFORNIA 93775

April 17, 1978

Fresno Sheriff's Office
2200 Fresno St.
Fresno, Ca. 93721

NAME: Douglas Stankowitz

SPECIMEN: Blood

REQUEST: Alcohol and Morphine

DESCRIPTION: Specimen consisted of 8 ml blood in a rubber stoppered tube labeled "Douglas Stankowitz, taken by J.R.R., February 9, 1978, 1920 hrs., witnessing officer T. B. Ronlake". The specimen was sealed in an envelope labeled "Doublas Stankowitz offense PC 836, PC 187, submitting agency Fresno Sheriff's Dept. Specimen taken at VMC by Joseph R. Robinson, February 9, 1978, 1920 hrs., witnessing officer T. B. Ronlake. Blood for alcohol and morphine determination".

REPORT:

Ethyl Alcohol	= Negative
Morphine by Radio Immunoassay	= Negative

T. C.Nelson, Jr., M.D.

TCN:ss

EXHIBIT 4dd

FRESNO COUNTY SHERIFF'S DEPARTMENT
REQUEST FOR EVIDENCE EXAMINATION

NO. 271

DATE 2-10-78
TIME 1454

PLEASE TYPE OR PRINT

CRIME CLASSIFICATION PC 187, 207, 211, CVC 10851
VICTIM (Suspect) T. GRIMSEAL
I.D. OFFICER

DATE COMMITTED 2-8-78
CASE NO. 78-1809

ITEM NO.	DESCRIBE EACH ITEM OF EVIDENCE TO BE EXAMINED
(1)	VIAL OF BLOOD FROM VICTIM GRIMSEAL
(2)	VIAL OF BLOOD FROM SUSP. D. STANKEWITZ
(3)	BRN BAG, CONTAINING SUSP D. STANKEWITZ'S CLOTHING.

TYPE OF TESTS, ANALYSIS, OR EXAMINATION REQUESTED

Comparitive Blood Tests of Victim to Susp's + To Susp STANKEWITZ STANKEWITZ Clothing.

INVESTIGATING OFFICER T. KAW
AGENCY FSD

FOR LABORATORY USE ONLY

EXAMINATION RESULTS The small bloodstain found on the tee shirt of D. Stankewitz was found to be human blood. The stain proved to be insufficient in amount for sucessful typing.
3-16-78

EXAMINER'S SIGNATURE: Allen J Sanders

CO 134

EXHIBIT 4ee

April 21, 1978

Phillip Reynolds
Institute of Forensic Sciences
2945 Webster Street
Oakland, California 94609

Dear Mr. Reynolds:

I am sending this letter pursuant to our telephone conversation of April 20, 1978, wherein we discussed the possibility of you preparing a report setting forth the current view of the literature on the subject of the effect of the passage of time on heroin in the blood of a human being. The court has authorized you to prepare a confidential report, and further authorized a fee not to exceed $75.

The injection of heroin into my client occurred approximately 20 to 24 hours prior to the drawing of blood by the technicians at Valley Medical Center in Fresno California. You will finddenclosed a copy of the lab report setting forthethe analysis of the defendant's blood.

I would appreciate expeditious treatment of this matter and will be in further contact with you if it appears at all likely that testimony will be required at the trial of this matter. Please send yourbill directly to the office of the Public Defender with as much itemization as possible.

Very truly yours,

MELVIN W. NITZ
PUBLIC DEFENDER

By _____
Salvatore Sciandra
Deputy Public Defender

SS:MP

Enclosure

EXHIBIT 4ff

INSTITUTE OF FORENSIC SCIENCES

2945 WEBSTER STREET • OAKLAND, CALIFORNIA 94609 • PHONE: (415) 451-0767

GEORGE S. LOQUVAM, M.D., Director

SA1
5-3

April 26, 1978

Salvatore Sciandra
Deputy Public Defender
Room 402, Courthouse
Fresno, CA 93721
CONFIDENTIAL

Just says doesn't know

Re: Douglas Stankowitz

Dear Mr.Sciandra:

I have reviewed the report from the Pathological and Clinical Services Laboratory concerning the analysis on the blood sample from Mr. Douglas Stankowitz.

Our entire experience in Alameda County involving analysis and interpretation of blood morphines has been gained using a method which will determine only the free unbound morphine in an individuals blood for a very short time after the ingestion of either heroin or morphine. This report indicates that morphine was done by a procedure known as radioimmunoassay and found to be negative some 20 to 24 hours after an injection of heroin. Neither Dr. Allan B. McNie, nor myself feel competent to render an exact opinion as to whether analysis of both free and conjugated morphine done by a method such as radioimmunoassay would or would not be able to detect a dose after 20 to 24 hours.

Additionally, I am unable to find data to support or deny the capability of this immunoassay procedure to detect morphine after extended periods of time. There is a laboratory in Southern California, the Orange County Coroner's Laboratory, run by Robert Cravey, that does run blood morphines by immunoassay procedures. Mr. Cravey has indicated to me that he does not have good, specific data as to how long his method would detect morphine after an ingestion of either heroin or morphine

In light of the above, I feel that we would not be able to aid you in this case since the analysis was performed by a method totally different than the one which we currently use at the Institute.

Hoping this has clarified some of the issues for you, I remain,

Sincerely yours,

Philip C. Reynolds,
Chief Toxicologist

PCR:lg

EXHIBIT 4gg

WILLIAM A. SMITH 35715
District Attorney
JAMES A. ARDAIZ 60455
Chief Deputy District Attorney
County of Fresno
Room 701 - County Courthouse
Fresno, California 93721

Telephone: (209) 488-3141

ATTORNEY FOR PLAINTIFF

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF FRESNO

THE PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, vs. DOUGLAS RAY STANKEWITZ, MARLIN E. LEWIS, CHRISTINA G. MENCHACA and TEENA E. TOPPING, Defendants.	MUNICIPAL COURT CASE NO. F-32495 DA FILE: 78-1060 PEOPLE'S MOTION FOR AN ORDER TO DEFENDANTS, DOUGLAS RAY STANKEWITZ, MARLIN E. LEWIS, CHRISTINA G. MENCHACA AND TEENA E. TOPPING, TO SUBMIT BLOOD SAMPLES

TO: THE HONORABLE SIMON MAROOTIAN, JUDGE OF THE SUPERIOR COURT OF THE STATE OF CALIFORNIA, IN AND FOR THE COUNTY OF FRESNO:

THE PEOPLE RESPECTFULLY MOVE the above-entitled Court for an Order to Defendants, DOUGLAS RAY STANKEWITZ, MARLIN E. LEWIS, CHRISTINA G. MENCHACA and TEENA E. TOPPING, to Submit Blood Samples to a representative of the District Attorney's Office of the County of Fresno, State of California.

A F F I D A V I T

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.

JAMES A. ARDAIZ, being first duly sworn, deposes and says:

COUNTY OF FRESNO
FRESNO, CALIFORNIA

That he is a duly qualified and acting Chief Deputy District Attorney of the County of Fresno, State of California;

That the above-entitled case against DOUGLAS RAY STANKEWITZ, MARLIN E. LEWIS, CHRISTINA G. MENCHACA and TEENA E. TOPPING, Fresno Municipal Court Case No. F-32495, charges Felony violations of sections 211, 209(b), 211, 209(b), 664/187 and 187 of the California Penal Code;

That your Affiant has been informed and believes to the best of his knowledge that the circumstances requiring such Orders are as follows:

That on FEBRUARY 9, 1978, the above-named Defendants were booked into the Fresno County Jail on the above charges;

That on FEBRUARY 8, 1978, the body of one, THERESA GRAYBEAL, was found in the CALWA area of Fresno County with a bullet wound to the head;

That on FEBRUARY 27, 1978, the above-named Defendants were Held to Answer on the charge of murdering THERESA GRAYBEAL;

That ALLEN BOUDREAU of the Fresno County Sheriff's Office informed your Affiant that what appeared to be blood had been found on the T-Shirt removed from Defendant, DOUGLAS RAY STANKEWITZ. The evidence at the Preliminary Hearing which commenced on FEBRUARY 27, 1978, supported the allegation that DOUGLAS RAY STANKEWITZ personally killed THERESA GRAYBEAL.

THEREFORE, a sample of the blood of DOUGLAS RAY STANKEWITZ is necessary to compare to the blood on his T-Shirt and a sample of the blood of the other above-named Defendants, MARLIN E. LEWIS, CHRISTINA G. MENCHACA and TEENA E. TOPPING, is necessary for comparison to the blood on DOUGLAS RAY

UNTY OF FRESNO
ESNO, CALIFORNIA

STANKEWITZ'S T-Shirt.

THE PEOPLE THEREFORE MOVE that the Defendants, DOUGLAS RAY STANKEWITZ, MARLIN E. LEWIS, CHRISTINA G. MENCHACA and TEENA E. TOPPING, be ordered to submit Blood Samples to a representative of the District Attorney's Office of the County of Fresno, State of California, for comparison of the blood on DOUGLAS RAY STANKEWITZ'S T-Shirt. Such Blood Samples shall be submitted at an appropriate time and place as determined by the Court.

POINTS AND AUTHORITIES

The examination of the bodily characteristics of a Defendant has been held to be not protected from disclosure by any privileges. Specifically, such examinations are not considered violative of the privilege against self-incrimination because they are not testimonial in nature.

> "The distinction which has emerged, often expressed in different ways, is that the privilege is a bar against compelling 'communications' or 'testimony', but that compulsion which makes a suspect or accused the source of 'real or physical evidence' does not violate it." SCHMERBER V. CALIFORNIA, 384 U.S. 757, 764.

WITKIN, in his work on evidence, reports the general rule being that of the UNIFORM RULES OF EVIDENCE, RULE 25(b), which declares that:

> "No person has the privilege to refuse to submit to examination for the purposes of discovering

"or recording his corporal features and other identifying characteristics, or his physical or mental condition." CALIFORNIA EVIDENCE, WITKIN, Section 905, Page 838 (1966).

WITKIN also cites California cases in which the rule has been applied, such as in the cases of: Examinations of a narcotics suspect's arms for puncture wounds, photographs of scars of a body and scrapings from beneath a Defendant's fingernails.

In summary, decisions of the United States Supreme Court, limiting a Defendant's Fifth Amendment Rights to "testimonial" or "communicative" evidence, but allowing use of "real or physical" evidence (such as blood tests, fingerprints and handwriting exemplars) are abundant. UNITED STATES V. MARA (1973), 410 U.S. 19; UNITED STATES V. DIONISIO (1973), 410 U.S. 1; SCHMERBER V. CALIFORNIA (1966), 284 U.S. 757. Furthermore, California Courts have shown no inclination to depart from the Federal interpretation of this self-incrimination prohibition. PEOPLE V. SUDDETH (1966), 65 C2d 543, 546.

For the above reasons, THE PEOPLE RESPECTFULLY REQUEST that the Defendants be ordered to submit Blood Samples for comparison to be made by an appropriate facility and by a qualified person selected by the Court at a time convenient to all parties.

DATED: MARCH 3, 1978, at FRESNO, CALIFORNIA.

WILLIAM A. SMITH
DISTRICT ATTORNEY, IN AND
FOR THE COUNTY OF FRESNO,
STATE OF CALIFORNIA.

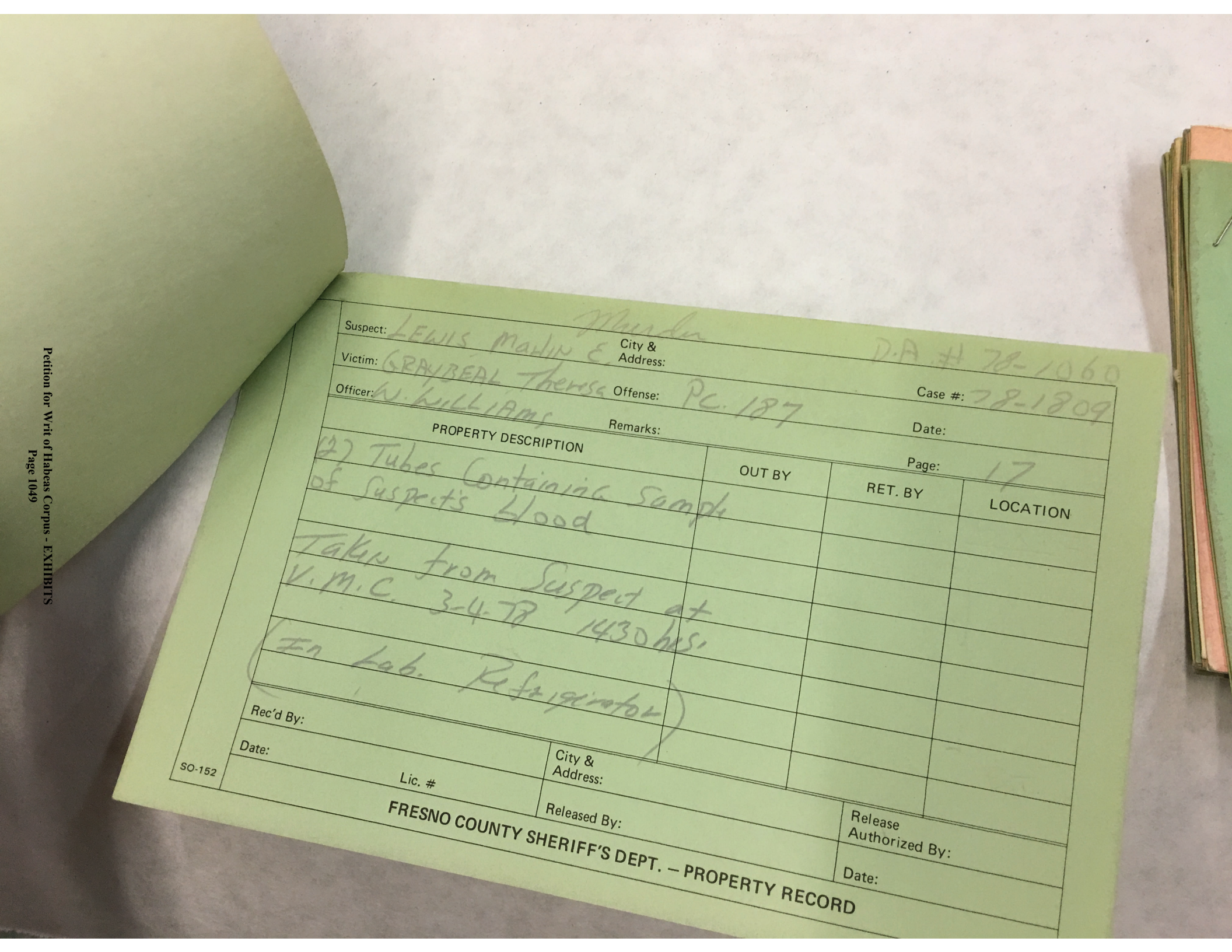
By /s/ JAMES A. ARDAIZ
JAMES A. ARDAIZ
CHIEF DEPUTY DISTRICT ATTORNEY

Subscribed and sworn to before me this 3rd day of MARCH, 1978.
(SEAL) CHERYLENE V. DRACE
NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE.

UNTY OF FRESNO
ESNO, CALIFORNIA

DA FILE: 78-1060

EXHIBIT 4hh



FRESNO COUNTY SHERIFF'S DEPT. – PROPERTY RECORD

Suspect: LEWIS Marlin E. City & Address: Merced D.A. # 78-1060

Victim: GRAYBEAL Therese Offense: PC. 187 Case #: 78-1809

Officer: W. WILLIAMS Remarks: Date:

Page: 17

PROPERTY DESCRIPTION	OUT BY	RET. BY	LOCATION
(2) Tubes Containing Sample of Suspect's Blood Taken from Suspect at V.M.C. 3-4-78 1430 hrs. (In Lab. Refrigerator)			

Rec'd By: Date: Lic. # City & Address:

Released By: Release Authorized By: Date:

SO-152

[illegible] DA 78-1060

Suspect: Menchaca Christina	City & Address:	Case #: 78-1809
Victim: Graybeal Therese	Offense: PC-187	Date: 3-4-78
Officer: W. Williams	Remarks:	Page: 17

PROPERTY DESCRIPTION	OUT BY	RET. BY	LOCATION
(2) Tubes Containing			
sample of Suspect's			Lab-Frig
blood.			
Taken from Suspect			
at U.M.C. 3-4-78 1320 hrs.			
IN REFRIGERATOR IN LAB			

Rec'd By:	City & Address:	Release Authorized By:
Date: Lic. #	Released By:	Date:

[illegible]

FRESNO COUNTY SHERIFF'S DEPT. – PROPERTY RECORD

Suspect: STANKEWITZ, Douglas R. City & Address: Madera Case #: 78-1809 D.A.# 78-1060

Victim: Graybeal, Theresa Offense: PC-187 Date: 3-4-78

Officer: W. Williams Remarks: Page: 17

PROPERTY DESCRIPTION	OUT BY	RET. BY	LOCATION
(2) Tubes Containing Sample of Suspect's Blood			Hal-Frig
Taken from Suspect at V.M.C. 3-4-78 1430 hrs.			
(In Lab. Refrigerator)			

Rec'd By:	City & Address:	Release Authorized By:
Date: Lic. #	Released By:	Date:

SO-152

FRESNO COUNTY SHERIFF'S DEPT. – PROPERTY RECORD

EXHIBIT 4ii

Transcript of voice mail in response to December 17, 2012, to the Fresno Sheriff's Office; Attn: Forensic Services Requests at 2200 Fresno Street, Fresno, CA 93721:

Christine, this message is in regard to Fresno County Case No. 78-1809, Subject: Douglas Stankewitz. We received a letter requesting a blood specimen. I just spoke to the Fresno County Sheriff's Office Forensic Lab. They indicated that sample was sent to a lab for analysis in April of 1978 and it was not returned to them. If you have any further questions, please feel free to call the Fresno County Sheriff's Forensic Lab. Their number is (559) 233-0308. Again this is in reference to Fresno County Case No. 78-1809. Thank you. Time stamp: January 24 at 10:22 a.m. [2013 - in response to the letter sent 12/17/2012 to the Fresno Sheriff's Office]

EXHIBIT 4jj

Forensic Analytical™
Crime Lab

Summary Laboratory Report

Hon. Arlan L. Harrell Fresno County Superior Court Criminal Department, Central Division 1100 Van Ness Avenue Fresno, CA 93724 Curtis Briggs, Esq. Pier 5 Law Offices 3330 Geary Boulevard San Francisco, CA 94118 Alexandra Cock, Esq. 2171 Francisco Boulevard, Suite D San Rafael, CA 94901 Amythest Freeman, ADA Fresno County District Attorney's Office 2220 Tulare Street, Suite 1000 Fresno, CA 93721	Report Date: September 2, 2020 FACL Case #: 20190105 Client #: 21201 Client Case #: CF 78227015

Case Name: CA v Douglas Stankewitz

Report Type: Evidence Examination and DNA Analysis

Purpose of Investigation

Pursuant to Mr. Stankewitz's request and subsequently, Judge Arlan Harrell's Order of May 11, 2020 certain items of clothing of defendants Douglas Stankewitz, Christina Menchaca, Teena Topping, and Marlin Lewis were examined for blood in an attempt to determine whether any of the specified items were stained with blood of victim Theresa Graybeal.

Summary of Results

There is no support for the presence of blood from the victim on any of the defendants' clothing tested. However, it is unclear whether DNA from human blood was recovered from any of the apparent bloodstains tested from the defendants' clothing. Most of the defendants'

clothing stains tested were presumptively negative for blood and no human hemoglobin was detected from any of them.

All of the defendants' clothing test results from apparent bloodstains also revealed little to no DNA was recovered and the recovered DNA was extremely degraded. Dried human bloodstains contain high levels of DNA which when stored at controlled temperatures will persist for decades and the blood DNA will degrade predictably. These results may reflect deleterious environmental long-term evidence storage conditions.

Items of Physical Evidence

The following items of physical evidence were submitted to FACL by Investigator Danielle Isaac of the Fresno County, California, District Attorney's Office on June 6, 2020 via Federal Express courier:

1. Theresa Graybeal's gray coat (Item #13).
2. Theresa Graybeal's clothing (Item #14) including a blue sweater.
3. Douglas Stankewitz' clothing (Item #3) including a white t-shirt and blue corduroy pants.
4. Teena Topping's clothing (Item #18) including a pink sweater and Levi's blue jeans.
5. Christina Menchaca's (Item #19) clothing including a rust sweatshirt (sweater).
6. Marlin Lewis' clothing (Item #15) including a blue/red shirt and brown shoes.

Evidence Examination

Table 1 below summarizes the sampling and the recovery and utilization of DNA from each specimen examined in this investigation.

<u>Graybeal's Clothing: #1 Gray coat (Item #13) and #2-1 blue sweater (Item #14)</u>

Cuttings from concentrated bloodstains on the Graybeal gray coat inside upper back lining (#1A) and blue knit cowl-neck sweater inside upper back (#2-1A) were utilized as secondary reference blood specimens for the victim. DNA from the blood from the Graybeal sweater was taken forward though analysis. A profile expected to be unique to one person who has ever lived was developed from this DNA.

#3 Douglas Stankewitz' Clothing (Item #3): #3-1 White t-shirt and #3-2 blue corduroy jeans

Twenty-one red/brown and rust colored stains scattered over the t-shirt were directly tested[1] with *ortho*-tolidine and hydrogen peroxide, a sensitive presumptive test for blood; of these, six stains along the right front and back side gave positive indication as blood. About half of three of these six (#3-1A/B/D) and most of a fourth (#3-1C) were sampled as cuttings for additional testing. Due to little or no DNA recovery, samples #3-1A,B, and D on the t-shirt were abandoned. The remainder of t-shirt area C was removed and combined with the initial sample (#3-1C) as #3-1.

Fifteen red/brown and rust colored stains scattered over the blue corduroy jeans were directly presumptively tested for blood; of these, a stain on the right lower leg (#3-2A) and a smear on the right rear pocket (#3-2B) gave positive indication as blood. About half of area A and all of area B were sampled as cuttings for additional testing. Due to no detectable DNA recovery sample #3-2B was abandoned. The remainder of jeans area A was sampled and combined with the initial sample (#3-2A) as #3-2.

#4 Teena Topping's Clothing (Item #18): #4-1 Pink sweater and #4-2 Levi's blue jeans

Three of a cluster of red/brown colored stains on the left sleeve, an orange-colored stain on the inside front chest area, and two small dingy stains on the lower outside left front of the sweater were directly presumptively tested for blood with negative results. Two of the darkest/most concentrated-appearing stains of the left sleeve cluster (#4-1A and B) were sampled as cuttings. Due to very low DNA recovery, most of the remainder of this stain cluster was sampled and combined with the initial samples (#4-1A/B) as #4-1.

A large (ca 2cm x 2cm) red/brown stain on the outside right front upper thigh area (#4-2A) and a small drop-like red/brown stain on the outside right front leg (#4-2B) of the blue jeans were directly presumptively tested for blood with negative results. About half of each stained area was sampled as cuttings for additional testing. Due to very low DNA recovery and small portion of area B stain remaining, sample #4-2B was abandoned. Due to very low DNA recovery a second large portion of the remainder of jeans area A was sampled and combined with the initial sample (#4-2A) as #4-2.

[1] Direct presumptive testing means a small portion of the stain itself is excised and tested; indirect testing means the stain is swabbed/scraped with filter paper and whatever is transferred to the paper is tested and is considered to be representative of the stain.

#5 Christina Menchaca's Clothing (Item #19): #5-1 Rust-colored sweatshirt/sweater

Three dark stains and one dirty smear on the sweater were directly presumptively tested for blood with negative results. Of the three dark stained areas, a portion of a large stain on the right shoulder (#5-1A), and all of smaller stains on the left upper sleeve (#5-1B) and the left lower sleeve (#5-1C) were sampled as cuttings for additional testing. Due to very low DNA recovery and no remaining stain material, samples #5-1B/C were abandoned. A second large portion of the remainder of sweater area A was sampled and combined with the initial sample (#5-1A) as #5-1.

#6 Marlin Lewis' Clothing (Item #15): #6-1 Blue/red shirt and #6-2 brown shoes

A large dark brownish stain on the outside front center area (#6-1A) of the shirt was directly presumptively tested for blood with negative result. A large portion of this stain was sampled as a cutting for additional testing. Due to very low DNA recovery, another large portion of stain area A from the shirt was sampled and combined with the initial sample (#6-1A) as #6-1.

A dark brown drop stain on the top of the right shoe toe area (#6-2-1A) was directly presumptively tested for blood with negative results. A similar but smaller dark brown drop stain on the top of the left shoe toe area (#6-2-2A) was not presumptively tested. All of both stains was sampled as cuttings for additional testing. Due to no detectable DNA recovery, samples #6-2-1A and #6-2-2A were abandoned.

Table 1. Recovery and Utilization of DNA from Clothing Samples

FACL Item No.	Item and Sample Description	Presumptive indication of blood	Human hemoglobin detected[2]	Human DNA recovered, ng	DNA Typing Assay, ng
1A	Graybeal gray coat lining, saturating bloodstain	strong	yes, trace	2.5	not attempted
2-1A	Graybeal blue sweater, saturating bloodstain	strong	yes, weak	196.5	1.5
3-1	D. Stankewitz white t-shirt, all of stain area C	slow/weak	no	0.053	all
3-2	D. Stankewitz blue pants, right lower leg, all of stain area A	slow/weak	no	0.006	not attempted

[2] Human hemoglobin is assayed with a sensitive commercial immunochromatographic test card by generating an aqueous extract of the sample before digestion for DNA recovery.

FACL Item No.	Item and Sample Description	Presumptive indication of blood	Human hemoglobin detected[2]	Human DNA recovered, ng	DNA Typing Assay, ng
4-1	Topping pink sweater, left sleeve, most of stain cluster area A	no	no	0.020	all
4-2	Topping blue jeans, large upper right leg stain area A	no	no	0.140	all
5-1	Menchaca blue sweater, right shoulder stain area A	no	no	0.024	all
6-1	Lewis blue/red shirt, most of front center stain area A	no	no	0.018	all
6-2-1A	Lewis right brown shoe stain A	no	not tested	undetected	not attempted
6-2-2A	Lewis left brown shoe stain A	not attempted	not tested	undetected	not attempted

Genetic Analysis of DNA

In this case several loci, or genetic markers, were amplified using the polymerase chain reaction [PCR] and subsequently typed using the **Investigator 24plex QS** genotyping system. The STR loci typed with 24plex are known as **TH01**, **D3S1358**, **vWA**, **D21S11**, **TPOX**, **DYS391**, **D1S1656**, **D12S391**, **SE33**, **D10S1248**, **D22S1045**, **D19S433**, **D8S1179**, **D2S1338**, **D2S441**, **D18S51**, **FGA**, **D16S539**, **CSF1PO**, **D13S317**, **D5S818**, **D7S820**, and amelogenin, a gene for sex determination. This system also includes one Y-STR marker, **DYS391**, to aid in determining the number of males in a mixed result.

Genetic analysis of the specimens in this case involved the following essential steps:

1. Evidence samples were digested with SDS and proteinase K.
2. DNA was extracted from sample digests with the EZ1 Advanced XL robot and concentrated via centrifugal filtration.
3. The various genes described above were amplified using the Polymerase Chain Reaction [PCR].
4. The STR genes and amelogenin were typed using capillary electrophoresis.

Interpretation of evidence profiles was assisted/supplemented with STRmix™ probabilistic genotyping software. STRmix™ uses laboratory specific parameters (STR kit, amplification protocols and capillary electrophoresis platform) and the quantitative allele peak data from an

electropherogram in a Markov Chain Monte Carlo (MCMC) analysis to interpret contributor profiles in a DNA result. During MCMC analysis the likely genotypes of the individual contributors to a DNA profile are determined and given a weight of probability. The more likely genotypes of the contributors to a DNA profile, as determined by this analysis, will have higher weights.

Comparison of a reference profile to an interpreted (or deconvoluted) evidence profile is performed using a likelihood ratio (LR), which assesses the probability of two alternative hypotheses. Typically, the hypothesis of the prosecution (H_p) includes the person of interest (POI) whereas the alternative hypothesis (H_d) attempts to explain the data in the absence of the POI as a contributor. The LR of any given proposition will indicate which hypothesis has more support.[3] In general, a LR > 1 favors H_p and a LR < 1 favors H_d.

FACL likelihood ratio range:

Likelihood ratio	Verbal equivalent
≥ 1 million	Very strong support for POI inclusion
10,000 to 999,999	Strong support for POI inclusion
1000 to 9,999	Moderate support for POI inclusion
2 to 999	Limited support for POI inclusion
1	Uninformative
> 0.001 to < 1 (1/LR = 2 to 999)	Limited support for POI exclusion
0 to ≤ 0.001 (1/LR ≥ 1000)	POI is excluded

Results

1. A single source DNA STR profile comprised of at least sixteen genotypes was developed from DNA from blood on the Theresa Graybeal sweater. This profile is expected to be unique.
2. Weak, partial, and highly degraded mixture profiles were obtained from the #3-1 Stankewitz t-shirt area C, the #4-1 Topping sweater area A, the #4-2 Topping jeans area A, the #5-1 Menchaca sweater area A, and the #6-1 Lewis red shirt area A samples. Each of these results were analyzed with STRmix testing the proposition that Theresa Graybeal

3 The FBI expanded CODIS core STR loci frequency data for the populations used in the LR calculations at FACL, provided with STRmix™, is described in: Population data on the expanded CODIS core STR loci for eleven populations of significance for forensic DNA analyses in the United States. *Forensic Science International: Genetics* 25 (2016) 175-181. The ABI STR loci frequency data used for LR calculations at FACL is from the Applied Biosystems GlobalFiler™ PCR Amplification Kit User Guide, Publication Number 4477604, Revision E.

is a contributor. These comparisons provided no support for this proposition. The resultant likelihood ratios are either neutral in this regard (LR = 1) or provide some support for the proposition that Graybeal is not a contributor to any of these results.

3. The STRmix analyses are summarized in Table 2 below. For example, the DNA recovered from the #3-1 Stankewitz t-shirt area C stain was determined to originate from at least three[4] contributors. This typing result was analyzed with STRmix assuming three contributors. The calculated contributor proportions are approximately 42%, 38%, and 20%. Theresa Graybeal was compared to this result as a potential contributor.
4. Assuming only three contributors and Keel as one of the contributors, the DNA typing result from the #3-1 Stankewitz t-shirt area C stain is approximately seven times more likely if the DNA originated from Keel and two unknown persons than if the DNA originated from Keel, Graybeal, and an unknown person. This analysis provides limited support that Graybeal is not a contributor to this result.
5. Similarly, the DNA recovered from the #4-2 Topping jeans area A stain was determined to originate from at least two contributors. This typing result was analyzed with STRmix assuming two contributors. The calculated contributor proportions are approximately 93% and 7%. Theresa Graybeal was compared to this result as a potential contributor.
6. Assuming only two contributors, the DNA typing result from the #4-2 Topping jeans area A stain is approximately 10 trillion times more likely if the DNA originated from two unknown persons than if the DNA originated from Graybeal and an unknown person. This analysis eliminates Graybeal as a contributor to this result.
7. The remaining samples results may be described similarly using the assumed number of contributors and likelihood ratios provided in Table 2.

[4] The #3-1 Stankewitz t-shirt sample was inadvertently contaminated with a low-level of biology/DNA from the analyst Alan Keel during processing (LR = 200 billion). The STRmix result assessing Graybeal as a contributor includes Keel as a known contributor and reflects deletion of alleles at higher molecular weight genes (≥ approximately 250 base pairs) wherein only alleles possessed by Keel were detected.

Table 2. Summary of STRmix analyses testing the proposition that Theresa Graybeal is a contributor to the mixtures of DNA recovered from the various stains on the defendants' clothing

Item #	Assumed number of contributors	Likelihood Ratio	Supports the Proposition for	Verbal Equivalent
3-1 Stankewitz t-shirt	3	1/LR = 7	Keel and two unknown contributors	Limited support for Graybeal elimination
4-1 Topping sweater	2	LR = 1	Uninformative	No support for Graybeal inclusion or exclusion
4-2 Topping jeans	2	1/LR = 10 trillion	Two unknown contributors	Graybeal eliminated
5-1 Menchaca sweater	3	1/LR = 40	Three unknown contributors	Limited support for Graybeal elimination
6-1 Lewis shirt	2	1/LR = 95	Two unknown contributors	Limited support for Graybeal elimination

8. Reference specimens from persons of interest may be submitted for comparison to these defendants' clothing sample results.

Disposition of Evidence

All evidence items will be returned to the submitting agency.

Prepared by:

Alan Keel, Senior Forensic Scientist

Nancy Wilson, M.S., Forensic Scientist

The investigation described and documented herein was completed in compliance with the current ISO/IEC 17025 International Standard and FBI QAS accreditation requirements as defined by the ANSI-ASQ National Accreditation Board Forensic Testing Certificate and Scope of Accreditation (FT-0328).

EXHIBIT 4kk

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Attorneys for Defendant
DOUGLAS R. STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, vs. DOUGLAS STANKEWITZ, Defendant.	Case No. CF78227015 AMENDED MOTION FOR DNA TESTING Dept: 62

TO THE SUPERIOR COURT FOR THE COUNTY OF FRESNO, THE DISTRICT ATTORNEY FOR THE COUNTY OF FRESNO, THE SHERIFF FOR THE COUNTY OF FRESNO, AND THE CALIFORNIA ATTORNEY GENERAL:

NOTICE IS HEREBY GIVEN that the above-named defendant hereby moves the court for an order for DNA Testing.

This Amended Motion for DNA Testing is made pursuant to the Court's Order Denying Motion for DNA Testing Without Prejudice. This Amended Motion is one of many defense attempts to exonerate Stankewitz; all of which have been denied by this Court. Since 2017, Stankewitz's attorneys have found prosecutorial misconduct, including blatant tampering with evidence, including the wrong shell casings in evidence storage; evidence the police planted

the murder weapon, contrived physical evidence used to make it appear that Stankewitz was at the scene of the homicide, and many other abuses. Douglas Stankewitz has spent over 4 decades wrongfully imprisoned and to this date he has yet to obtain a fair hearing on any matter in the Fresno court.

Defense experts have examined the physical evidence in this case and that the DNA testing of the evidence sought through this motion is required by the defense as it is material to establishing the innocence of the defendant through a Writ of Habeas Corpus.

Mr. Stankewitz has a right to a fair trial, to present evidence, to effectively confront government witnesses called against him, to effective assistance of counsel, and to due process of law under the Fourth, Fifth, Sixth, and Fourteen Amendments to the U.S. Constitution and their California counterparts, which will be violated if the physical evidence is not tested.

This motion is based on:

1. the attached points and authorities;
2. the contents of the original Motion to Compel DNA Testing, attached as Exhibit 1 hereto, which includes its attendant declarations and Exhibits: of Counsel Curtis Briggs, defendant Douglas R. Stankewitz, Roger Clark, Chris Coleman and Certification for Forensic Analytical Crime Lab;
3. Honorable Judge Arlan Harrell Order Denying Motion for DNA Testing Without Prejudice, Exhibit 2 hereto;
4. Supplemental Declaration of Roger Clark, with attached List of Evidence, Exhibit 3 hereto;

5. Supplemental Declaration of Chris Coleman, with attached List of Evidence, Exhibit 4 hereto;

6. the files and records of the case;

7. and any additional argument or evidence submitted at any hearing on this motion.

Defense asks that if a hearing is held, that the defendant/petitioner be present.

Dated: November 25, 2019

Respectfully Submitted,

J. TONY SERRA
CURTIS L. BRIGGS

Attorneys for Defendant
DOUGLAS RAY STANKEWITZ

Curtis L. Briggs

By CURTIS L. BRIGGS

BACKGROUND

On April 4, 1978, defense counsel made a Motion for Discovery and Points and Authorities in Support Thereof. Discovery production was ordered by the Court on April 20, 1978. That Order is still in effect.

In February 1978, Fresno County collected clothing from the defendants and the victim, and biological evidence from the crime scene and from the body of the victim. This evidence is being stored with the Fresno County Sheriff's Office (FSO).

As stated in the Declarations of Chris Coleman and Roger Clark, they viewed all of the physical evidence in this case currently stored at the Fresno Sheriff's office and Fresno Superior Court clerk's office. As a result of their examination of the evidence, they recommended that certain items of evidence be tested for the DNA of the victim, Theresa Graybeal. The specific items are listed in their declarations. This is new evidence.

The prosecution has not produced any reports or records from 1978 – present, showing that the participants' clothing has been tested for DNA. *See* Declaration of Counsel Curtis Briggs, part Exhibit 1, Motion to Compel DNA Testing, attached.

Pursuant to CA P.C. Sect. 1054.5(b), on March 25, 2019, through informal discovery, Defense counsel sought a stipulation from the District Attorney's office for DNA testing. The District Attorney has not responded to the defense request. *See* Declaration of Counsel Curtis Briggs.

On May 1, 2019, Defendant filed a Motion to Compel DNA Testing with the Court. The Motion was served timely on the

Fresno County District Attorney and the California Attorney General. Responses, if any, were due within 90 days. Neither the District Attorney nor the Attorney General filed a response to the Motion.

With no ruling made by the Court, on September 10, 2019, Defendant filed a Petition for Writ of Mandate with the California 5th District Court of Appeal, asking the Court to direct the Fresno Superior Court to rule on the Motion.

On October 24, 2019, the Court denied the motion, without prejudice, stating that 'the declarations filed in support of the Motion lack the specificity needed for a *prima facie* showing that the evidence sought to be tested is material to the issue of Defendant's identity as the perpetrator of, or accomplice to, the crime.'

Defendant now files this Amended Motion to address the issues noted by the Court, accompanied by supplemental declarations of Roger Clark and Chris Coleman, including descriptions and pictures of the specific evidence to be tested, as well as a list of all of the evidence viewed at both the Fresno County Sheriff's Office and the Fresno County Superior Court. Defendant therefore asks the Court to grant the Amended Motion for DNA Testing.

During their examination of the evidence of this case located at the Fresno Court Sheriff's Office and Fresno County Superior Court, they observed blood stains on the clothing of co-defendants Marlin Lewis, Teena Topping and Christina Menchaca. The blood stains could be those of the victim, Theresa Graybeal. Defendant Stankewitz has maintained his innocence in the murder

for over 41 years. Proving that the blood stains on the co-defendants' clothing are from the victim, in the absence of blood stains on the clothing of defendant Stankewitz, would support his contention that he was not involved in the murder. This goes directly to whether Stankewitz was the perpetrator or an accomplice in the murder.

POINTS AND AUTHORITIES:

Statute: CA Penal Code Sections 1405. CA PC Section 1405, attached as Appendix A, provides in subd(a) that a person convicted of a felony and currently serving a term of imprisonment may make written motion . . . before the trial court that entered the judgment of conviction in his case for performance of forensic DNA testing. The statute lists criteria which must be met in order for the trial court to order DNA testing.

Those criteria can be summarized as follows:

Subd b:

An indigent person may request appointment of counsel. subd(b)(1)

If the convicted person has submitted a written statement and is indigent, the court shall appoint counsel. subd(b)(3)(A)

The written statement must include:

That the person was not the perpetrator of the crime subd(b)(1)

Explanation of how DNA testing is relevant to his innocence subd(b)(1)

State whether the person previously had counsel appointed under this section subd(b)(1)

Subd(d):

A verified statement by the convicted person under penalty of perjury, including 6 provisions as outlined in (d) (1) (A) – (F):

A statement the person is innocent and not the perpetrator of the crime. (Subd.(d)(1)(A).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto.

Explain why the identity of the perpetrator was, or should have been, a significant issue in the case. (Subd. (d)(1)(B).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto, and Declaration of Roger Clark, Exhibit B hereto.

Make every reasonable attempt to identify both the evidence that should be tested and the specific type of DNA testing sought. (Subd. (d)(1)(C).) *See* Declaration of Chris Coleman, Exhibit C.

Explain, in light of all the evidence, how the requested DNA testing would raise a reasonable probability that the convicted person's verdict or sentence would be more favorable if the results of DNA testing had been available at the time of conviction. (Subd. (d)(1)(D); same as subd. (g)(5).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto; Declaration of Roger Clark, Exhibit B hereto.

Reveal the results of any DNA or other biological testing that was conducted previously by either the prosecution or defense, if known. (Subd. (d)(1)(E).) *See* Declaration of Curtis Briggs, *infra*.

State whether any motion for testing under this section previously has been filed and the results of that motion, if known. (Subd. (d)(1)(F).) *See* Declaration of Curtis Briggs, *infra*.

Subd. (g) factors:

Court shall grant motion if it finds these have been established:

The evidence to be tested is available and in a condition that would permit the DNA testing requested in the motion. (Subd. (g) (1).) *See* Declarations of Roger Clark and Chris Coleman, Attached as Exhibits B & C hereto.

The evidence to be tested has been subject to a chain of custody sufficient to establish it has not been substituted, tampered with, replaced or altered in any material aspect. (Subd.(g)(2).) *See* Declaration of Chris Coleman, Exhibit C hereto. The evidence has been under the control of the Fresno Sheriff's Department and in the Evidence Room since 1978.

The identity of the perpetrator of the crime was, or should have been, a significant issue in the case. (Subd. (g)(3).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto and Declaration of Roger Clark, Exhibit B hereto.

The convicted person has made a *prima facie* showing that the evidence sought to be tested is material to the issue of the convicted person's identity as the perpetrator of, or accomplice to, the crime, special circumstance, or enhancement allegation that resulted in the conviction or sentence. (Subd. (g)(4).).

Court shall not decide if defendant is entitled to ultimate relief in determining reasonable probability. (Subd. (g)(5).)

The requested DNA testing results would raise a reasonable probability that, in light of all the evidence, the convicted person's verdict or sentence would have been more favorable if the results of DNA testing had been available at the time of

conviction. The court in its discretion may consider any evidence whether or not it was introduced at trial. (Subd. (g)(5).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto.

The evidence sought to be tested either has not been tested before, or was tested but the results of new testing would be reasonably more discriminating and probative of the identity of the perpetrator or accomplice or have a reasonable probability of contradicting prior test results. (Subd. (g)(6).) *See* Declaration of Curtis Briggs, *infra*.

The testing performed by the Forensic Analytics Crime Lab employs a method generally accepted within the relevant scientific community. Forensic Analytics Crime Lab meets the FBI Director's Quality Assurance Standards. *See* documents attached to Chris Coleman Declaration, Exhibit C hereto, that demonstrate FACL compliance with all necessary accreditation and FBI QAS. (Subd. (h)(2).)

Case Law RE 1405

Subd(d)(1)(A)

Where inmate denied guilt or claimed alibi, identity is at issue. (People v. Cowger (1988) 202 Cal.App.3d 1066, 1075-1076; People v. McCarty (1958) 164 Cal.App. 2d 322, 325; People v. Jointer (2013) 217 Cal.App. 4th 759, 766.)

Subd(d)(1)(D)

"Reasonable probability" does not mean "more likely than not" but simply means a "reasonable chance" as opposed to some abstract possibility. Richardson v. Superior Court of California (2008) 43 Cal.4th 1040, 1005.

Subd(f)(4)

Materiality requirement in P.C. § 1405(f)(4) means that the DNA testing sought would be relevant to the issue of identity, rather than dispositive of it; this requirement is met when identity is a controverted issue as to which the results of DNA testing would be relevant evidence. Richardson v. Superior Court (Cal. May 22, 2008), 43 Cal. 4th 1040, 77 Cal. Rptr. 3d 226, 183 P.3d 1199, 2008 Cal. LEXIS 6209, modified, (Cal. July 16, 2008), 2008 Cal. LEXIS 8670, modified, (Cal. July 16, 2008), 2008 Cal. LEXIS 8838

Defendant is Entitled to Test Physical Evidence DNA Pursuant to CA PC 1405.

Federal and state due process requires the prosecution to disclose to an accused any favorable evidence that is material to guilt, punishment, or impeachment. Brady v. Maryland, (1963) 373 U.S. 83, 87; People v. Morris, (1988) 46 Cal. 3d 1, 29; People v. Phillips, (1985) 41 Cal. 3d 29, 46. Under In re Sassounian, (1995) 9 Cal.4th 535, 542, and United States v. Bagley, (1985) 473 U.S. 667, 674-678, the prosecution has a duty under the Fourteenth Amendment's due process clause to disclose evidence to a criminal defendant. Such evidence must be both favorable to the defendant and material on either guilt or punishment. United States v. Bagley, *supra*, 473 U.S. at 674. Moreover, evidence is "favorable " if it either helps the defendant or hurts the prosecution, for instance by impeaching one of its witnesses. In re Sassounian, *supra*, 9 Cal.4th at 544.

"DNA evidence is different," People v Venegas, (1998) 18 Cal.4th 47, 81. DNA evidence is the type of evidence where, "the

method of scientific proof is so impenetrable that it would ' " ... assume a posture of mystic infallibility in the eyes of a jury." Id. at 84 [citations omitted]. Denying DNA testing of the participants' and victim's clothing and alleged cigarette would deny Mr. Stankewitz his right to confront and undermine key evidence against him in this case.

Courts have found PCR/STR and STR testing kits such as Identifiler Plus to have gained general acceptance in the scientific community. People v. Jackson (2008) 163 Cal.App.4th 313, 325; People v. Hill (2001) 89 Cal.App.4th 48, 60; People v. Allen (1999) 72 Cal.App.4th 1093, 1100. Defense expert Chris Coleman has recommended that STR testing be used. *See* Chris Coleman Declaration, Exhibit C to Motion to Compel DNA Testing, part of Exhibit 1 hereto.

The materials testing requested is necessary to the prove the innocence of the defendant and for consideration by any defense consultant in preparation of a writ of habeas corpus. As stated in Chris Coleman's Declaration, Exhibit C to Motion to Compel DNA Testing, part of Exhibit 1 hereto, DNA testing is necessary to assist defense counsel in this case. It is sufficient that defendant has shown the necessity of review of these materials, both by counsel and by defense experts. Without the requested materials, defendant has no means to check or challenge the accuracy and admissibility of the statements and testimony of Billy Brown that the defendant was the shooter or even present at the time that the victim was shot. As set forth in the attached Declaration of Counsel, part of Exhibit 1 hereto, original Motion to Compel DNA Testing, the defendant will be

denied effective assistance of counsel if his attorney is left without means to challenge this evidence.

Criminal defendants have traditionally been granted broad rights of discovery. [It is an] established principle that in a criminal prosecution an accused is generally entitled to discover all relevant and material information in the possession of the prosecution that will assist him in the preparation and presentation of his defense. Hines v. Superior Court (1993) 20 Cal.App.4th 1818, n. 2, 25 Cal.Rptr.2d 712 (quoting Murgia v. Municipal Court (1975) 15 Cal.3d 286, 293, 124 Cal.Rptr. 204). Accord People v. Williams (1979) 93 Cal.App.3d 40, 64, 155 Cal.Rptr. 414.

Evidence that may impeach the reliability of a prosecution expert by showing that the expert used faulty methods falls squarely within the statutory requirement that "exculpatory evidence" be disclosed to the defense. People v. Garcia (1993) 17 Cal.App.4th 1169, 22 Cal.Rptr.2d 545. In Garcia, the prosecution failed to make available to the defense information that might have supported a claim that the prosecution's accident reconstruction expert had relied upon faulty and improper calculations. The Court of Appeal found that this failure violated the discovery statute and the requirements of Brady and therefore required reversal of defendant's conviction.

Denial of defendant's request would also violate his constitutional right to retest the evidence against him. "The right to retest is so basic that some courts have declared it constitutionally based and a violation of fundamental fairness when denied." P. Giannelli, Criminal Discovery, Scientific

Evidence and DNA, 44 Vanderbilt.L.Rev. 791, 817 (1991); United States v. Butler, 988 F.2d 537, 543 (5th Cir.) (fundamental fairness is violated when defendant is denied opportunity to retest critical evidence).

Mr. Stankewitz has a constitutional right to access physical evidence in the prosecution's possession for independent testing. *See, e.g.*, California v. Trombetta, 467 U.S. 479, 485 (1984) (describing a "'constitutionally guaranteed access to evidence' . . . [that] delivers exculpatory evidence into the hands of the accused") (quoting United States v. Valenzuela-Bernal, 458 U.S. 858, 867 (1982)); Arizona v. Youngblood, 488 U.S. 51, 71 n.7 (1988) (Blackmun, J., dissenting, noting that it is important to preserve evidence "so that the defense has the opportunity at least to use whatever scientifically recognized tests are available"); *see also* Warren v. State, 288 So. 2d 826, 830 (Ala. 1973) (evidence "should have been made available to [defense] attorney, as an officer of the court, and under such safeguards as the trial court deemed necessary, for inspection and analysis" (citations omitted)); Ex parte Harwell, 639 So. 2d 1335, 1337 (Ala. 1993) (defendant has right to obtain sample for blood alcohol testing).

Mr. Stankewitz is entitled to conduct independent DNA testing in order to adequately challenge the reliability and accuracy of the State's witnesses and law enforcement's methodology and analysis. Independent testing of the evidence is necessary for to prove the defendant's innocence.

DNA testing was first used in a criminal case in England in 1986. Over the 41+ years since this case started, the physical evidence in this case has never been DNA tested.

CONCLUSION

The requested DNA testing and discovery is essential to prove the innocence of the defendant in this case. Failure of the court to order the requested DNA testing would violate the defendant's statutory rights under CA P.C. 1405, and his constitutional right to due process, ability to confront evidence against him and his right to assistance of counsel. Defendant has met all of the requirements for testing under P.C. Sections 1405. Therefore, his motion for an order requiring the prosecutor to produce the physical evidence for independent DNA testing must be granted.

Dated: November 25, 2019

Respectfully Submitted,

J. TONY SERRA
CURTIS L. BRIGGS

Attorneys for Defendant
DOUGLAS RAY STANKEWITZ

Curtis L. Briggs

By CURTIS L. BRIGGS

PROOF OF SERVICE

The undersigned declares:

I am a citizen of the United States. My business address is 3330 Geary Blvd. 3rd Floor East, San Francisco, California 94118. I am over the age of eighteen years and not a party to the within action.

On the date set forth below, I caused a true copy of the within

AMENDED MOTION FOR DNA TESTING

to be served on the following parties in the following manner:

Mail _x___ Overnight mail ____ Personal service ____ Fax ____

Office of District Attorney
2220 Tulare Street, Suite 1000
Fresno, CA 93721
Fax: 559-600-4401

Mail __X__ Overnight mail ____ Personal service ____ Fax ____

Fresno County Sheriff's Office
P.O. Box 1788
Fresno, CA 93717

Mail _x___ Overnight mail ____ Personal service ____ Fax ____

California Attorney General's Office
2550 Mariposa Mall, Room 5090
Fresno, CA 93721-2271

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration is executed on November 25, 2019, at San Francisco, California.

Curtis L. Briggs

CURTIS L. BRIGGS

EXHIBIT 1

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Attorneys for Defendant
DOUGLAS R. STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, vs. DOUGLAS STANKEWITZ, Defendant.	Case No. CF78227015 NOTICE OF MOTION AND MOTION TO COMPEL DNA TESTING Date: 6/14/2019 Time: 9 am Dept: 62

TO THE SUPERIOR COURT FOR THE COUNTY OF FRESNO, THE DISTRICT ATTORNEY FOR THE COUNTY OF FRESNO, THE SHERIFF FOR THE COUNTY OF FRESNO, AND THE CALIFORNIA ATTORNEY GENERAL:

NOTICE IS HEREBY GIVEN that on the 14th day of June, 2019, at 9 a.m., in Department 62 of the above-entitled court, the above-named defendant will move the court as follows:

1. Motion for DNA Testing

2. Motion to Preserve Evidence

3. Motion to Compel Specified Discovery

4. Motion for Conditional Examination of Allen J. Boudreau, former Fresno Sheriff's Department employee, and Garry Snow, former Fresno Police Department employee

The Motion for DNA Testing is made on the grounds that defense experts have examined the physical evidence in this case and that the DNA testing of the evidence sought through this motion is required by the defense as it is material to establishing the innocence of the defendant through a Writ of Habeas Corpus.

Mr. Stankewitz has a right to a fair trial, to present evidence, to effectively confront government witnesses called against him, to effective assistance of counsel, and to due process of law under the Fourth, Fifth, Sixth, and Fourteen Amendments to the U.S. Constitution and their California counterparts, which will be violated if the physical evidence is not tested.

This motion is based on this notice, the attached points and authorities, Declaration of Counsel Curtis Briggs, Declaration of defendant Douglas R. Stankewitz, Exhibit A hereto, Declaration of Roger Clark, Exhibit B hereto, Declaration of Chris Coleman, Exhibit C hereto, the files and records of the case, and any additional argument or evidence submitted at the hearing on this motion.

Defense asks that if a hearing is held, that the defendant/petitioner be present.

Dated: April 30, 2019

Respectfully Submitted,

J. TONY SERRA
PETER JONES
CURTIS BRIGGS

Attorneys for Defendant
DOUGLAS RAY STANKEWITZ

_____
By CURTIS L. BRIGGS

BACKGROUND

On April 4, 1978, defense counsel made a Motion for Discovery and Points and Authorities in Support Thereof. Discovery production was ordered by the Court on April 20, 1978. That Order is still in effect.

In February 1978, Fresno County collected clothing from the defendants and the victim, and biological evidence from the crime scene and from the body of the victim. This evidence is being stored with the Fresno County Sheriff's Office (FSO).

As stated in the Declarations of Chris Coleman and Roger Clark, they viewed all of the physical evidence in this case currently stored at the Fresno Sheriff's office and Fresno Superior Court clerk's office. As a result of their examination of the evidence, they recommended that certain items of evidence be tested for the DNA of the victim, Theresa Graybeal. The specific items are listed in their declarations. This is new evidence.

The prosecution has not produced any reports or records from 1978 – present, showing that the participants' clothing has been tested for DNA. *See* Declaration of Counsel Curtis Briggs, *infra*.

Pursuant to CA P.C. Sect. 1054.5(b), on March 25, 2019, through informal discovery, Defense counsel sought a stipulation from the District Attorney's office for DNA testing. The District Attorney has not responded to the defense request. *See* Declaration of Counsel Curtis Briggs, *infra*.

POINTS AND AUTHORITY:

Statutes: CA Penal Code Sections 1405, 1054 and 1054.1 (c) and (e) govern DNA testing and discovery.

CA PC Section 1405, attached as Appendix A, provides in subd(a) that a person convicted of a felony and currently serving a term of imprisonment may make written motion . . . before the trial court that entered the judgment of conviction in his case for performance of forensic DNA testing. The statute lists criteria which must be met in order for the trial court to order DNA testing.

Those criteria can be summarized as follows:

Subd b:

An indigent person may request appointment of counsel. subd(b)(1)

If the convicted person has submitted a written statement and is indigent, the court shall appoint counsel. subd(b)(3)(A)

The written statement must include:

That the person was not the perpetrator of the crime subd(b)(1)

Explanation of how DNA testing is relevant to his innocence subd(b)(1)

State whether the person previously had counsel appointed under this section subd(b)(1)

Subd(d):

A verified statement by the convicted person under penalty of perjury, including 6 provisions as outlined in (d) (1) (A) – (F):

A statement the person is innocent and not the perpetrator of the crime. (Subd.(d)(1)(A).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto.

Explain why the identity of the perpetrator was, or should have been, a significant issue in the case. (Subd. (d)(1)(B).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto, and Declaration of Roger Clark, Exhibit B hereto.

Make every reasonable attempt to identify both the evidence that should be tested and the specific type of DNA testing sought. (Subd. (d)(1)(C).) *See* Declaration of Chris Coleman, Exhibit C.

Explain, in light of all the evidence, how the requested DNA testing would raise a reasonable probability that the convicted person's verdict or sentence would be more favorable if the results of DNA testing had been available at the time of conviction. (Subd. (d)(1)(D); same as subd. (g)(5).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto; Declaration of Roger Clark, Exhibit B hereto.

Reveal the results of any DNA or other biological testing that was conducted previously by either the prosecution or defense, if known. (Subd. (d)(1)(E).) *See* Declaration of Curtis Briggs, *infra*.

State whether any motion for testing under this section previously has been filed and the results of that motion, if known. (Subd. (d)(1)(F).) *See* Declaration of Curtis Briggs, *infra*.

Subd. (g) factors:

Court shall grant motion if it finds these have been established:

The evidence to be tested is available and in a condition that would permit the DNA testing requested in the motion. (Subd. (g) (1).) *See* Declarations of Roger Clark and Chris Coleman, Attached as Exhibits B & C hereto.

The evidence to be tested has been subject to a chain of custody sufficient to establish it has not been substituted, tampered with, replaced or altered in any material aspect. (Subd.(g)(2).) *See* Declaration of Chris Coleman, Exhibit C hereto. The evidence has been under the control of the Fresno Sheriff's Department and in the Evidence Room since 1978.

The identity of the perpetrator of the crime was, or should have been, a significant issue in the case. (Subd. (g)(3).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto and Declaration of Roger Clark, Exhibit B hereto.

The convicted person has made a *prima facie* showing that the evidence sought to be tested is material to the issue of the convicted person's identity as the perpetrator of, or accomplice to, the crime, special circumstance, or enhancement allegation that resulted in the conviction or sentence. (Subd. (g)(4).).

Court shall not decide if defendant is entitled to ultimate relief in determining reasonable probability. (Subd. (g)(5).)

The requested DNA testing results would raise a reasonable probability that, in light of all the evidence, the convicted person's verdict or sentence would have been more favorable if the results of DNA testing had been available at the time of

conviction. The court in its discretion may consider any evidence whether or not it was introduced at trial. (Subd. (g)(5).) *See* Declaration of Douglas R. Stankewitz, Exhibit A hereto.

The evidence sought to be tested either has not been tested before, or was tested but the results of new testing would be reasonably more discriminating and probative of the identity of the perpetrator or accomplice or have a reasonable probability of contradicting prior test results. (Subd. (g)(6).) *See* Declaration of Curtis Briggs, *infra*.

The testing performed by the Forensic Analytics Crime Lab employs a method generally accepted within the relevant scientific community. Forensic Analytics Crime Lab meets the FBI Director's Quality Assurance Standards. *See* documents attached to Chris Coleman Declaration, Exhibit C hereto, that demonstrate FACL compliance with all necessary accreditation and FBI QAS. (Subd. (h)(2).)

Sect. 1054 lists the general purposes of discovery between the parties in criminal cases, including reducing court time.

Sect. 1054.1 Information to be disclosed by prosecution The prosecuting attorney shall disclose to the defendant or his or her attorney all of the following materials and information, if it is in the possession of the prosecuting attorney or if the prosecuting attorney knows it to be in the possession of the investigating agencies:

(c) All relevant real evidence seized or obtained as a part of the investigation of the offenses charged

(e) Any exculpatory evidence.

CA Penal Code 1054.9 (d) In response to a writ or motion satisfying the conditions in subdivision (a), the court may order that the defendant be provided access to physical evidence for the purpose of examination, including, but not limited to, any physical evidence relating to the investigation, arrest, and prosecution of the defendant only upon a showing that there is good cause to believe that access to physical evidence is reasonably necessary to the defendant's effort to obtain relief. The procedures for obtaining access to physical evidence for purposes of postconviction DNA testing are provided in Section 1405, and this section does not provide an alternative means of access to physical evidence for those purposes.

Case Law RE 1405

Subd(d)(1)(A)

Where inmate denied guilt or claimed alibi, identity is at issue. (People v. Cowger (1988) 202 Cal.App.3d 1066, 1075-1076; People v. McCarty (1958) 164 Cal.App. 2d 322, 325; People v. Jointer (2013) 217 Cal.App. 4th 759, 766.)

Subd(d)(1)(D)

"Reasonable probability" does not mean "more likely than not" but simply means a "reasonable chance" as opposed to some abstract possibility. Richardson v. Superior Court of California (2008) 43 Cal.4th 1040, 1005.

Subd(f)(4)

Materiality requirement in P.C. § 1405(f)(4) means that the DNA testing sought would be relevant to the issue of identity, rather than dispositive of it; this requirement is met when identity is a controverted issue as to which the results of DNA

testing would be relevant evidence. Richardson v. Superior Court (Cal. May 22, 2008), 43 Cal. 4th 1040, 77 Cal. Rptr. 3d 226, 183 P.3d 1199, 2008 Cal. LEXIS 6209, modified, (Cal. July 16, 2008), 2008 Cal. LEXIS 8670, modified, (Cal. July 16, 2008), 2008 Cal. LEXIS 8838

Defendant is Entitled to Test Physical Evidence DNA Pursuant to CA PC 1405 and or alternatively, CA PC 1054.

Federal and state due process requires the prosecution to disclose to an accused any favorable evidence that is material to guilt, punishment, or impeachment. Brady v. Maryland, (1963) 373 U.S. 83, 87; People v. Morris, (1988) 46 Cal. 3d 1, 29; People v. Phillips, (1985) 41 Cal. 3d 29, 46. Under In re Sassounian, (1995) 9 Cal.4th 535, 542, and United States v. Bagley, (1985) 473 U.S. 667, 674-678, the prosecution has a duty under the Fourteenth Amendment's due process clause to disclose evidence to a criminal defendant. Such evidence must be both favorable to the defendant and material on either guilt or punishment. United States v. Bagley, *supra*, 473 U.S. at 674. Moreover, evidence is "favorable " if it either helps the defendant or hurts the prosecution, for instance by impeaching one of its witnesses. In re Sassounian, *supra*, 9 Cal.4th at 544.

"DNA evidence is different," People v Venegas, (1998) 18 Cal.4th 47, 81. DNA evidence is the type of evidence where, "the method of scientific proof is so impenetrable that it would ' " ... assume a posture of mystic infallibility in the eyes of a jury." Id. at 84 [citations omitted]. Denying DNA testing of the participants' and victim's clothing and alleged cigarette would

deny Mr. Stankewitz his right to confront and undermine key evidence against him in this case.

Courts have found PCR/STR and STR testing kits such as Identifiler Plus to have gained general acceptance in the scientific community. People v. Jackson (2008) 163 Cal.App.4th 313, 325; People v. Hill (2001) 89 Cal.App.4th 48, 60; People v. Allen (1999) 72 Cal.App.4th 1093, 1100. Defense expert Chris Coleman has recommended that STR testing be used. *See* Chris Coleman Declaration, Exhibit C hereto.

The materials testing requested is necessary to the prove the innocence of the defense and for consideration by any defense consultant in preparation of a writ of habeas corpus. As stated in Chris Coleman's Declaration, Exhibit C hereto, DNA testing is necessary to assist defense counsel in this case. It is sufficient that defendant has shown the necessity of review of these materials, both by counsel and by any defense expert. Without the requested materials, defendant has no means to check or challenge the accuracy and admissibility of the statements and testimony of Billy Brown that the defendant was the shooter. As set forth in the attached Declaration of Counsel, the defendant will be denied effective assistance of counsel if his attorney is left without means to challenge this evidence.

Criminal defendants have traditionally been granted broad rights of discovery. [It is an] established principle that in a criminal prosecution an accused is generally entitled to discover all relevant and material information in the possession of the prosecution that will assist him in the preparation and presentation of his defense. Hines v. Superior Court (1993) 20

Cal.App.4th 1818, n. 2, 25 Cal.Rptr.2d 712 (quoting Murgia v. Municipal Court (1975) 15 Cal.3d 286, 293, 124 Cal.Rptr. 204). Accord People v. Williams (1979) 93 Cal.App.3d 40, 64, 155 Cal.Rptr. 414.

Criminal discovery in California is now governed exclusively by the statute enacted by Proposition 115 (Penal Code Sec. 1054 et seq.). However, this statute has had little effect on defendants' rights to discovery because it authorizes (as it must) discovery that is "mandated by the Constitution of the United States." Sec. 1054(e). "Much of the discovery available to a defendant under pre-Proposition 115 law was based on federal constitutional concepts, and hence specifically remains applicable." Hines v. Superior Court, *supra*, 20 Cal.App.4th at p. 1824.

Evidence that may impeach the reliability of a prosecution expert by showing that the expert used faulty methods falls squarely within the statutory requirement that "exculpatory evidence" be disclosed to the defense. People v. Garcia (1993) 17 Cal.App.4th 1169, 22 Cal.Rptr.2d 545. In Garcia, the prosecution failed to make available to the defense information that might have supported a claim that the prosecution's accident reconstruction expert had relied upon faulty and improper calculations. The Court of Appeal found that this failure violated the discovery statute and the requirements of Brady and therefore required reversal of defendant's conviction.

Denial of defendant's request would also violate his constitutional right to retest the evidence against him. "The right to retest is so basic that some courts have declared it

constitutionally based and a violation of fundamental fairness when denied." P. Giannelli, Criminal Discovery, Scientific Evidence and DNA, 44 Vanderbilt.L.Rev. 791, 817 (1991); United States v. Butler, 988 F.2d 537, 543 (5th Cir.) (fundamental fairness is violated when defendant is denied opportunity to retest critical evidence).

Mr. Stankewitz has a constitutional right to access physical evidence in the prosecution's possession for independent testing. *See, e.g.,* California v. Trombetta, 467 U.S. 479, 485 (1984) (describing a "'constitutionally guaranteed access to evidence' . . . [that] delivers exculpatory evidence into the hands of the accused") (quoting United States v. Valenzuela-Bernal, 458 U.S. 858, 867 (1982)); Arizona v. Youngblood, 488 U.S. 51, 71 n.7 (1988) (Blackmun, J., dissenting, noting that it is important to preserve evidence "so that the defense has the opportunity at least to use whatever scientifically recognized tests are available"); *see also* Warren v. State, 288 So. 2d 826, 830 (Ala. 1973) (evidence "should have been made available to [defense] attorney, as an officer of the court, and under such safeguards as the trial court deemed necessary, for inspection and analysis" (citations omitted)); Ex parte Harwell, 639 So. 2d 1335, 1337 (Ala. 1993) (defendant has right to obtain sample for blood alcohol testing).

Mr. Stankewitz is entitled to conduct independent DNA testing in order to adequately challenge the reliability and accuracy of the State's witnesses and law enforcements' methodology and analysis. Independent testing of the evidence is necessary for to prove the defendant's innocence. DNA testing was

first used in a criminal case in England in 1986. Over the 41+ years since this case started, the physical evidence in this case has never been DNA tested.

CONCLUSION

The requested DNA testing and discovery is essential to prove the innocence of the defendant in this case. Failure of the court to order the requested DNA testing would violate the defendant's statutory rights under CA P.C. 1405, and his constitutional right to due process, ability to confront evidence against him and his right to assistance of counsel. Defendant has met all of the requirements for testing under P.C. Sections 1405, 1054 and 1054.1 (c) and (e). Therefore, his motion for an order requiring the prosecutor to produce the physical evidence for independent DNA testing must be granted.

Dated: April 30, 2019

Respectfully Submitted,

J. TONY SERRA
PETER JONES
CURTIS BRIGGS

Attorneys for Defendant
DOUGLAS RAY STANKEWITZ

Curtis L. Briggs

_____
By CURTIS L. BRIGGS

DECLARATION OF COUNSEL

I, Curtis L. Briggs, declare under penalty of perjury, except as to matters stated upon information and belief:

1. I am an attorney of record for the defendant, Douglas R. Stankewitz.

2. Through informal discovery, on March 25, 2019, Defense counsel has sought a stipulation from the District Attorney's office for DNA testing. See attached email. The District Attorney has not responded to the defense request.

3. The prosecution has not produced any reports or records from 1978 – 1983, showing that the participants' clothing has been tested for DNA. Nor has it produced any reports or records showing that the participants' clothing has been tested from 1983 – present.

4. Through informal discovery, on April 4, 2019, Defense counsel requested complete information and all results of any DNA testing from the District Attorney's office. See attached email. The District Attorney has not responded to the defense request.

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration is executed on April 30, 2019.

Curtis L. Briggs

By CURTIS L. BRIGGS

From: Curtis Briggs
To: Freeman, Amythest
Cc: Alexandra Cock; E. Larson for J. Tony Serra; Peter Jones; Tyler Smith
Subject: Re: People v. Stankewitz
Date: Thursday, April 04, 2019 2:20:22 PM

Dear Ms. Freeman,

This request is in addition to my informal request on 3/25/2019. I am informally requesting that your office produce all files pertaining to FPD or FSO case #75-41415. I have attached a copy of a report from the FSO which references the case. I am also informally requesting that your office produce complete information and results for all DNA testing done on the evidence in the Stankewitz case. Time is of the essence so if you will not agree please let me know as soon as possible so I can prepare a motion to compel in the 15 day timeline. If you will agree, I can send you a draft stipulation regarding the chain of custody, etc. Thank you for your time.

Curtis Briggs

On Mon, Mar 25, 2019 at 1:44 PM Freeman, Amythest <afreeman@fresnocountyca.gov> wrote:

> Mr. Briggs,
>
> Let me look over a few things and I'll get back to you.
>
> Thank you,
>
> Amythest Freeman
>
> Senior Deputy District Attorney
>
> Homicide Unit
>
> (559) 600-2118
>
> **From:** Curtis Briggs <curt.briggs@briggslawsanfrancisco.com>
> **Sent:** Monday, March 25, 2019 11:14 AM
> **To:** Freeman, Amythest <afreeman@fresnocountyca.gov>

Cc: Peter Jones <pjones@wjhattorneys.com>; Erika Larson <jts@pier5law.com>; Tyler Smith <smithtyler42@gmail.com>; Alexandra <alexandraatty@wealthplusinc.com>; Michael R. Seville, Esq. <mseville.sf@gmail.com>
Subject: People v. Stankewitz

Dear Ms. Freeman,

I have not had an opportunity to meet you in person yet. I am informally requesting a stipulation for our team to conduct independent testing and analysis of DNA and GSR on physical evidence. Specifically, but not limited to, the clothing of my client and all original co-defendants. Time is of the essence so if you will not agree please let me know as soon as possible so I can prepare a motion to compel in the 15 day timeline. If you will agree, I can send you a draft stipulation regarding the chain of custody, etc. Thank you for your time.

Curtis L. Briggs

Pier 5 Law Offices

3330 Geary Blvd.,

San Francisco, CA 94118

Phone:(415) 986-5591 Ext. 112

Cell: (415) 283-9123

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EXHIBIT A

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Fax 415-421-1331

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Wanger Jones Helsley PC
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Tel 559-233-4800
Fax 559-233-9330

Attorneys for Defendant
DOUGLAS STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, vs. DOUGLAS STANKEWITZ, Defendant.	Case No. CF78227015 DECLARATION OF DOUGLAS R. STANKEWITZ FOR DNA TESTING UNDER P.C. § 1405

I, Douglas R. Stankewitz, declare as follows:

1. I am the defendant in People v. Stankewitz, Fresno Superior Court Case CF78227015.

2. I am not the perpetrator and am innocent in the shooting of the victim, Theresa Graybeal, of which I stand convicted.

3. The identity of the perpetrator was, or should have been, a significant issue in the case, in part because there were 5 co-defendants.

4. DNA evidence is relevant because it will provide circumstantial and direct evidence I was not at or near Mrs.

Graybeal's body when she was killed and I believe will provide scientific evidence I did not kill Mrs. Graybeal. This is consistent with the fact I've maintained my innocence for over 40 years. This is consistent with the 7 alibi witnesses in support of my innocence, which the trial court excluded due to lack of supporting evidence. This is consistent with the preliminary findings of Roger Clark and Chris Coleman. (See accompanying declarations).

5. The DNA testing that I am requesting would raise a reasonable probability that my verdict of guilty would be more favorable if the results of DNA testing had been available at the time of conviction.

6. To the best of my knowledge, no other DNA testing has been conducted in this case.

7. No other motion for DNA testing has been previously filed in this case.

8. I am indigent and have no money.

9. I have not previously had counsel appointed under this Penal Code section.

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed on April 24, 2019, in San Quentin, California.

DOUGLAS R. STANKEWITZ

EXHIBIT B

J. TONY SERRA, SBN 32639
CURTIS BRIGGS, SBN 284190
3330 Geary Blvd., 3rd Floor East
San Francisco, CA 94118
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Facsimile: 415-421-1331

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Wanger Jones Helsley PC
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Telephone: 559-233-4800
Facsimile: 559-233-9330

Attorneys for Defendant
DOUGLAS STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff,

v.

DOUGLAS STANKEWITZ, Defendant.
_____/

CASE NO. CF78227015

DECLARATION OF ROGER CLARK

I, Roger Clark, declare under penalty of perjury the following, except as to those items below which I indicate to be based on information and belief. If called to testify I would testify as follows:

1. I have been retained as a police practices expert in the above-entitled case.

2. I have the following relevant experience and education:

Police Procedures Consultant (self-employed) - 25 years

I have been certified by Federal and State courts as expert in jail and police procedures in Federal and State Courts. I have consulted in approximately 1850 cases thus far since my retirement from the Los Angeles County Sheriff's Department.

Los Angeles County Sheriff's Department - 27 years 4 months:

Note: When I retired from LACSD in 1993, the Department had 7,000 sworn and 3,000 civilian personnel and a daily County Jail inmate population of 23,000. During my 27 years of active service, I was a Line Detective for 2 years and a Detective Bureau Commander for 8 years.

Service as a Lieutenant (15 Years, 0 Months)

Service as a Sergeant (6 Years, 4 Months)

Service as a Deputy (6 Years, 0 Months)

I have the following DEGREES AND CERTIFICATION:

P.O.S.T. Command College (Class #5) POST 1988

Management Certification POST 1980

Advanced Certification POST 1975

Associate of Science Degree Chaffey College 1971

3. This case involves the murder of Ms. Theresa Graybeal (Ms. Graybeal) who was allegedly kidnaped in Modesto, California and shot to death in the City of Fresno on February 8, 1978. The homicide was investigated under Case File No. 78-5819. The investigation eventually connected five

suspects to the crime:

- Douglas Stankewitz (age 19)
- Billy Brown (age 14)
- Marlin Lewis (age 22)
- Tina Topping (age 19)
- Christina Menchaca (age 25)

4. As a result of statements given during intense interrogation, Billy Brown provided specific details regarding the homicide. His statements and trial testimony categorically implicated Mr. Stankewitz as the sole person who shot Ms. Graybeal. Consequently, Mr. Stankewitz was convicted and sentenced to death. Mr. Stankewitz was re-tried in 1983 and once again convicted and sentenced to death.

5. It is uncontested (and a key factor in any evaluation of this case) that Billy Brown's testimony during both trials was the key factor resulting in Mr. Stankewitz' conviction (and death sentence). At both trials, Billy Brown gave specific details regarding how Mr. Stankewitz shot Ms. Graybeal. In my opinion, Billy Brown's account does not match the obvious physical facts. Additionally, it must be noted that Billy Brown recanted his testimony in 1993. In 2012, Mr. Stankewitz' penalty phase was reversed. His case is being re-evaluated, for which I have been retained.

6. Accordingly, I have been provided the opportunity to examine the case with fresh eyes. Almost immediately during my review process it became apparent to me that the physical evidence did not appear to support the case that was presented to the jury by the Prosecution during Mr. Stankewitz' trials. Then, upon request, on March 21, 2019, I was provided the opportunity to actually view and handle all of the physical evidence located at the Fresno Sheriff's office and the Fresno County Superior Court with a defense forensic expert, Chris Coleman. I can provide a list of the evidence examined.

7. As I suspected, significant exculpatory aspects were evident and I therefore recommend that the physical evidence must be forensically evaluated using modern scientific techniques before moving any further with my evaluation of the police practices. Most notably, my visual inspection indicates that it is likely that there are unacknowledged blood stains on the clothing worn by the listed subjects during the homicide. I have also noted that the other subjects have denied being in a place or position that would result in any blood being on their clothing. Thus, a reason for this recommendation is that if there are blood stains on the clothing we examined, then the theories presented to the jury by the Prosecution could not be true.

8. Under standard police procedure, DNA testing on the clothing in evidence, should have been performed prior to the defendant's second trial in 1983.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed at Santee, California on April 23, 2019

ROGER CLARK

EXHIBIT C

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Facsimile: 559-233-9330

Attorneys for Defendant
DOUGLAS STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, v. DOUGLAS STANKEWITZ, Defendant. /	CASE NO. CF78227015 DECLARATION OF CHRIS COLEMAN

I, Chris Coleman, declare under penalty of perjury the following, except as to those items below which I indicate to be based on information and belief. If called to testify I would testify as follows:

1. I have been retained as a forensics and ballistics expert to assist defense counsel in the above-entitled case.

2. I have a BS in Forensic Science and over 24 years of experience in forensic science with city and county law enforcement agencies, including fifteen years with the Contra Costa County Sheriff's Crime Laboratory (nine as supervisor). I have been court qualified in firearms and toolmark examination, shooting incident reconstruction, crime scene processing, blood spatter interpretation, controlled substance analysis and latent print processing. I hold expertise in firearms examination, shooting reconstruction, crime scene processing and blood spatter analysis. I am a fellow of the American Board of Criminalistics and hold certifications in firearms, toolmark, distance determination and gunshot residue by the Association of Firearms and Toolmark Examiners (AFTE). I have published and extensively taught various firearms-related subjects to law enforcement, medical and legal groups, including a recurring shooting incident reconstruction class with the California Criminalistics Institute (CCI). I am a California POST certified Firearms instructor and range master. I am also a recent past president of the California Association of Criminalists (CAC).

3. On Thursday, March 21, 2019, I examined all the physical evidence in this case at the Fresno County Sheriff's Office (FSO)and the Fresno County Superior Court. I have also

examined the crime scene photos and autopsy photos.

4. During my examination of the physical evidence at FSO, I observed stains on the clothing of Marlin Lewis, Christina Menchaca, and Teena Topping.

5. In order to render an opinion regarding the forensics of this case, it is necessary to get testing of the clothing worn by all parties and the cigarette found near the victim, Theresa Graybeal, tested for DNA, to determine if the blood is hers.

6. Theresa Graybeal's clothes and hair samples, which are contained in the evidence, can be used to provide our victim standard.

7. The cigarette next to Theresa Graybeal at the scene should also be tested, since it goes to corroborating (or refuting) different accounts given by the participants.

8. This evidence is in a condition that would permit DNA testing. This evidence has been subject to a chain of custody sufficient to establish that it has not been substituted, tampered with, replaced or altered in any material aspect.

9. My recommendation is that PCR-based short tandem repeat (STR) DNA analysis that incorporates the twenty (20) core CODIS genes be conducted on the bloodstained clothing, the cigarette butt, and reference specimens. My visual examination and experience indicate that not more than half of the relevant bloodstains nor the cigarette butt would be consumed by this genetic investigation.

10. This testing is necessary for me to assist defense counsel in this case.

11. DNA testing can be done by Forensic Analytical Crime Lab, Hayward, CA, in a timely manner.

12. The estimated cost of the DNA testing is $15,930.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed in Hayward, California on April 29th, 2019

CHRIS COLEMAN

CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

2000 Regency Parkway, Suite 430, Cary, NC 27518

This is to certify that

Forensic Analytical Crime Lab

has been assessed by ANAB
and meets the requirements of

ISO/IEC 17025:2005

ANAB ISO/IEC 17025 Accreditation Requirements for Forensic Science Testing Laboratories:2016

while demonstrating technical competence in the field of

FORENSIC SCIENCE TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of tests to which this accreditation applies

Certificate Number: AT-1641

Valid to: 05/31/2022

Pamela L. Sale
Vice President, Forensics

ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO:
ISO/IEC 17025:2005
ANAB ISO/IEC 17025 Accreditation Requirements for Forensic Science Testing Laboratories:2016

Forensic Analytical Crime Lab

3777 Depot Road Suite 403
Hayward, California 94545

FORENSIC SCIENCE TESTING

Valid to: May 31, 2022 Certificate Number: AT-1641

1.0 Materials Examined

Category	Sub Category	Analytical Technique (See 2.0)
1.1 Biology	1.1.1 Biological Screening	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.4.1, 2.1.4.2, 2.1.4.3, 2.1.5, 2.4
	1.1.2 Genetic Analysis	2.2.1, 2.2.1.1, 2.2.1.2, 2.2.2, 2.4
	1.1.3 Electrophoresis	2.3.1, 2.4

2.0 Analytical Technique/Test Method

2.1 Biological Screening 2.1.1 AP 2.1.2 o-Toluic Acid 2.1.3 ALS 2.1.4 Immunoassay 2.1.4.1 HemDirect 2.1.4.2 PSA 2.1.4.3 Semiquant 2.1.5 Microscopy
2.2 Genetic Analysis 2.2.1 DNA-PCR 2.2.1.1 Autosomal STR 2.2.1.2 YSTR 2.2.2 Data Analysis

2000 Regency Parkway, Suite 430, Cary, NC 27518
414-501-5494 www.anab.org

2.3 Electrophoresis 2.3.1 Capillary
2.4 General Laboratory Procedures

Pamela L. Sale
Vice President, Forensics

2000 Regency Parkway, Suite 430, Cary, NC 27518
414-501-5494 www.anab.org

ON-SITE VENDOR LABORATORY VISIT PROGRAM (OVP)

VISIT SUMMARY

Visit Number:	OVP2018-FAS
Name of Laboratory:	Forensic Analytical Sciences, Inc.
Visit Dates:	4/16/2018 – 4/17/2018
Visit Conducted By:	Jennifer S. Mihalovich Oakland Police Department Criminalistics Laboratory
	Gina M. Sola FBI Laboratory – CODIS Unit

IMPORTANT: The OVP is not an approval or endorsement by the FBI.

NDIS laboratories may accept an OVP visit as their own initial or annual on-site visit. However, it is incumbent on the NDIS laboratory to review the visit summary to assess the vendor laboratory's ability to perform outsourced work and request additional documentation from the vendor laboratory, as necessary.

It is also the NDIS laboratory's responsibility to document the review and approval of an OVP visit for compliance with the Quality Assurance Standards (QAS).

Laboratory Facility

X	Casework		Databasing

☆ *See **Appendix C** for laboratory's accreditation certificate and/or scope of accreditation.*

Visit Team:

- ☑ Conduct a tour of the laboratory facility.
- ☑ Request a laboratory floor plan to be included in the visit summary (OPTIONAL)

Does the laboratory have the following:	**Yes**	**No**
Controlled and limited access to the lab that prevents access by unauthorized personnel?	X	
Exterior entrance/exit points with security control?	X	
Separate or dedicated entrance point for evidence receiving/sample intake?		X
Dedicated space for evidence receiving/sample intake?	X	
Secured evidence storage area with controlled and limited access?	X	
Separate spaces for sample accessioning, evidence examinations, DNA extractions, and PCR setup?	X	
Separate dedicated space for real-time PCR and DNA amplification?	X	
Secure and controlled-access areas for evidence storage and work product in progress?	X	

Notes on Laboratory Facility

- See ***Appendix J*** for laboratory floor plans.
- DNA/Forensic Biology, General Criminalistics/Firearms/Ballistics, Forensic Pathology/Neuropathy utilizes a key-locked common laboratory entrance. Visitors to the laboratory need to sign in and out in a visitor's log. All visitors are escorted beyond lab entrance. Laboratory access and security is described in the Quality Assurance Manual (5.3).
- Facility has an alarm system which needs to be disarmed upon initial entry for the day. Each authorized individual has their own pin.
- Internal doors between discipline areas are not kept locked but these doors are equipped with locks and only Forensic Analytical Crime Lab (FACL) employees have access to the lab. Laboratory memo designates unescorted and escorted individuals that are authorized into FACL space. Guests are restricted to the reception area or are escorted at all times while in the lab. The internal door between FACL and sister lab Forensic Analytical Laboratories, Inc. (FALI) is locked and has a pin pad entrance.
- Evidence is delivered through the main entrance and is received by an evidence technician. Evidence receipt is performed at the evidence technician's desk or in the laboratory. Each item is inventoried, logged into an internally-developed software called CRYM and barcoded. Evidence is then brought back to the evidence storage rooms where it scanned and placed into storage. CRYM tracks all case contact info, evidence receipt, storage and movement, disposition, communications, etc., but it does not track samples or sample data. Individual items are not opened by the evidence technicians.
- Laboratory contains two key-locked evidence storage rooms. Main evidence storage contains walk-in freezer. Second evidence storage room is for any evidence stored at room temperature. Evidence such as liquid blood is stored in a refrigerator in the main DNA lab.

Quality Assurance Program

☆ *See **Appendix D** for laboratory's quality manual and/or policies describing laboratory's quality system.*

Visit Team:

☑ Document laboratory's quality system for the following (if N/A, note in Comment):

	Document Name/section	Rev. #	Effective Date	Comment
Evidence Control (Forensic)	Quality Assurance Manual/5.8 Evidence Handling SOP	v16 v9	12/26/2017 12/22/2017	
Sample Control (Databasing)	N/A			Laboratory currently does not offer DNA databasing services
Validation	Quality Assurance Manual/5.4.5	v16	12/26/2017	
Analytical Procedures	Quality Assurance Manual/5.4 General Laboratory QA SOP/XV	v16 v10	12/26/2017 3/16/2018	
Equipment Calibration & Maintenance	Quality Assurance Manual/5.5 General Laboratory QA SOP/IX Laboratory Maintenance SOP/III, VI, VII	v16 v10 v8	12/26/2017 3/16/2018 12/22/2017	
Reports (Forensic)	Quality Assurance Manual/5.10 Documentation and Report Writing SOP	v16 v8	12/26/2017 12/22/2017	
Documentation (Databasing)	N/A			Laboratory currently does not offer DNA databasing services
Review	General Laboratory QA SOP/II, III	v10	3/16/2018	
Proficiency Testing	General Laboratory QA SOP/IV	v10	3/16/2018	
Corrective Actions	Quality Assurance Manual/4.11 General Laboratory QA SOP/XVII	v16 v10	12/26/2017 3/16/2018	
Personnel Training	General Laboratory QA SOP/VIII DNA Training Manual	v10 v7.3	3/16/2018 2/14/2018	

Notes on Quality Assurance Program

- Training Manual (v7.3) utilizes a legacy numbering system.

QAS Audits

*See **Appendix E** for audit documentation of laboratory's 2 most recent external QAS audits.*

Visit Team:

- ☑ Based on lab's response in the pre-visit questionnaire and lab's previous on-site visit (if applicable), review and document lab's internal (I) and external (E) QAS audits for the current calendar year.
- ☑ Based on lab's response in the pre-visit questionnaire and lab's previous on-site visit (if applicable), review and document lab's internal (I) and external (E) QAS audits from the previous calendar year that did not get reviewed during the previous on-site visit.

Current calendar year:

Audit Dates	E/I	Auditor(s)	Findings (if any)	Lab's response (if applicable)	Remed. Status
1/29/2018 - 1/30/2018	E	A. Robyn Quinn Alexandria Bradley	Yes-See App. E	See App. E	Completed

Previous calendar year (not reviewed during previous on-site visit):

Audit Dates	E/I	Auditor(s)	Findings (if any)	Lab's response (if applicable)	Remed. Status
7/25/2017	I	Alan Keel	No findings	N/A	N/A
2/16/2016	E	Deedra Hughes	Yes-See App. E	See App. E	Completed

	Yes	No
Has the laboratory been audited annually in accordance with the FBI QAS?	X	
Has an external audit been conducted at least once every two years by a second agency?	X	
Have the internal and/or external audits performed been conducted using the FBI QAS audit document in effect at that time?	X	
Have audit findings and corrective actions been appropriately addressed and reviewed by the TL?	X	
Are previous internal and external audit documents retained and available for auditor inspection?	X	

Notes on QAS Audits

- Current version of the QAS audit document (9/1/2011) was utilized in 2017 internal QAS audit.

Personnel Education, Qualifications, & Training

- *See **Appendix A** for laboratory's organizational chart.*
- *See **Appendix B** for a list of current laboratory personnel and job descriptions.*

Visit Team:

☑ Spot-check laboratory personnel records to determine:

	Yes	No
Are the following records being maintained for qualified analysts & technicians?		
• Education and training?	X	
• Competency tests?	X	
• Qualification dates?	X	
• Continuing education?	X	
Prior to independent work, did analysts complete analysis of a range of samples routinely encountered in casework and/or database analysis?	X	
Did analysts successfully complete competency tests before beginning independent DNA analysis?	X	

Notes on Education, Qualifications, and Training

- All scientists maintain a training binder containing training, competency tests, continuing education and casework qualification records.

- Transcripts for all scientists are maintained.
  - Based on External QAS audits, all scientists meet the educational requirements for DNA Analyst.
  - DNA Technical Leader possesses an ASCLD LAB waiver.

- Newly trained scientist (2016) completed training and competency tests covering a variety of casework type samples and all laboratory methodologies.

- Seasoned scientists completed competency tests in each of the new methodologies as they were introduced into the laboratory (3500 CE, Identifiler, Investigator 24-Plex, Y-Filer, GMID-X, STRmix).

- 2018 - STRmix: All scientists successfully completed competency tests.

- Recent continuing education:
  - Vendor-sponsored workshops
  - Probabilistic genotyping software workshops
  - California Association of Criminalists DNA Study Group meetings
  - California Association of Criminalists seminars

- Scientist certifications
  - ABC Fellow Certification in Molecular Biology - Alan Keel (DNA Analyst/DNA Technical Leader) and Dave Hansen (DNA Analyst/Quality Assurance Manager)

Proficiency Testing

Visit Team:

☑ Spot-check the proficiency test (PT) records for laboratory personnel:

	Yes	No
Are the analysts and technicians being proficiency-tested semiannually?	X	
Does the laboratory maintain PT records?	X	
Does the laboratory evaluate PT results?	X	
Does the laboratory notify the participants of their PT results?	X	

Laboratory's PT provider(s): Collaborative Testing Services

Notes on Proficiency Testing

- Laboratory uses a staggered proficiency test schedule:
  - 1st scientist (Dinh) - January / July
  - 2nd scientist (Hansen) - March / September
  - 3rd scientist (Keel) - April / October

- Notification of proficiency test results is documented and each participant acknowledges receipt of result notification.

- Laboratory keeps proficiency test records readily accessible for two years and archives older proficiency test records.

Corrective Actions

*Please see **Appendix F** for laboratory's corrective action summary.*

Notes on Corrective Actions

- 2017 Corrective Actions:
  - 21849
    - Initiated by DNA TL on 1/17/2017
    - Action taken by Evidence Technician on 12/29/2016 & 1/4/2017
    - Followed-up by Evidence Technician on 4/25/2017
    - Signed off as completed by Finance/HR/Admin Director on 5/25/2017 and QA Manager on 5/30/2017
  - 21850
    - Initiated by Technical Director on 1/17/2017
    - Action taken by Technical Director and Evidence Technician on 1/9/2017
    - Followed-up by Evidence Technician on 1/17/2017
    - Signed off as completed by Finance/HR/Admin Director on 1/19/2017 and QA Manager on 1/27/2017
  - 21851
    - Initiated by DNA TL on 2/1/2017
    - Action taken by QA Manager on 1/31/2017
    - Followed-up by QA Manager on 2/1/2017
    - Signed off as completed by DNA TL and QA Manager on 2/1/2017

- 2018 Corrective Actions:
  - 21854
    - Initiated by QA Manager on 3/16/2018
    - Action taken by QA Manager on 2/16/2018
    - Followed-up - N/A
    - Signed off as completed by QA Manager on 3/16/2018
  - 21855
    - Initiated by DNA TL on 2/16/2018
    - Action taken by DNA TL on 2/16/2018
    - Followed-up - N/A
    - Signed off as completed by DNA TL and QA Manager on 2/16/2018

Technical Procedures

- *See **Appendix G** for a list of analytical/technical procedures relevant to forensic DNA testing and DNA databasing services currently performed by the laboratory.*
- *See **Appendix H** for a list of biological fluid screening methods, presumptive tests, and confirmatory tests currently performed by the laboratory.*

Visit Team:

☑ Document laboratory's analytical procedures for the extraction (E), quantitation (Q), PCR amplification (A) and DNA typing methods (T) listed in the pre-visit questionnaire:

Procedure	Method (e.g., E)	Rev.	Effective Date
Organic DNA Extraction Methods SOP	E	v10	Issued 2/1/17 Updated 1/17/18
EZ1 Advanced XL DNA Extraction/Organic Clean-up SOP	E	v3	Issued 12/20/17
Quantifiler Duo: Protocol for Total Human and Male DNA Quantification SOP	Q	v10	Issued 11/9/15
Investigator 24plex QS Short Tandem Repeat (STR) Analysis SOP	A, T	v1	Updated 3/15/18
Identifiler Short Tandem Repeat (STR) Analysis SOP	A, T	v4	Issued 10/10/16 Updated 3/14/18
Yfiler Y-Chromosome Short Tandem Repeat (STR) Analysis SOP	A, T	v4	Issued 10/11/16 Updated 3/14/18
Interpretation of DNA Profiles using STRmix Probabilistic Genotyping Software SOP	T	v1	2/5/18

	Yes	No
Any implemented technical procedures with pending validation studies?		X
Any implemented technical procedures that are pending TL approval?		X
Any implemented technical procedures pending additional validation studies?		X

☑ Document any technical procedures that have not been validated (N), currently being validated (P), currently being reviewed (R), or do not have a validation study available for review during this on-site visit (X):

Procedure	N, P, R, X	Comment
Quantiplex Pro DNA quant SOP	R	Version 1 in review

Notes on Technical Procedures

- Laboratory issues new version number of Standard Operating Procedures (SOP) when there are major changes to the procedure. This issue date and version number are captured underneath the SOP title. If there are only minor changes, version number will remain the same and the updated date is captured in the bottom left footer. In these instances, the version number and original issue date are still captured underneath the SOP title.
- PCR product gels may be run to guide in CE setup for sample analysis - (Identifiler only)
- Additional DNA-related procedures:
  - Microcon DNA Concentration Checklist - v2, issued 1/17/2018
  - Tuttnauer 2540M Autoclave SOP - v1, issued 12/14/2016
  - Accumet Model 10 pH Meter SOP - v5, issued 12/30/2016
  - PCR Product Evaluation Gel SOP - v2, issued 1/18/2013, updated 11/20/2013

- 7500 Calibration and Maintenance SOP - v3, issued 12/19/2016
- GeneAmp PCR System 9700 Thermal Cycler Performance Check SOP, v3, issued 12/16/2016
- Applied Biosystems 3500 Genetic Analyzer Maintenance SOP - v2, issued 6/1/2017
- FA 2000 Analytical Balance Calibration Check SOP - v1, issued 12/16/2016
- Refrigerator/Freezer Performance Check SOP - v5, issued 12/22/2017
- Heat Block Performance Check SOP - v4, issued 12/22/2017
- Thermometer Performance Check SOP - v4, issued 12/22/2017, updated 4/20/2018

- Serology Procedures (See ***Appendix H***)
  - Biological Screening: Blood SOP - v7, issued 1/4/2017
    - Ortho-tolidine
    - Tetramethylbenzidine
    - Phenolphthalin
    - Leucomalachite green
    - Luminol
    - Seratec HemDirect
  - Biological Screening: Saliva SOP - v6, issued 1/12/2017, updated 11/8/2017
    - Amylase diffusion
    - RSID - Saliva
  - Biological Screening: Semen SOP - v7, issued 1/5/2017
    - Brentamine test for Acid Phosphatase
    - Seratec PSA Semiquant
    - Microscopic examination with modified Christmas Tree Staining

Validations

See ***Appendix I*** for validation studies completed since laboratory's most recent external QAS audit.

Visit Team:

- ☑ Complete the appropriate table below for any validation studies listed in the laboratory's pre-visit questionnaire.
- ☑ List any additional validation studies documented during this on-site visit.

Validations documented during this on-site visit:

Validation	TL Approved	Summary available?
Identifiler, 3500 CE	10/11/2016	Yes - see Appendix I
Yfiler, 3500 CE	10/11/2016	Yes - see Appendix I
Investigator 24plex QS Amplification Kit	4/28/2017	Yes - see Appendix I
STRmix Probabilistic Genotyping	1/26/2018	Yes - see Appendix I

Validation studies that are currently pending:

Validation	Comment
Quantiplex Pro DNA quantification assay	Validation studies are completed; pending final authorization, training and competency testing

Notes on Validations

- **Identifiler and Y-Filer Amplification Kit, 3500 CE, GeneMapper ID-X 1.5**
  - Identifiler (29 cycles) and Y-Filer (30 cycles)
- **Investigator 24plex Amplification Kit, 3500 CE, GeneMapper ID-X 1.5**
  - Additional studies included analytical threshold and stochastic threshold.
  - Single source, two- and three person mixtures were analyzed at various ratios and template DNA amounts.
- **STRmix v2.5.11 using Investigator 24plex (30 Cycles), 3500 CE, and GeneMapper ID-X 1.5.**
  - Population data sets include ABI and FBI Extended for African American, Caucasian, Asian, Hispanic, SE Hispanic, SW Hispanic.
  - 100 24 Plex single source samples were used for stutter calculations; two-, three, and four- person mixtures, with varying ratios and template DNA amounts. Used for calculations on 24Plex samples only.

Interviews

Visit Team:

☑ Document any interviews conducted during this on-site visit.

Notes on Interviews
Nancy Dinh - Forensic DNA Analyst (2.5 years at laboratory) • DNA analysts process cases individually from beginning to end. • Evidence control o To checkout evidence, analysts scan individual scientist barcode and evidence barcode. o Return evidence, analysts scan individual scientist barcode and evidence barcode and enter storage location. o One evidence storage room with a refrigerator and freezer is dedicated to DNA evidence. A second evidence storage room is dedicated to evidence stored at room temperature, including firearms and firearms evidence. o Bloodborne pathogen training is completed during initial employment training and annually. The Health and Safety Officer manages this training. • Laboratory processing and casework o PCR Product gels no longer conducted with implementation of 24plex and 3500. Were previously used with Identifiler. o Statistics ▪ Identifiler - CPI/Restricted CIP, RMP, modified RMP, and RMNE, depending on the sample data. ▪ 24plex - LR (STRmix), RMP/RMNE (GeneMapper ID-X) • Procedures o Changes and updates to procedures and forms are identified through scientist discussion. o New or modified procedures are announced to DNA analysts. o Old procedures and forms stored in the laboratory are immediately replaced by the Quality Assurance Manager upon new release. • Corrective actions o If she discovered an issue (such as contamination), she would notify Technical Leader and Quality Assurance Manager immediately. o She would then have a discussion with Technical Leader and Quality Assurance Manager to determine root cause of issue and corrective action. o Corrective Action form would be initiated by Technical Leader or Quality Assurance Manager.
Nichole Irizarry - Evidence Technician/Administration (6 years at laboratory) • Evidence Receipt o Evidence arrives to the laboratory in a number of manners including scheduled drop-offs, courier service or shipping service (FedEx or UPS). o Evidence receipt is conducted at her desk. o She captures shipping label (if applicable) and notes if package was received under proper seal. o Tracking data is compared and she ensures that laboratory was expecting package. o Each item is inventoried and entered into CRYM. A barcode is affixed to each item. ▪ Individual items are not opened during this process. o Items are then transferred to storage areas. She scans her individual barcode, the evidence barcode and then enters the storage location. o Analysts are notified of evidence receipt. • Evidence Return o Notified by the analyst to return evidence. o Extracts are generally not returned, except if requested. o FAS produced extracts are retained indefinitely. o Evidence is returned, generally through FedEx, within 24 hours of notification to return. o Tracking forms • Bloodborne pathogen training is completed annually.
Alan Keel - DNA Technical Leader/DNA Analyst • Legacy numbering system used for the training manual. • Corrective Action process

- Finding from audit, lab events, client concerns may trigger a corrective action.
- Supervisor starts process.
- A group discussion ensues to determine root cause and plan.
- Casework/DNA corrective action form should be started by the DNA Technical Leader and signed off when completed.
- Discussed required documentation of DNA Technical Leader approval prior to implementation of corrective action.

• Laboratory processing and casework
- Identifiler- Statistics RMP, CPI
  - Statistics
    - STRmix is not used with Identifiler
    - RMP, CPI
      - No dropout for CPI
      - Restricted CPI
  - Identifiler may be run when 24plex does not generate complete results at larger loci.

• Evidence Receipt and Control
- Evidence is inventoried at evidence technician's desk or in the laboratory.
- Each item receives an unique barcode.
- Initial inventory is based upon client's inventory. Items of evidence are not opened by evidence technician.

• Bloodborne pathogen training is completed annually.

David Hansen - Quality Assurance Manager/DNA Analyst

• Serves as Quality Assurance Manager for Forensic Science Division.
• Laboratory issues new version number to procedures for major revisions. Procedures that have only minor changes are updated, but retain current version number. Updated date is captured in footer.

Review & Approval of On-site Vendor Laboratory Program (OVP) Visit

Standard 17.1.1 requires laboratories that have entered into an outsourcing agreement or have accepted data from a vendor laboratory to maintain documentation of the vendor laboratory's compliance with the Quality Assurance Standards (i.e., vendor laboratory's external QAS audit report, the vendor laboratory's responses, and/or follow-up actions to any findings detailed in the report) and the accreditation requirements of federal law.

Forensic Standard 17.7.1 / Databasing Standard 17.4.3.1 requires a documented initial on-site visit prior to the vendor laboratory's beginning of DNA analysis for an NDIS laboratory and Forensic Standard 17.7.2 / Databasing Standard 17.4.3.3 requires an annual on-site visit if the outsourcing agreement extends beyond one year.

NDIS participating laboratories may accept an FBI OVP visit for compliance with Standard 17.1.1 and the QAS initial/annual on-site visit requirements. This form shall be used to document the review and approval of such on-site visit and shall be retained with the Visit Summary as documentation to demonstrate compliance in an external QAS audit.

IMPORTANT

The OVP is not an approval or endorsement by the FBI.

It is incumbent on the NDIS laboratory to review the information in the Visit Summary and pertinent supplemental documentation provided by the vendor laboratory for this OVP visit to assess the vendor laboratory's ability to perform outsourced work and follow up with the vendor laboratory for additional information/documentation, as necessary:

OVP Visit Number:	OVP2018-FAS
OVP Visit of:	Forensic Analytical Sciences, Inc.
Dates of Visit:	4/16/2018 – 4/17/2018
Visit Conducted by:	Jennifer S. Mihalovich, Oakland PD Criminalistics Laboratory Gina M. Sola, FBI Laboratory – CODIS Unit

To be completed by the DNA Technical Leader to document review and approval:

I have reviewed the Visit Summary and the pertinent supplemental documentation on the CJIS-SEN for this on-site visit on ___/___/_____.

I hereby accept this on-site visit as my laboratory's ____ initial on-site visit / ____annual on-site visit of the vendor laboratory.

Signature: _____ Date: _____

Name (Print): _____

Laboratory: _____

THE FBI QUALITY ASSURANCE STANDARDS

AUDIT FOR

FORENSIC DNA TESTING LABORATORIES

IN ACCORDANCE WITH

THE QUALITY ASSURANCE STANDARDS

FOR

FORENSIC DNA TESTING LABORATORIES

EFFECTIVE SEPTEMBER 1, 2011

An Audit of: Forensic Analytical Science, Inc.

Dates of Audit: January 29 – 30, 2018

Auditor(s):

A. Robyn Quinn	
(Name)	(Signature)
Alexandria Bradley	Alexandria Bradley
(Name)	(Signature)
(Name)	(Signature)

Table of Contents

QUALITY ASSURANCE AUDIT DOCUMENT

INTRODUCTION

The DNA Identification Act of 1994 required the formation of a panel of distinguished professionals, from the public and private sectors, to address issues relevant to forensic DNA applications. This panel, titled the DNA Advisory Board (DAB), first convened in 1995. An early mission of the DAB was to develop and implement quality assurance standards for use by forensic DNA testing laboratories. The scope was quickly expanded to include forensic DNA databasing laboratories as well. The DAB fulfilled this role, recommending separate documents detailing quality assurance standards for both applications. The "Quality Assurance Standards for Forensic DNA Testing Laboratories" and the "Quality Assurance Standards for Convicted Offender DNA Databasing Laboratories" were issued by the Director of the Federal Bureau of Investigation in October 1998 and April 1999, respectively. Both documents have become benchmarks for assessing the quality practices and performances of DNA laboratories throughout the country. When the Federal DNA Advisory Board's statutory term expired, it transferred responsibility for recommending revisions of these Quality Assurance Standards to the Scientific Working Group on DNA Analysis Methods (SWGDAM).

The DNA Identification Act of 1994 also required that the FBI Laboratory ensure that all DNA laboratories that are federally operated, receive federal funds or participate in the National DNA Index System (NDIS) demonstrate compliance with the standards issued by the FBI. Typically, documentation of a laboratory's compliance with a stated standard has been measured through an audit process. Such audits have been performed by forensic scientists, either internal or external to the laboratory, and serve to identify compliance with established standards.

Since the issuance of the original Quality Assurance Standards (QAS), the lack of a defined, uniform interpretation guide for such standards presented a potential problem between laboratories and auditors attempting to determine levels of compliance. In an effort to satisfy the responsibilities assigned through the DNA Identification Act and attempt to minimize interpretation variability, the FBI Laboratory developed an audit document for assessing compliance with the required standards of both documents. Recognizing the broad application of such an undertaking, the FBI Laboratory solicited input from multiple forensic DNA laboratories when developing the original Audit Document. This input included collaboration with members from two prominent international inspection/accreditation entities, the American Society of Crime Laboratory Directors/ Laboratory Accreditation Board (ASCLD/LAB) and the National Forensic Science Technology Center (NFSTC)[1]. To this end, this Audit Document was created by

[1] The National Forensic Science Technology Center (NFSTC) does not provide accreditation services. The two approved accrediting agencies for NDIS participation purposes are: the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) and Forensic Quality Services (FQS).

the FBI Laboratory with the input, guidance and consensus from the above-mentioned groups.

The Audit Document defines and interprets each standard, with added discussion points clarifying the criteria necessary for compliance. Additionally, the document is structured such that criteria, which overlap between the FBI issued standards and the corresponding ASCLD/LAB elements, share a consistent interpretative view.

Effective with the July 2009 Audit Documents and for audits conducted in accordance with the Quality Assurance Standards effective July 1, 2009, separate Audit Documents will be used for forensic and databasing laboratories. If a laboratory performs both functions, each Audit Document must be completed and submitted to the laboratory at the conclusion of the audit process.

The rating system for assessing the laboratory with respect to each standard contains the choices of "Yes," "No" or "Not Applicable (N/A)." As indicated earlier, discussion sections follow standards, as appropriate, and serve to clarify the interpretation necessary for compliance. A comment section is also provided following the discussion areas, affording auditors the opportunity to reference information that may have value in the audit process (such as listing the reason for a "No" or "N/A"). In Appendix A, the findings associated with the audit will be detailed and summarized by the auditor, with an area available for response to such findings by the laboratory. Notes or comments, including observations and recommendations are better suited to be mentioned during the exit briefing with laboratory personnel or in a separate letter/memorandum to the laboratory so that these comments are not confused with comments relating to a Finding or an explanation of why a particular standard is not applicable.

The revised discussions are not to be applied retroactively and will take effect September 1, 2011.

Instructions to Audit Team Leaders and Auditors

Thank you for participating in this important process intended to evaluate compliance with minimum standards for a quality program for performing forensic DNA analysis.

In a departure from the practices for completion of an audit under the original Quality Assurance Standards where the FBI Audit Document covered both forensic and databasing laboratories, for audits conducted in accordance with the Quality Assurance Standards effective July 1, 2009, separate Audit Documents will be used for forensic and databasing laboratories. If a laboratory performs both functions, each Audit Document must be completed and submitted to the laboratory at the conclusion of the audit process.

Once an external audit has been scheduled, the audit team leader should provide the laboratory being audited with the Checklist contained on the following pages and a request to provide this information as soon as possible. The audit team leader shall also request a certification (contained in Appendix C) from each auditor on the team prior to the beginning of the audit. The audit team leader shall review the checklist completed by the laboratory to ensure that the audit team contains the appropriate number of members to audit the laboratory and that the team members possess the necessary expertise required to audit that laboratory. An auditor or his or her employer who has a contractual relationship (exclusive of audits) with the laboratory being audited shall disclose this fact and recuse himself or herself from performing the audit. The audit team leader shall review the auditors' certifications for any potential conflicts of interest.

Prior to the commencement of the audit, please provide the laboratory with a copy of the auditor's certification for each auditor participating in the audit.

As a general rule, compliance with a standard is assessed through a review of the laboratory's documentation and interviews with laboratory staff. Documents may be in hard copy, electronic or a combination of both formats. Certificates of qualifications shall not be considered documentation of compliance with these Standards. Laboratory personnel's compliance with these standards shall be documented by the auditor(s) in Appendix D. A review of case reports for the laboratory shall include a number of case files randomly selected for each DNA analyst. As appropriate, a minimum of three to five cases per DNA analyst should be reviewed.

When conducting an audit, please keep in mind the following general guidelines:

- Potential issues concerning compliance should be directed to the laboratory's designated points of contact.

- Comments on the laboratory's operations should be reserved for the audit document if a "No" or "N/A" is marked and/or the exit interview with laboratory management; comments should not be made to laboratory staff.

- Contested or contentious issues should be brought to the attention of your audit team leader for follow-up, as necessary.

As a general rule,

- Issues deemed minor by the audit team that are addressed during the course of an audit (for example: date or position revisions of a laboratory's organizational chart) may be determined by the auditor to satisfy a noncompliance so that a "Yes" is marked for that Standard.

- Comments should not be included for Standards marked "Yes".

- Comments shall be included for Standards marked "No" or "N/A".

    - For a Standard marked "No", the comment shall describe the noncompliance with sufficient detail so that the laboratory can develop an appropriate corrective action for compliance.

    - For a Standard marked "N/A", the comment shall describe why that Standard is not applicable to that laboratory.

Questions concerning this Audit Document or a specific Standard should be directed to the FBI's Combined DNA Index System (CODIS) Unit.

After the audit is completed, the audit team leader or auditor(s) briefs DNA laboratory management and the DNA technical leader regarding the results. This briefing should verbally detail specific findings (noncompliances) and observations (general comments and/or recommendations), as well as recognize commendable performances. The written report should be prepared by the audit team leader and/or auditor(s) and sent to the laboratory within 30 days of the audit. The Audit Document Report consists of the completed Audit Document Checklist, with any areas of noncompliance listed under the Findings Section of Appendix A. All findings must be clearly identified and referenced to the appropriate standard.

Recommendations must not be included in the Audit Document Report. Notes or comments, including observations and recommendations are better suited to be mentioned during the exit briefing with laboratory personnel or in a separate letter/memorandum to the laboratory so that these comments are not confused with comments relating to a Finding or an explanation of why a particular standard is not applicable.

Checklist of General Laboratory Information

1. Name of Laboratory: Forensic Analytical Sciences, Inc.

2. Federal ☐ / State ☐ / Regional ☐ / County ☐ / Local ☐ / Other: Private Laboratory (Choose one)

3. Approximate Population Size Served: N/A

4. Uses a Contract Laboratory: Yes ☐ / No ☒
   Name of Contract Laboratory(ies): N/A

5. NDIS Participant: Yes ☐ / No ☒

6. Applying for NDIS Participation: Yes ☐ / No ☐ / NA ☒ (Choose one)

7. Technologies Used: (Choose those that apply)
   STRs ☒
   YSTRs ☒
   MtDNA ☐
   Other:

8. Number of staff:
   DNA analysts: Staff: 4 Contract employees:
   DNA trainees: Staff: 0 Contract employees:
   DNA technicians: Staff: 0 Contract employees:
   Laboratory support personnel: Staff: 0 Contract employees:
   DNA technical leader: Alan Keel
   On site: Yes ☒ / No ☐
   Casework CODIS administrator: N/A

9. Last audit conducted on: July 25, 2017
   External ☐ / Internal Audit ☒ (Choose one)

10. Audit Document Discussion Used (Revision Date): September 2011

Standard 1. Scope

The standards describe the quality assurance requirements that laboratories performing forensic DNA testing or using the Combined DNA Index System (CODIS) shall follow to ensure the quality and integrity of the data generated by the laboratory. These standards also apply to vendor laboratories that perform forensic DNA testing in accordance with Standard 17. These standards do not preclude the participation of a laboratory, by itself or in collaboration with others, in research and development on procedures that have not yet been validated.

Standard 2. Definitions

As used in these standards, the following terms shall have the meanings specified:

Accredited laboratory is a DNA laboratory that has received formal recognition that it meets or exceeds a list of standards, including the FBI Director's Quality Assurance Standards, to perform specific tests, by a nonprofit professional association of persons actively involved in forensic science that is nationally recognized within the forensic community in accordance with the provisions of the Federal DNA Identification Act (42 U.S.C. § 14132) or subsequent laws.

Accuracy is the degree of conformity of a measured quantity to its actual (true) value.

Administrative review is an evaluation of the report and supporting documentation for consistency with laboratory policies and for editorial correctness.

Analyst (or equivalent role, position, or title as designated by the Laboratory Director) is an employee or contract employee, that has successfully completed the laboratory's training requirements for casework sample analysis, passed a competency test, and has entered into a proficiency testing program according to these Standards. This individual conducts and/or directs the analysis of forensic samples, interprets data, and reaches conclusions.

Analytical documentation is the documentation of procedures, standards, controls, and instruments used; observations made; results of tests performed; and charts, graphs, photos, and other documentation generated which are used to support the analyst's conclusions.

Analytical procedure is an orderly, step-by-step process designed to ensure operational uniformity and to minimize analytical drift.

Annual is once per calendar year.

Audit is an inspection used to evaluate, confirm, or verify activity related to quality.

Biochemistry is the study of the nature of biologically important molecules in living systems, DNA replication and protein synthesis, and the quantitative and qualitative aspects of cellular metabolism.

Calibration is the set of operations which establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system, or values represented by a material, and the corresponding known values of a measurement.

Casework CODIS administrator (or equivalent role, position, or title as designated by the Laboratory Director) is an employee of the laboratory responsible for administration and security of the laboratory's CODIS at a laboratory performing DNA analysis on forensic and casework reference samples.

Casework reference sample is biological material obtained from a known individual and collected for purposes of comparison to forensic samples.

CODIS is the Combined DNA Index System administered by the FBI. CODIS links DNA evidence obtained from crime scenes, thereby identifying serial criminals. CODIS also compares crime scene evidence to DNA profiles from offenders, thereby providing investigators with the identity of the putative perpetrator. In addition, CODIS contains profiles from missing persons, unidentified human remains, and relatives of missing persons. There are three levels of CODIS: the Local DNA Index System (LDIS), used by individual laboratories; the State DNA Index System (SDIS), used at the state level to serve as a state's DNA database containing DNA profiles from LDIS laboratories; and the National DNA Index System (NDIS), managed by the FBI as the nation's DNA database containing all DNA profiles uploaded by participating states.

Competency test(s) is a written, oral, and/or practical test or series of tests designed to establish that an individual has demonstrated achievement of technical skills and met minimum standards of knowledge necessary to perform forensic DNA analysis.

Competency is the demonstration of technical skills and knowledge necessary to perform forensic DNA analysis successfully.

Contamination is the unintentional introduction of exogenous DNA into a DNA sample or PCR reaction.

Continuing education is an educational activity (such as a class, lecture series, conference, seminar, or short course) that is offered by a recognized organization or individual that brings participants up-to-date in their relevant area of knowledge.

Contract employee is an individual that performs DNA typing and/or analytical support services to the NDIS participating laboratory. The person performing these services must meet the relevant qualifications for the equivalent position in the NDIS participating laboratory. A contract employee cannot serve as a casework CODIS Administrator or technical leader and cannot be counted as a full-time qualified DNA analyst for purposes of satisfying the definition of a laboratory. Employment of a contract employee by multiple NDIS participating laboratories and/or vendor laboratories shall be disclosed and shall only be permitted subject to approval by the technical leader of the NDIS participating laboratory for which the contract employee is performing DNA typing and/or analytical services.

Coursework is an academic class officially recognized and taught through a college or university program in which the participating student successfully completed and received one or more credit hours for the class.

Critical equipment or instruments are those requiring calibration or a performance check prior to use and periodically thereafter.

Critical reagents are determined by empirical studies or routine practice to require testing on established samples before use on evidentiary or casework reference samples.

Developmental validation is the acquisition of test data and determination of conditions and limitations of a new or novel DNA methodology for use on forensic and/or casework reference samples.

Differential amplification is the selection of one target region or locus over another during the polymerase chain reaction. Differential amplification can also arise between two alleles within a single locus if one of the alleles has a mutation within a PCR primer-binding site, causing this allele to be copied less efficiently because of the primer-template mismatch.

DNA record is a database record that includes the DNA profile as well as data required to manage and operate NDIS, i.e., the Originating Agency Identifier, which serves to identify the submitting agency; the Specimen Identification Number; and DNA personnel associated with the DNA profile analyses.

***DNA type* (also known as a DNA profile)** is the genetic constitution of an individual at defined locations (also known as loci) in the DNA. A DNA type derived from nuclear DNA typically consists of one or two alleles at several loci (e.g., short tandem repeat loci). The DNA type derived from mitochondrial DNA is described in relation to the revised Cambridge Reference Sequence (Nature Genetics [1999] 23:147).

Employee is a person (1) in the service of the applicable federal, state, or local government, subject to the terms, conditions, and rules of federal, state, or local employment and eligible for the federal, state, or local benefits of service; or (2) formerly in the service of a federal, state, or local government who returns to service in the agency on a part-time or temporary basis. For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions, and rules of employment of the vendor laboratory.

FBI is the Federal Bureau of Investigation, the federal agency authorized by the DNA Identification Act of 1994 to issue quality assurance standards governing forensic DNA testing laboratories and to establish and administer the National DNA Index System (NDIS).

Forensic DNA analysis is the process of identification and evaluation of biological evidence in criminal matters using DNA technologies.

Forensic sample is a biological sample originating from and associated with a crime scene. For example, a sample associated with a crime scene may include a sample that has been carried away from the crime scene.

Genetics is the study of inherited traits, genotype/phenotype relationships, and population/species differences in allele and genotype frequencies.

Guidelines are a set of general principles used to provide direction and parameters for decision making.

Integral component is that portion of an academic course that is so significant and necessary to the understanding of the subject matter as a whole that the course would be considered incomplete without it.

Internal validation is the accumulation of test data within the laboratory to demonstrate that established methods and procedures perform as expected in the laboratory.

Known samples are biological material whose identity or type is established.

Laboratory is a facility (1) employing at least two full-time employees who are qualified DNA analysts and (2) having and maintaining the capability to perform the DNA analysis of forensic samples and/or casework reference samples at that facility.

Laboratory support personnel (or equivalent role, position, or title as designated by the Laboratory Director) are employees or contract employees who perform laboratory duties exclusive of analytical techniques on forensic or database samples.

Methodology is used to describe the analytical processes and procedures used to support a DNA-typing technology: for example, extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kit; and platform (capillary electrophoresis, real-time gel and end-point gel systems).

Molecular biology is the study of the theories, methods, and techniques used in the study and analysis of gene structure, organization, and function.

Multilaboratory system is used to describe an organization that has more than one laboratory performing forensic DNA analysis.

Multiplex system is a test providing for simultaneous amplification of multiple loci that is either prepared commercially or by a laboratory.

Negative amplification control is used to detect DNA contamination of the amplification reagents. This control consists of only amplification reagents without the addition of template DNA.

NIST is the National Institute of Standards and Technology.

On-site visit is a scheduled or unscheduled visit to the vendor laboratory work site by one or more representatives of an NDIS participating laboratory who is(are) a qualified or previously qualified DNA analyst(s) in the technology, platform and typing amplification test kit used to generate the DNA data, or designated FBI employee(s), to assess and document the vendor laboratory's ability to perform analysis on outsourced casework.

Outsourcing is the utilization of a vendor laboratory to provide DNA services in which the NDIS participating laboratory takes or retains ownership of the DNA data for entry into CODIS, when applicable. Outsourcing does not require the existence of a contractual agreement or the exchange of funds.

Ownership occurs when any of the following criteria are applicable:

1. The originating laboratory will use any samples, extracts, or materials from the vendor laboratory for the purposes of forensic testing (i.e., a vendor laboratory prepares an extract that will be analyzed by the originating laboratory);

2. The originating laboratory will interpret the data generated by the vendor laboratory;

3. The originating laboratory will issue a report on the results of the analysis; or

4. The originating laboratory will enter or search a DNA profile in CODIS from data generated by the vendor laboratory.

Performance check is a quality assurance measure to assess the functionality of laboratory instruments and equipment that affect the accuracy and/or validity of forensic sample analysis.

Platform is the type of analytical system utilized to generate DNA profiles, such as capillary electrophoresis, real-time gel, and end-point gel instruments or systems.

Polymerase Chain Reaction (PCR) is an enzymatic process by which a specific region of DNA is replicated during repetitive cycles, which consist of the following:

1. Denaturation of the template;

2. Annealing of primers to complementary sequences at an empirically determined temperature; and

3. Extension of the bound primers by a DNA polymerase.

Positive amplification control is an analytical control sample that is used to determine if the PCR performed properly. This control consists of the amplification reagents and a known DNA sample.

Precision characterizes the degree of mutual agreement among a series of individual measurements, values, and/or results.

Preferential amplification is the unequal sampling of the two alleles present in a heterozygous locus primarily due to stochastic (random) fluctuation arising when only a few DNA molecules are used to initiate the polymerase chain reaction.

Procedure (protocol, standard operating procedure, or other equivalent) is an established practice to be followed in performing a specified task or under specific circumstances.

Proficiency testing is a quality assurance measure used to monitor performance and identify areas in which improvement may be needed. Proficiency tests may be classified as:

1. An internal proficiency test, which is produced by the agency undergoing the test.

2. An external proficiency test, which may be open or blind, is a test obtained from an approved proficiency test provider.

Qualified auditor is a current or previously qualified DNA analyst who has successfully completed the FBI's DNA auditor training course.

Quality system is the organizational structure, responsibilities, procedures, processes, and resources for implementing quality management.

Quantitative PCR is a method of determining the concentration of DNA in a sample by use of the polymerase chain reaction.

Reagent blank control is an analytical control sample that contains no template DNA and is used to monitor contamination from extraction to final fragment or sequence analysis. This control is treated the same as, and parallel to, the forensic and/or casework reference samples being analyzed.

Reference material (certified or standard) is a material for which values are certified by a technically valid procedure and accompanied by, or traceable to, a certificate or other documentation which is issued by a certifying body.

Reproducibility is the ability to obtain the same result when the test or experiment is repeated.

Review is an evaluation of documentation to check for consistency, accuracy, and completeness.

Second agency is an entity or organization external to and independent of the laboratory.

Semiannual is used to describe an event that takes place two times during one calendar year, with the first event taking place in the first six months of that year and the second event taking place in the second

six months of that year, and where the interval between the two events is at least four months and not more than eight months.

Service is the performance of those adjustments or procedures specified which are to be performed by the user, manufacturer, or other service personnel in order to ensure the intended performance of instruments and equipment.

Technical leader (or equivalent role, position, or title as designated by the Laboratory Director) is an employee who is accountable for the technical operations of the laboratory and who is authorized to stop or suspend laboratory operations.

Technical review is an evaluation of reports, notes, data, and other documents to ensure there is an appropriate and sufficient basis for the scientific conclusions.

Technical reviewer is an employee or contract employee who is a current or previously qualified analyst in the methodology being reviewed that performs a technical review of, and is not an author of, the applicable report or its contents.

Technician (or equivalent role, position, or title as designated by the Laboratory Director) is an employee or contract employee who performs analytical techniques on forensic samples under the supervision of a qualified analyst. Technicians do not interpret data, reach conclusions on typing results, or prepare final reports.

Technology is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA.

Test kit is a preassembled set of reagents that allows the user to conduct a specific DNA extraction, quantification, or amplification.

Traceability is the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons.

Underlying scientific principle is a rule concerning a natural phenomenon or function that is a part of the basis used to proceed to more detailed scientific functions.

Validation is a process by which a procedure is evaluated to determine its efficacy and reliability for forensic casework analysis and includes the following:

1. Developmental validation is the acquisition of test data and determination of conditions and limitations of a new or novel DNA methodology for use on forensic samples.

2. Internal validation is an accumulation of test data within the laboratory to demonstrate that established methods and procedures perform as expected in the laboratory.

Vendor laboratory is a governmental or private laboratory that provides DNA analysis services to another laboratory or agency and does not take ownership of the DNA data for purposes of entry into CODIS.

Work product is the material that is generated as a function of analysis, which may include extracts, amplified product, and amplification tubes or plates as defined by the laboratory.

Standard 3. Quality Assurance Program

		Yes	No	N/A
3.1	For the DNA laboratory's quality assurance program:	☒	☐	☐
	a. Does the DNA laboratory have an established and maintained documented quality system that is appropriate to the testing activities?	☒	☐	☐
	b. Is the quality system equivalent to or more stringent than what is required by these Standards?	☒	☐	☐

Discussion

To successfully satisfy Standard 3.1, compliance must be demonstrated with all of the subcategories of Standard 3.1.1.

A laboratory must have and follow a documented quality system.

*A **quality system** is the organizational structure, responsibilities, procedures, processes, and resources for implementing quality management.* This system must be appropriate to the testing activities performed by the laboratory. Various approaches may be used to demonstrate how a laboratory may accomplish this, as long as the system is clearly defined. A laboratory may have any of the following: (1) a system-wide quality manual; (2) multiple manuals that address individual elements of the quality system; or (3) a unit-specific quality manual that may reference the elements that are not contained within its unit's quality manual, but are contained within the system-wide manual. A laboratory may choose the format in which it maintains its quality system, as long as it is on-site and readily available to DNA personnel.

A laboratory's quality manual must be equivalent to or more stringent than the "Quality Assurance Standards (QAS) for Forensic DNA Testing Laboratories." If a laboratory has requirements more stringent than the QAS, it must be audited to the more stringent requirements. For example, if a laboratory is in compliance with these standards, but is not adhering to its own more stringent requirements, a "No" shall be marked.

Comment

		Yes	No	N/A
3.1.1	Is the quality system documented in a manual that includes or references the following elements:	☒	☐	☐
3.1.1.1	Goals and objectives?	☒	☐	☐
3.1.1.2	Organization and management?	☒	☐	☐
3.1.1.3	Personnel?	☒	☐	☐
3.1.1.4	Facilities?	☒	☐	☐
3.1.1.5	Evidence control?	☒	☐	☐
3.1.1.6	Validation?	☒	☐	☐
3.1.1.7	Analytical procedures?	☒	☐	☐
3.1.1.8	Equipment calibration and maintenance?	☒	☐	☐
3.1.1.9	Reports?	☒	☐	☐
3.1.1.10	Review?	☒	☐	☐
3.1.1.11	Proficiency testing?	☒	☐	☐
3.1.1.12	Corrective action?	☒	☐	☐
3.1.1.13	Audits?	☒	☐	☐
3.1.1.14	Safety?	☒	☐	☐
3.1.1.15	Outsourcing?	☒	☐	☐

Discussion

Standards 3.1.1.1 through 3.1.1.15 are elements of the quality system that a laboratory must ensure are documented or referenced in a quality manual(s). The laboratory may rely on laboratory-wide policies, procedures, and guidelines that address such elements, but must ensure that the laboratory references them. A laboratory must remember that any document referenced within the quality manual must be available on-site. The following are the elements as defined by 3.1.1.1 through 3.1.1.15 and what should be addressed within each of those elements. Further requirements for each element will be found within the corresponding standard.

- **Goals and objectives** must define, establish, or reference the goals and objectives for the laboratory.

- **Organization and management** must define, establish, or reference the organization and management structure of the laboratory, the interrelationship of the various DNA positions, as well as the responsibilities of personnel.

- **Personnel** must define, establish, or reference the training and qualifications required for each position within the laboratory and describe the continuing education program for the laboratory.

- **Facilities** must define, establish, or reference the laboratory's practices or procedures for laboratory security and its approach for maintaining the integrity of DNA analyses and evidence examination.

- **Evidence control** must define, establish, or reference the laboratory's procedures for handling and preserving evidence as well as the laboratory's definitions for what constitutes work product and evidence.

- **Validation** must define, establish, or reference the practices and procedures for implementing new methods used by the laboratory and the process for incorporating those new procedures.

- **Analytical procedures** must define, establish, or reference the use of current and approved standard operating procedures for validated methods.

- **Equipment calibration and maintenance** must define, establish, or reference the laboratory's program for conducting performance checks and calibrations of equipment and instruments and the laboratory must maintain a list of its critical instruments and/or equipment.

- **Reports** must define, establish, or reference the laboratory's procedure for how it maintains its case files, how it generates its laboratory reports, and its policy for describing how the laboratory maintains confidentiality and privacy when applicable to reports, case files, and DNA records and databases.

- **Review** must define, establish, or reference how the laboratory performs its technical and administrative review of all case files, the qualifications of personnel who perform reviews, review procedures associated with the upload of DNA data, as well as include a documented program for the annual testimony monitoring of its analysts.

- **Proficiency testing** must define, establish, or reference the laboratory's program for administering external proficiency tests to DNA personnel to the full extent in which they participate in casework.

- **Corrective action** must define, establish, or reference the laboratory's process for corrective action in casework and proficiency testing.

- **Audits** must define, establish, or reference the laboratory's program for participation in internal and external DNA audits.

- **Safety** must define, establish, or reference the laboratory's safety program.

- **Outsourcing** must define, establish, or reference the laboratory's procedures for outsourcing samples and ensuring the integrity of those samples. Laboratories shall address this element, regardless of whether or not the laboratory outsources. For example, outsourcing may be referenced in the quality manual as "Not Applicable or NA" if the laboratory does not outsource any analyses.

Comment

		Yes	No	N/A
3.2	Does the laboratory maintain and follow a procedure regarding document retention that specifically addresses:	☒	☐	☐

a. Proficiency tests?	Yes	☒	No	☐
b. Corrective action?	Yes	☒	No	☐
c. Audits?	Yes	☒	No	☐
d. Training records?	Yes	☒	No	☐
e. Continuing education?	Yes	☒	No	☐
f. Case files?	Yes	☒	No	☐
g. Court testimony monitoring?	Yes	☒	No	☐

Discussion

To successfully satisfy Standard 3.2, compliance must be demonstrated with all of the subcategories of Standard 3.2 (a-g).

The laboratory may address document retention through a single policy or a combination of several policies. However, document retention regarding each of the above-listed documents must be addressed.

Comment

		Yes	No	N/A
3.3	Is the quality system as applicable to DNA reviewed annually (calendar year) independent of the audit required by Standard 15, and is the review performed under the direction and documented approval of the technical leader?	☒	☐	☐

Discussion

The laboratory must demonstrate that an annual review of its quality system is performed under the direction and documented approval of its technical leader. This review must include the review of the quality manual, training manual, and procedures used by the laboratory and must be independent of the required annual audit. Annual review reports may identify areas in need of attention and provide the basis for changes to the quality system. Such changes may include new or improved quality-control activities for monitoring the quality of the laboratory work product. Additionally, significant modifications of forensic DNA testing, such as the incorporation of a new technology (***technology*** *is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA)*, may necessitate reviewing or updating the quality system.

An annual review of the quality system is important for ensuring that measures are being taken by the laboratory to continually provide the highest quality of service.

This review must be independent of the audit requirement as stated in Standard 15.

Comment

Standard 4. Organization and Management

		Yes	No	N/A
4.1	Does the laboratory have:	☒	☐	☐
4.1.1	A managerial staff with the authority and resources needed to discharge its duties and meet the requirements of the Standards in this document?	☒	☐	☐
4.1.2	A technical leader who is accountable for the technical operations?	☒	☐	☐
	a. Have at least one technical leader in a multi - laboratory system?	☐	☐	☒
4.1.3	A casework CODIS administrator who is accountable for CODIS on-site at each individual laboratory facility using CODIS?	☐	☐	☒
4.1.4	At least two full-time employees who are qualified DNA analysts?	☒	☐	☐
4.1.5	Documentation that specifies the responsibility, authority, and interrelation of all personnel who manage, perform, or verify work affecting the validity of the DNA analysis?	☒	☐	☐
4.1.6	A documented contingency plan that is approved by laboratory management if the technical leader position is vacated?	☒	☐	☐

Discussion

Laboratory *is a facility (1) employing at least two full-time employees who are qualified DNA analysts and (2) having and maintaining the capability to perform the DNA analysis of forensic samples and/or casework reference samples at that facility.*

To successfully satisfy Standard 4.1, compliance must be demonstrated with all of the subcategories of Standard 4.1.

As a tool in the evaluation of the management standards, laboratories must maintain a current organizational chart. The organizational chart may reference specific personnel by name with their specific position assignments (e.g., technical leader, casework CODIS administrator), or the organizational chart may reference the specific position assignments. If the organizational chart references the specific position assignments, it must be augmented with the job description for the member of the laboratory assigned to the specific position. Job descriptions must be current and available for all laboratory personnel, accurately defining the technical and/or administrative responsibilities associated with each position (see Standard 5 - Personnel).

The role of a technical leader does not preclude, for example, the existence of additional program or technical leaders, each of whom may be assigned a subset of clearly defined duties (e.g., training program manager, quality assurance program manager). However, a single DNA technical leader, as defined in the laboratory's organizational chart, will retain the ultimate DNA-related authority and oversight responsibility. Standard 5.2.3.1 and its subcategories must be satisfied in order to demonstrate that the technical leader is accountable for the technical operations.

Standard 5.3.5 must be satisfied in order to demonstrate that the casework CODIS administrator is accountable for CODIS operations on-site at each individual laboratory facility using CODIS.

Standards 5.4 and 5.4.1 and its subcategories must be satisfied in order to demonstrate that the DNA analysts are full-time employees and are qualified. Contract employees cannot be counted when determining if a laboratory satisfies the two full-time employee requirement of Standard 4.1.4.

The laboratory must have a documented contingency plan in place, approved by laboratory management, for a vacancy in the technical leader position. This plan may be a single policy or a combination of several policies. A contingency plan should include or address the appropriate notifications naming an individual who may serve in this position, the time period that individual may serve, and how the laboratory will proceed if no one is qualified.

Comment

Standard 4.1.2.a is marked N/A because the laboratory is not a multi-laboratory system.

Standard 4.1.3 is marked N/A because the laboratory is a private laboratory and does not participate in CODIS.

Standard 5. Personnel

		Yes	No	N/A
5.1	Do laboratory personnel have the education, training, and experience commensurate with the examination and testimony provided?	☒	☐	☐

Discussion

To successfully satisfy Standard 5.1, compliance must be demonstrated with all of the subcategories of Standard 5.

A list of the individuals in compliance with Standard 5.1 and the position with which they are in compliance will be incorporated by the auditor into Appendix D. Appendix D shall be completed by auditors conducting external QAS audits. The credentials for those individuals found to be in compliance with Standard 5.1 after two successive external audits are not required to be reviewed in subsequent audits. However, this in no way prohibits the auditor from performing such additional reviews as that auditor(s) may deem appropriate or necessary.

Comment

		Yes	No	N/A
5.1.1	Does the laboratory have written job descriptions for all personnel to include responsibilities, duties, and skills?	☒	☐	☐

Discussion

Written job descriptions that are augmented by other documentation that includes responsibilities, duties, and skills are acceptable.

Comment

		Yes	No	N/A
5.1.2	Does the laboratory have a documented training program for qualifying all analyst(s) and technician(s)?	☒	☐	☐
5.1.2.1	Does the training program contain at a minimum the following components:	☒	☐	☐
	a. A training manual that covers all applicable DNA analytical procedures that the analyst/technician will perform?	☒	☐	☐
	b. Practical exercises that include the examination of a range of samples routinely encountered in casework?	☒	☐	☐
5.1.2.2	Does the laboratory's training program teach and assess the technical skills and knowledge required to perform DNA analysis and include, at a minimum, the following?	☒	☐	☐
	5.1.2.2.1 Does the training program require the documentation of the successful completion of a competency test(s)?	☒	☐	☐
	5.1.2.2.2 For an analyst or technician with previous forensic experience:	☒	☐	☐
	a. Did the technical leader assess and document the adequacy of the previous training of the analyst and/or technician?	☒	☐	☐
	b. Did the analyst and/or technician complete a modified training program that was assessed and documented by the technical leader?	☒	☐	☐
	5.1.2.2.3 Prior to participating in independent casework did all analysts and technicians, regardless of previous experience, successfully complete a competency test(s) covering the routine DNA methodologies to be used?	☒	☐	☐

Discussion

A laboratory's training program must teach and assess the skills and knowledge required to achieve the minimum standards of competence and good laboratory practice in a specific area of work. Training must include all methodologies that the analyst will perform in casework analysis. ***Methodology*** *is used to describe the analytical*

processes and procedures used to support a DNA-typing technology: for example, extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kit; and platform (capillary electrophoresis, real-time gel and end-point gel systems).

Any newly validated methodology implemented by the laboratory (as defined by Standard 8) must be incorporated into the laboratory's training program prior to the training of personnel in the new methodology or during the next annual review (whichever is earliest).

The laboratory must have available for review a documented training program that includes training records for each trainee. Additionally, the laboratory must have documentation that provides a formal means for recognizing an individual's successful completion of the training program (e.g., certificate, letter, memoranda) and demonstration of competency, typically through a test.

The measure of an individual's competency should be defined within the laboratory's training program.

A competency test(s) *is a written, oral, and/or practical test or series of tests designed to establish that an individual has demonstrated achievement of technical skills and met minimum standards of knowledge necessary to perform forensic DNA analysis.* Such a test serves to test an individual's knowledge, skills, and abilities as they relate to his or her individual position. A laboratory may select from a variety of approaches for administering a competency test, including but not limited to a written, oral, or practical examination. If a laboratory uses an internal or external proficiency test as a competency test, the laboratory must have the DNA typing results to assess an individual's performance. The date of qualification of an individual must be documented. The qualification date has particular relevance to proficiency testing requirements discussed in Standard 13 (Proficiency Testing), which requires that newly qualified individuals participate in an external proficiency test within six months of qualification date.

It is the technical leader's responsibility to evaluate, approve and document the adequacy of previous training for any staff member who has not otherwise completed the laboratory's formal training program. Examples may include, but are not limited to, the hiring of fully trained personnel from a separate organization or the assignment of experienced forensic DNA caseworking analysts to validate a new DNA testing procedure. All individuals, regardless of previous training and experience, must successfully complete a competency test for the specific DNA methodology to be used at the current laboratory prior to assuming casework responsibilities. Additionally, the contract employee must complete or be deemed to have satisfied the portions of the training program that are relevant to the duties/services he/she will be performing for the NDIS laboratory. Successful completion of an employee's or contract employee's competency test must be documented.

Qualified analysts who have been on leave for a period that takes them out of the proficiency test cycle, must be evaluated and complete any necessary training, as well as a competency test, prior to resuming casework.

Comment

		Yes	No	N/A
5.1.3	Does the laboratory have a documented program to ensure that technical qualifications are maintained through continuing education?	☒	☐	☐
5.1.3.1	Does the technical leader, casework CODIS administrator, and each analyst have documented attendance at seminars, courses, professional meetings, or documented training sessions/classes that consist of:	☒	☐	☐
	a. Subject areas relevant to the developments in DNA typing? Yes ☒ No ☐			
	b. Cumulative minimum of eight hours per calendar year? Yes ☒ No ☐			
5.1.3.1.1	For continuing education conducted internally, does the laboratory's retained documentation include the following:	☒	☐	☐
	a. Title of the program? Yes ☒ No ☐			
	b. A record of the presentation? Yes ☒ No ☐			
	c. Date of the training? Yes ☒ No ☐			
	d. Attendance list? Yes ☒ No ☐			
	e. Curriculum vitae of the presenter(s)? Yes ☒ No ☐			
5.1.3.1.2	For continuing education conducted externally, does the laboratory's retained documentation include one or more of the following:	☒	☐	☐
	a. Certificate of attendance?			
	b. Program agenda/syllabus?			
	c. Travel documentation?			

5.1.3.1.3 For continuing education that is based on multimedia or Internet delivery: ☒ ☐ ☐

a. Was the training subject to the review of, and approved by, the technical leader?

Yes ☒ No ☐

b. Was the time required to complete the program formally recorded in the laboratory's retained document?

Yes ☒ No ☐

c. Was the completion submitted to the technical leader for review and approval?

Yes ☒ No ☐

5.1.3.2 For the review of scientific literature:

a. Does the laboratory have a program, approved by the technical leader, for the annual review of scientific literature that documents the ongoing reading of scientific literature? ☒ ☐ ☐

b. Does the laboratory maintain or have physical or electronic access to a collection of current books, reviewed journals, or other literature applicable to DNA analysis? ☒ ☐ ☐

Discussion

Continuing education *is an educational activity (such as a class, lecture series, conference, seminar, or short course) that is offered by a recognized organization or individual that brings participants up-to-date in their relevant area of knowledge.* Journal or other review sessions (i.e., meetings or literature) are not considered continuing education.

The laboratory's continuing education program must be documented. To comply with this Standard, laboratory management must provide technical personnel with the opportunity to stay abreast of new developments and issues in the field of DNA analysis. The laboratory must provide the technical leader, casework CODIS administrator, and all analysts with continuing education in a subject area related to DNA analysis annually.

Generally, regardless of where the continuing education takes place, internally provided continuing education would be presented by members of the laboratory system and externally provided continuing education would be presented by persons external to the laboratory.

Although such continuing education should be formalized, this does not necessarily require earned credit hours or grade evaluations, although this would be acceptable. Attendance at, and appropriate content to meet this criteria, may be documented through certificates of attendance, program agenda/syllabi or travel authorizations. Participation and completion of programs based on multimedia or Internet delivery must be formally recorded and approved by the technical leader. This documentation must include the time required to complete the program.

The continuing education must consist of a cumulative minimum of eight hours annually. Attendance at regional, national, or international meetings or conferences shall be deemed to provide a minimum of eight hours of continuing education.

The laboratory must describe its process for the annual review of scientific literature, including how personnel will document their ongoing reading of the literature.

Comment

		Yes	No	N/A
5.1.4	Does the laboratory maintain records on the relevant qualifications, training, skills, and experience of all technical personnel?	☒	☐	☐

Discussion

The laboratory must verify the degree obtained and coursework completed for technical personnel. Transcripts and other appropriate documentation must be available to the auditors for assessing an individual's qualifications. Technical personnel's skills and experience must be documented through a curriculum vitae or other means, such as a statement of qualifications.

Comment

		Yes	No	N/A
5.2	Does the technical leader satisfy the requirements for degree/education, experience, and duties listed in Standards 5.2.1 through 5.2.4.1?	☒	☐	☐
5.2.1	Does the technical leader of the laboratory meet or exceed the following degree/educational requirements?	☒	☐	☐

a. A master's degree in a biology-, chemistry-, or forensic science-related area or have a waiver as stated in Standard 5.2.1.4? ☒ ☐ ☐

b. Twelve semester hours or equivalent credit hours including a combination of graduate and undergraduate course work or classes covering the following subject areas: ☒ ☐ ☐

1. Biochemistry? Yes ☒ No ☐
2. Genetics? Yes ☒ No ☐
3. Molecular biology? Yes ☒ No ☐
4. Statistics or population genetics? Yes ☒ No ☐

5.2.1.1 Of the 12 semester or equivalent credit hours required, do they include at least one graduate-level course registering 3 or more semester or equivalent credit hours? ☒ ☐ ☐

5.2.1.2 Do each of the specific subject areas listed in Standard 5.2.1 constitute an integral component of any coursework used to demonstrate compliance with this Standard? ☒ ☐ ☐

5.2.1.3 For individuals who have completed coursework with titles other than those listed in Standard 5.2.1, have they successfully demonstrated compliance with this Standard through a combination of pertinent materials such as a transcript, syllabus, letter from the instructor, or other documentation that supports the course content? ☒ ☐ ☐

Discussion

For technical leaders appointed or hired on or after July 1, 2009, a minimum of four courses (biochemistry, genetics, molecular biology and statistics or population genetics) totaling at least 12 semester or equivalent credit hours must be completed successfully (college- or university-determined passing grade).

Biochemistry *is the study of the nature of biologically important molecules in living systems, DNA replication and protein synthesis, and the quantitative and qualitative aspects of cellular metabolism.*

Genetics *is the study of inherited traits, genotype/phenotype relationships, and population/species differences in allele and genotype frequencies.*

Molecular biology *is the study of the theories, methods, and techniques used in the study and analysis of gene structure, organization, and function.*

Integral component *is that portion of an academic course that is so significant and necessary to the understanding of the subject matter as a whole that the course would be considered incomplete without it.*

Each of the required subject areas must be in the form of academic coursework for credit. ***Coursework*** *is an academic class officially recognized and taught through a college or university program in which the participating student successfully completed and received one or more credit hours for the class.*

A variety of college course work may apply toward satisfying this Standard and is not limited exclusively to the course titles listed. Coursework in Standard 5.2.1.2 shall be considered as meeting the integral component requirement if the coursework consists of the title listed in Standard 5.2.1b (biochemistry, genetics, molecular biology and statistics or population genetics).

For a technical leader who possesses a waiver (Standard 5.2.1.4) but does not satisfy the required graduate coursework in Standard 5.2.1.1, then Standard 5.2.1.1 shall be marked "N/A."

The DNA training program previously offered by the FBI Laboratory, with graduate credit hours from the University of Virginia, may be applied toward the molecular biology coursework requirement associated with this Standard. Unless specifically stated by the FBI, other FBI courses do not fulfill this requirement.

A list of the individuals in compliance with Standard 5.2 and the position with which they are in compliance will be incorporated by the auditor into Appendix D for external QAS audits.

Comment

		Yes	No	N/A
5.2.1.4	If the degree requirements of Standard 5.2.1 are not met, does the technical leader possess a waiver from the American Society of Crime Laboratory Directors (ASCLD)?	☒	☐	☐

Discussion

Compliance with Standard 5.2.1.4 is necessary only if criteria 5.2.1a has not otherwise been satisfied. Otherwise, the response to 5.2.1.4 shall be marked "N/A."

The ASCLD waiver is permanent and portable. Documentation of the waiver must be available.

Comment

		Yes	No	N/A
5.2.2	Technical leader minimum experience requirements:			
	a. Does the technical leader have three years of forensic DNA laboratory experience obtained at a laboratory where forensic DNA testing was conducted for the identification and evaluation of biological evidence in criminal matters?	☒	☐	☐
	b. Does any technical leader, appointed or hired on or after July 1, 2009, have a minimum of three years human-DNA experience (current or previous) as a qualified analyst on forensic samples?	☒	☐	☐
	c. Has the technical leader successfully completed, or will successfully complete within one year of appointment, the FBI-sponsored auditor training?	☒	☐	☐

Discussion

Technical leaders appointed or hired on or after July 1, 2009 must have a minimum of three years of human-DNA experience (current or previous) as a qualified analyst on forensic samples.

Technical leaders appointed or hired prior to July 1, 2009, must have a minimum of three years of forensic DNA experience (current or previous). This would include criminal justice agencies where forensic research/training and caseworking laboratories are separate entities but reside under the same facility-wide organizational umbrella. It is not necessary for the technical leader to function (or to have functioned) as a qualified analyst if appointed or hired prior to July 1, 2009. If the technical leader was appointed or hired prior to July 1, 2009, satisfaction of the minimum experience requirements shall only be applicable to the specific laboratory system where the technical leader is employed prior to July 1, 2009 and shall not be portable.

It should be noted that the experience time frame is measured not by the number of years with any particular employer but rather by the number of years in a position specific for gaining the experience necessary to satisfy this Standard.

Technical leaders appointed or hired on or after July 1, 2009 must demonstrate compliance with Standard 5.2.2b through documented employment as a qualified analyst. Documentation may include previous audit documentation of qualifications. If no technical leader was appointed or hired on or after July 1, 2009, then Standard 5.2.2b shall be marked "N/A."

For those instances in which a technical leader has an experience base in a specific DNA technology that is different from the DNA technology currently used in casework analysis, the laboratory must demonstrate that the technical leader has fulfilled his or her defined duties and keeps abreast of technical developments.

The technical leader shall have previously completed, or will successfully complete within one year of his or her appointment, the FBI sponsored auditor training. Evidence of successful completion of the FBI DNA Auditor training will be assessed through an FBI-issued certificate. If the technical leader has recently been appointed to the position and the applicable time period for the training has not expired, then Standard 5.2.2c shall be marked "N/A."

Comment

		Yes	No	N/A
5.2.3	Does the technical leader of the laboratory have responsibility for the following:	☒	☐	☐
5.2.3.1	Does the technical leader have the following general duties and authority:	☒	☐	☐
5.2.3.1.1	Oversee the technical operations of the laboratory?	☒	☐	☐
5.2.3.1.2	Authority to initiate, suspend, and resume DNA analytical operations for the laboratory or an individual?	☒	☐	☐
5.2.3.2	Does the technical leader perform the following specific responsibilities:	☒	☐	☐

5.2.3.2.1	Evaluate and document approval of all validations and methods used by the laboratory and propose new or modified analytical procedures to be used by analysts?	☒	☐	☐
5.2.3.2.2	Review and document the review of the academic transcripts and training records for newly qualified analysts and approve their qualifications prior to their conducting independent casework analysis?	☒	☐	☐
5.2.3.2.3	Approve the technical specifications for outsourcing agreements?	☒	☐	☐
5.2.3.2.4	Review and document the review of internal and external DNA audit documents and, if applicable, approve corrective action(s).	☒	☐	☐
5.2.3.2.5	Review annually the procedures of the laboratory and document such review?	☒	☐	☐
5.2.3.2.6	Review and approve the training, quality assurance, and proficiency testing programs in the laboratory?	☒	☐	☐
5.2.3.2.7	Review requests by contract employees for employment by multiple NDIS participating and/or vendor laboratories and, if no potential conflict of interest exist, may approve such requests?	☒	☐	☐

Discussion

To successfully satisfy Standards 5.2.3.1 through 5.2.3.1.2, the laboratory must clearly define and document the technical leader's duties and authority.

Standard 5.2.3 contains the minimum responsibilities of the technical leader and may be exceeded as determined by laboratory management.

To successfully satisfy Standard 5.2.3, compliance must be demonstrated with all of the subcategories of Standard 5.2.3. Auditors may assess whether a laboratory has satisfied the requirements through a review of laboratory documentation (e.g., protocols, quality manual).

A contract employee shall disclose any employment with another laboratory to the NDIS participating laboratory. The technical leader shall review such employment for any

potential conflicts of interest. If there are no potential conflicts of interest, the technical leader may approve the employment by multiple NDIS participating and/or vendor laboratories. For example, Vendor Laboratory A performs the forensic analysis of DNA samples for State Laboratory Z. An employee of Vendor Laboratory A shall not perform technical review services for State Laboratory Z as this would constitute a conflict of interest.

Comment

		Yes	No	N/A
5.2.4	Technical leader accessibility:	☒	☐	☐
	a. Is the technical leader accessible to the laboratory to provide on-site, telephonic, or electronic consultation as needed?	☒	☐	☐
	b. If the technical leader oversees a system of separate laboratories, has the technical leader conducted semiannual on-site visits of each of the laboratories?	☐	☐	☒
5.2.4.1	Is the technical leader a full-time employee of the laboratory or laboratory system?	☒	☐	☐
5.2.4.1.1	a. If the technical leader position of the laboratory had been vacant since the last audit, was there a qualified individual immediately appointed as technical leader?	☐	☐	☒
	b. If a qualified individual was not available/ appointed, did the laboratory immediately contact the FBI and submit its contingency plan within 14 days of the vacancy for the FBI's approval?	☐	☐	☒
	c. Was all new casework suspended until the plan was approved by the FBI?	☐	☐	☒
5.2.5	Did each technical leader appointed or hired on or after July 1, 2009, document a review of the following:	☒	☐	☐
	5.2.5.1 Validation studies and methodologies currently used by the laboratory?	☒	☐	☐

5.2.5.2 Educational qualifications and training records of currently qualified analysts? ☒ ☐ ☐

Discussion

The technical leader must be a full-time employee (***employee*** *is a person (1) in the service of the applicable federal, state, or local government, subject to the terms, conditions, and rules of federal, state, or local employment and eligible for the federal, state, or local benefits of service…)* of the laboratory although not required to occupy physical (on-site) facility space. For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions, and rules of employment of the vendor laboratory. Full-time shall be considered the standard work week as defined by the laboratory.

However, if the technical leader oversees a system of separate laboratories, a minimum of two semiannual on-site visits must be conducted and documented for each laboratory. The technical leader must demonstrate knowledge and oversight of the DNA program sufficient to ensure that each laboratory is following standards and written protocols.

If a contingency plan was submitted to the FBI, then documentation must be reviewed to ensure that DNA analytical procedures on new casework were not initiated until FBI approval was granted. New casework is casework in which DNA analytical procedures have not been initiated at the time of the technical leader's vacancy. Please refer to Appendix B for the Notification Form for Technical Leader Contingency Plan.

If the technical leader position has not been vacant since the last audit, then Standard 5.2.4.1.1 shall be marked "N/A." If the technical leader position was vacant but filled by a qualified individual, then Standards 5.2.4.1.1 b and c shall be marked "N/A."

If the technical leader position has not been assumed by a newly appointed technical leader since the last audit, then Standards 5.2.5, 5.2.5.1 and 5.2.5.2 shall be marked "N/A."

Comment

Standard 5.2.4.b is marked N/A because the Technical Leader does not oversee a system of separate laboratories.

Standards 5.2.4.1.1.a – 5.2.4.1.1.c are marked N/A because the Technical Leader position has not been vacant since the last external audit (2016).

		Yes	No	N/A
5.3	Is the casework CODIS administrator an employee of the laboratory and does he or she meet the following qualifications?	☐	☐	☒
5.3.1	Education: Does the casework CODIS administrator meet the minimum education requirements? a. Does the casework CODIS administrator meet the minimum education requirements as defined in Standard 5.4 or b. Was the casework CODIS administrator appointed or hired prior to July 1, 2009, with supporting documentation from the FBI?	☐	☐	☒
5.3.2	Experience: Does the casework CODIS administrator meet the experience requirements? a. Is a current or previously qualified casework DNA analyst with documented mixture interpretation training, or b. Was the casework CODIS administrator appointed or hired prior to July 1, 2009 with documented mixture-interpretation training and completion of FBI-sponsored CODIS training?	☐	☐	☒

Discussion

If performing an audit of a vendor laboratory, the auditor shall mark Standard 5.3 and all of its subcategories shall be marked "N/A."

If a casework CODIS administrator appointed or hired prior to July 1, 2009, has the appropriate supporting documentation from the FBI, Standard 5.3.1 and 5.3.2 shall be marked "YES." Satisfaction of these minimum education and experience requirements shall be applicable to the specific laboratory system where the casework CODIS administrator is employed by prior to July 1, 2009 and shall not be portable.

A casework CODIS administrator appointed or hired on or after July 1, 2009, must be, or have been, a qualified DNA analyst. Casework CODIS administrators appointed or hired on or after July 1, 2009, and not otherwise grandfathered as a qualified analyst, will be assessed to the educational requirements of the FBI Quality Assurance Audit Document for Forensic DNA Testing Laboratories dated July 1, 2009. For casework

CODIS administrators appointed or hired on or after July 1, 2009, and not previously qualified as a DNA analyst in that laboratory, a minimum of three courses (biochemistry, genetics, and molecular biology) totaling at least nine semester or equivalent credit hours must be completed successfully (college- or university-defined passing grade) and coursework or training in statistics and/or population genetics.

Casework CODIS administrators may satisfy the statistics and/or population genetics coursework or training requirement of Standard 5.4.1 through internal or external training. For external statistics and/or population genetics training, a variety of methods may be used, including academic coursework; workshops at local, national, or international meetings or symposia; or other external, technical leader-approved, training courses. The laboratory must maintain documentation of such attendance. For internal statistics and/or population genetics training, the documentation must comply with Standard 5.1.3.1.1.

Mixture interpretation training may be provided by the laboratory in-house and documented.

Biochemistry *is the study of the nature of biologically important molecules in living systems, DNA replication and protein synthesis, and the quantitative and qualitative aspects of cellular metabolism.*

Genetics *is the study of inherited traits, genotype/phenotype relationships, and population/species differences in allele and genotype frequencies.*

Molecular biology *is the study of the theories, methods, and techniques used in the study and analysis of gene structure, organization, and function.*

The casework CODIS administrator shall be an employee of the laboratory. ***Employee*** *is a person (1) in the service of the applicable federal, state, or local government, subject to the terms, conditions, and rules of federal, state, or local employment and eligible for the federal, state, or local benefits of service; or (2) formerly in the service of a federal, state, or local government who returns to service in the agency on a part-time or temporary basis.* For purposes of a vendor laboratory, an employee is a person in the service of a vendor laboratory and subject to the applicable terms, conditions, and rules of employment of the vendor laboratory.

Integral component *is that portion of an academic course that is so significant and necessary to the understanding of the subject matter as a whole that the course would be considered incomplete without it.*

Each of the required subject areas must be in the form of academic coursework for credit. ***Coursework*** *is an academic class officially recognized and taught through a college or university program in which the participating student successfully completed and received one or more credit hours for the class.*

A variety of college course work may apply toward satisfying this Standard and is not limited exclusively to the course titles listed.

A list of the individuals in compliance with Standard 5.3 and the position with which they are in compliance will be incorporated by the auditor into Appendix D for external QAS audits.

Comment
Standards 5.3, 5.3.1.a-b, and 5.3.2.a-b are marked N/A because the laboratory does not participate in CODIS.

		Yes	No	N/A
5.3.3	Has the casework CODIS administrator:			
	a. Successfully completed the FBI auditor training within one year of appointment, if not previously attended such training?	☐	☐	☒
	b. Participated in the FBI sponsored CODIS software training within six months of appointment, if not previously attended such training?	☐	☐	☒
5.3.4	Is the casework CODIS administrator responsible for the following:	☐	☐	☒
	5.3.4.1 Administering the laboratory's local CODIS network?	☐	☐	☒
	5.3.4.2 Scheduling and documenting the CODIS computer training of casework analysts?	☐	☐	☒
	5.3.4.3 Assuring that the security of data stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures?	☐	☐	☒
	5.3.4.4 Assuring that the quality of data stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures?	☐	☐	☒
	5.3.4.5 Assuring that matches are dispositioned in accordance with NDIS operational procedures?	☐	☐	☒

5.3.5	Is the casework CODIS administrator authorized to terminate an analyst's or the laboratory's participation in CODIS until the reliability and security of the computer data can be assured if an issue with the data is identified?	☐	☐	☒
5.3.6	If the casework CODIS administrator position has been unoccupied since the last audit, has the laboratory refrained from uploading new DNA profiles to NDIS during the vacancy?	☐	☐	☒

Discussion

If the casework CODIS administrator has recently been appointed to the position and the applicable time periods for the training have not expired, then Standard 5.3.3a and/or 5.3.3b shall be marked "N/A."

Standards 5.3.4 and 5.3.5 are the minimum responsibilities of the casework CODIS administrator.

To successfully satisfy Standard 5.3.5, the laboratory must clearly define and document the casework CODIS administrator's duties and authority. Auditors may assess whether a laboratory has satisfied the requirements through a review of laboratory documentation (e.g., protocols, quality manual).

If the casework CODIS administrator position has not been vacant since the last audit, then Standard 5.3.6 shall be marked "N/A." If there has been a period of time since July 1, 2009 during which the position has been vacant, the auditor may review/request to see CODIS upload records or contact the NDIS Custodian for confirmation.

Comment
Standards 5.3.3a, 5.3.3b, 5.3.4, 5.3.4.1, 5.3.4.2, 5.3.4.3, 5.3.4.4, 5.3.4.5, 5.3.5, and 5.3.6 were marked N/A because the laboratory is a private laboratory and does not participate in CODIS.

		Yes	No	N/A
5.4	Is each analyst an employee or contract employee of the laboratory and does he or she meet or exceed the following qualifications?	☒	☐	☐
5.4.1	Does each analyst meet or exceed the following degree and educational requirements:	☒	☐	☐
	a. B.A./B.S. or advanced degree or its equivalent in a biology-, chemistry-, or forensic science- related area?	☒	☐	☐

	b. College coursework or classes covering the subject areas of:	☒	☐	☐
	1. Biochemistry? Yes ☒ No ☐			
	2. Genetics? Yes ☒ No ☐			
	3. Molecular biology? Yes ☒ No ☐			
	c. College course work or training that covers the subject areas of statistics and/or population genetics?	☒	☐	☐
5.4.1.1	Does each of the specific subject areas listed in Standard 5.4.1 constitute an integral component of any coursework used to demonstrate compliance with this Standard?	☒	☐	☐
5.4.1.2	For analysts appointed or hired on or after July 1, 2009, do the required subject areas consist of nine or more cumulative semester or equivalent hours?	☒	☐	☐
5.4.1.3	For individuals who have completed coursework with titles other than those listed in Standard 5.4.1:			
	a. Have they successfully demonstrated compliance with this Standard through a combination of pertinent materials such as a transcript, syllabus, letter from the instructor, or other documentation that supports the course content?	☒	☐	☐
	b. Has the technical leader documented his or her approval of compliance with this Standard?	☒	☐	☐

Discussion

Analysts who were appointed or hired prior to July 1, 2009, will be assessed according to the educational requirements of the FBI Quality Assurance Audit Document dated July 1, 2004, which required a minimum of six cumulative semester hours or equivalent that covered the required subject areas.

Analysts appointed or hired on or after July 1, 2009, will be assessed according to the educational requirements of the FBI Quality Assurance Audit Document dated July 1, 2009. For analysts appointed or hired on or after July 1, 2009, a minimum of three courses (biochemistry, genetics, and molecular biology) totaling at least nine semester or equivalent credit hours must be completed successfully (college or university defined passing grade) and coursework or training in statistics and/or population genetics. Analysts may satisfy the statistics and/or population genetics coursework or training requirement of Standard 5.4.1 through internal or external training. For external statistics and/or population genetics training, a variety of methods may be used, including academic coursework; workshops at local, national, or international meetings or symposia; or other external, technical leader-approved training courses. The

laboratory must maintain documentation of such attendance. For internal statistics and/or population genetics training, the documentation must comply with Standard 5.1.3.1.1.

Contract employee *is an individual that performs DNA typing and/or analytical support services to the NDIS participating laboratory. The person performing these services must meet the relevant qualifications for the equivalent position in the NDIS participating laboratory. A contract employee cannot serve as a casework CODIS Administrator or technical leader and cannot be counted as a full-time qualified DNA analyst for purposes of satisfying the definition of a laboratory. Employment of a contract employee by multiple NDIS participating laboratories and/or vendor laboratories shall be disclosed and shall only be permitted subject to approval by the technical leader of the NDIS participating laboratory for which the contract employee is performing DNA typing and/or analytical services.*

A contract employee shall disclose any employment with another laboratory to the NDIS participating laboratory. The technical leader shall review such employment for any potential conflicts of interest. If there are no potential conflicts of interest, the technical leader may approve the employment by multiple NDIS participating and/or vendor laboratories.

Biochemistry *is the study of the nature of biologically important molecules in living systems, DNA replication and protein synthesis, and the quantitative and qualitative aspects of cellular metabolism.*

Genetics *is the study of inherited traits, genotype/phenotype relationships, and population/species differences in allele and genotype frequencies.*

Molecular biology *is the study of the theories, methods, and techniques used in the study and analysis of gene structure, organization, and function.*

Integral component *is that portion of an academic course that is so significant and necessary to the understanding of the subject matter as a whole that the course would be considered incomplete without it.*

Each of the required subject areas must be in the form of academic coursework for credit. ***Coursework*** *is an academic class officially recognized and taught through a college or university program in which the participating student successfully completed and received one or more credit hours for the class.*

A variety of college course work may apply toward satisfying this Standard and is not limited exclusively to the course titles listed.

If no new analysts have been appointed or hired on or after July 1, 2009, then Standard 5.4.1.2 shall be marked "N/A."

The DNA training program previously offered by the FBI Laboratory, with graduate credit hours from the University of Virginia, may be applied toward the molecular biology coursework requirement associated with this Standard. Unless specifically stated by the FBI, other FBI courses do not fulfill this requirement.

A list of the individuals in compliance with Standard 5.4 and the position with which they are in compliance will be incorporated by the auditor into Appendix D for external QAS audits.

Comment

		Yes	No	N/A
5.4.2	Does each analyst have six months of documented, forensic human-DNA laboratory experience?	☒	☐	☐
5.4.2.1	Prior to independent work using DNA technology, has each analyst completed the analysis of a range of samples routinely encountered in forensic casework?	☒	☐	☐
5.4.2.2	Has each analyst successfully completed a competency test before beginning independent DNA analysis?	☒	☐	☐

Discussion

An analyst must have a minimum of six months of forensic DNA laboratory experience gained at a facility where forensic DNA testing was performed for the identification and evaluation of biological evidence in criminal matters. The experience time frame is measured not by the length of time spent with any particular employer but rather by the number of months/years in a position specific for gaining the experience necessary to satisfy this Standard. The experience gained by an individual must include the successful analysis of a range of samples typically associated with forensic casework. An individual's participation after appointment or hiring in a formal forensic DNA training program is acceptable for fulfilling or being applied toward fulfilling the experience requirement of this Standard.

If prior forensic human-DNA laboratory experience is accepted by a laboratory, the prior experience shall be documented and augmented by additional training, as needed, in the analytical methodologies, platforms, and interpretations of human-DNA results used by the laboratory.

Competency *is the demonstration of technical skills and knowledge necessary to perform forensic DNA analysis successfully.*

A competency test(s) *is a written, oral, and/or practical test or series of tests designed to establish that an individual has demonstrated achievement of technical skills and met minimum standards of knowledge necessary to perform forensic DNA analysis.* Such a test serves to test an individual's knowledge, skills, and abilities as they relate to his or her individual position. A laboratory may select from a variety of approaches for administering a competency test, including but not limited to a written, oral, or practical examination. If a laboratory uses an internal or external proficiency test as a competency test, the laboratory must have the DNA typing results to assess an individual's performance. The date of qualification of an individual must be documented. The qualification date has particular relevance to proficiency testing requirements discussed in Standard 13 (Proficiency Testing), which requires that newly qualified individuals participate in an external proficiency test within six months of qualification date.

Comment

		Yes	No	N/A
5.5	Is each technical reviewer an employee or contract employee of the laboratory and does he or she meet or exceed the following qualifications?	☒	☐	☐
5.5.1	Is each technical reviewer a current or previously qualified analyst in the methodologies being reviewed?	☒	☐	☐
5.5.2	Has each technical reviewer successfully completed a competency test prior to participating in the technical review of DNA data?	☒	☐	☐
5.5.3	Does each technical reviewer participate in an external proficiency testing program at an NDIS participating laboratory on the same technology, platform and typing amplification test kit used to generate the DNA data being reviewed?	☒	☐	☐

Technical reviewer *is an employee or contract employee who is a current or previously qualified analyst in the methodology being reviewed that performs a technical review of, and is not an author of, the applicable report or its contents.*

Contract employee *is an individual that performs DNA typing and/or analytical support services to the NDIS participating laboratory. The person performing these services must meet the relevant qualifications for the equivalent position in the NDIS participating laboratory. A contract employee cannot serve as a casework CODIS Administrator or technical leader and cannot be counted as a full-time qualified DNA analyst for purposes of satisfying the definition of a laboratory. Employment of a contract employee by multiple NDIS participating laboratories and/or vendor laboratories shall be disclosed and shall only be permitted subject to approval by the technical leader of the NDIS participating laboratory for which the contract employee is performing DNA typing and/or analytical services.*

A contract employee shall disclose any employment with another laboratory to the NDIS participating laboratory. The technical leader shall review such employment for any potential conflicts of interest. If there are no potential conflicts of interest, the technical leader may approve the employment by multiple NDIS participating and/or vendor laboratories.

Competency *is the demonstration of technical skills and knowledge necessary to perform forensic DNA analysis successfully.*

A competency test(s) *is a written, oral, and/or practical test or series of tests designed to establish that an individual has demonstrated achievement of technical skills and met minimum standards of knowledge necessary to perform forensic DNA analysis.* Such a test serves to test an individual's knowledge, skills, and abilities as they relate to his or her individual position. A laboratory may select from a variety of approaches for administering a competency test, including but not limited to a written, oral, or practical examination. If a laboratory uses an internal or external proficiency test as a competency test, the laboratory must have the DNA typing results to assess an individual's performance. The date of qualification of an individual must be documented.

A technical reviewer must be qualified or previously qualified in the technology, platform, and typing amplification test kit used to generate the data being reviewed. A technical reviewer must also participate in an NDIS laboratory's external proficiency-testing program to the full extent in which he or she participates in the review of the DNA data. The intent is that any contract employee hired to conduct technical reviews participates in an external proficiency testing program administered by an NDIS participating laboratory for the technology, platform and amplification test kit used to generate the data being reviewed and that the term of the employment does not impact or negate the requirement to participate in such external proficiency testing. For example, an analyst or technical reviewer participates and is proficiency tested on casework using one type of amplification test kit and performs the technical review of outsourced casework which was analyzed using a different technology, platform and/or amplification test kit. Such analyst or technical reviewer must also be proficiency tested on the technology, platform and/or amplification test kit used by the laboratory

generating the DNA data under review to the extent he/she participates in or performs the technical review of the DNA data.

For non-NDIS participating laboratories the competency and proficiency test referenced in Standards 5.5.2 and 5.5.3 are not required to be administered by an NDIS participating laboratory.

Comment

		Yes	No	N/A
5.6	Has each technician successfully completed each of the following:	☐	☐	☒
5.6.1	Documented training specific to his or her job function(s)?	☐	☐	☒
5.6.2	A competency test before participating in DNA analysis on evidence?	☐	☐	☒
5.7	Do all laboratory technical support personnel have documented training specific to their job function(s)?	☐	☐	☒

Discussion

A technician *(or equivalent role, position, or title as designated by the Laboratory Director) is an employee or contract employee who performs analytical techniques on forensic samples under the supervision of a qualified analyst. Technicians do not interpret data, reach conclusions on typing results, or prepare final reports.*

Laboratory support personnel *(or equivalent role, position, or title as designated by the Laboratory Director) are employees or contract employees who perform laboratory duties exclusive of analytical techniques on forensic or database samples.*

These personnel will be documented on the organizational chart.

Comment
Standards 5.6, 5.6.1, and 5.6.2 are marked N/A because the Laboratory does not employ technicians.

Standard 5.7 is marked N/A because the Laboratory does not employ technical support personnel.

Standard 6. Facilities

		Yes	No	N/A
6.1	Is the laboratory designed to ensure the integrity of the analyses and the evidence?	☒	☐	☐
6.1.1	Is access to the laboratory controlled and limited in a manner that prevents access by unauthorized personnel?	☒	☐	☐
	a. Do all exterior entrance/exit points have security control?	☒	☐	☐
	b. Is the distribution of all keys, combinations, and other security devices, documented and limited to the personnel designated by laboratory management?	☒	☐	☐

Discussion

To successfully satisfy Standard 6.1, the laboratory must demonstrate compliance with all of the subcategories of Standard 6.

Clearly written and well-understood procedures must exist for laboratory security. The laboratory's security system must control access and limit entry to the operational areas. Internal controlled areas shall limit access to only authorized personnel. The distribution system of all keys, combinations, etc. must be current, accurate, clearly documented, and available for review. Many other control systems which include card keys, surveillance cameras, and intrusion alarms, are acceptable when they complement the laboratory's security system by controlling unauthorized access and/or limiting authorized access to the operational laboratory and evidence storage areas.

Comment

		Yes	No	N/A
6.1.2	Except as provided in Standard 6.1.4, are techniques performed prior to polymerase chain reaction (PCR) amplification, to include evidence examinations, DNA extractions, and PCR setup, conducted at separate times or in separate spaces from one another?	☒	☐	☐
6.1.3	Except as provided in Standard 6.1.4, is amplified DNA product, including real-time PCR, generated, processed, and maintained in a room(s) separate from the evidence examination, DNA extractions, and PCR-setup areas?	☒	☐	☐

	a. Are the doors between rooms containing amplified DNA and other areas closed at all times except for passage?	☒	☐	☐
6.1.4	If a robotic workstation is used to carry out DNA extraction, quantification, PCR setup, and/or amplification in a single room, has the laboratory validated the analytical process in accordance with Standard 8?	☒	☐	☐
	a. If the robot performs analysis through amplification, is the robot housed in a separate room from that used for initial evidence examinations?	☐	☐	☒

Discussion

Through a combination of clearly written analytical procedures, casework notes, and/or personal observation, the laboratory's approach to sample processing for PCR-based procedures (extraction, quantification, and amplification) must demonstrate a separation in time or physical space for each activity. The laboratory's design must demonstrate that evidence flow, through the various steps of DNA processing, does not compromise the integrity of the sample. The amplification room must be enclosed with walls from the floor to the ceiling and door(s) for passage. The amplification room(s) must physically separate amplified DNA from all other areas of the laboratory by keeping doors in the closed position.

When robotic workstations are used to carry out DNA extractions through PCR setup on casework samples, a single room may be used. Internal validation must show that if contamination occurs, it is minimized, addressed, and less than or equal to that observed when these procedures are performed manually in separate rooms. When robotic workstations are not used to carry out DNA extractions through PCR setup on casework samples in a single room, Standard 6.1.4 shall be marked "N/A."

Comment
Standard 6.1.4.a is marked N/A because the robot does not perform analysis through amplification.

		Yes	No	N/A
6.1.5	Does the laboratory have and follow written procedures for cleaning and decontaminating facilities and equipment?	☒	☐	☐

Discussion

A laboratory may employ a variety of methods to monitor, clean, and decontaminate its facilities, such as the use of appropriate controls in the analysis process. This may be

accomplished through a variety of ways at the discretion of the laboratory; the method(s) used by the laboratory must be documented.

Comment

STANDARD 7. Evidence Control

		Yes	No	N/A
7.1	Does the laboratory have and follow a documented evidence control system to ensure the integrity of physical evidence?	☒	☐	☐
7.1.1	For evidence and sample identification:	☒	☐	☐

a. Is all evidence marked with a unique identifier on the evidence package?

Yes ☒ No ☐

b. Does the laboratory clearly define what constitutes evidence and what constitutes work product?

Yes ☒ No ☐

c. Does the laboratory have and follow a method to distinguish each sample throughout processing?

Yes ☒ No ☐

Discussion

To successfully satisfy Standard 7.1, the laboratory must demonstrate compliance with all of the subcategories of Standard 7.

The DNA laboratory must have clearly written, well-understood procedures that address handling and preserving the integrity of evidence. Key components of such an evidence-control procedure include proper labeling and sealing of evidence, a documented chain-of-custody record, and a secure area designated for evidence storage. Each item of evidence (and/or its container) must be marked with a unique identifier.

The laboratory shall clearly define what constitutes evidence and what constitutes work product. ***Work product*** *is the material that is generated as a function of analysis, which*

may include extracts, amplified product, and amplification tubes or plates as defined by the laboratory.

The laboratory shall have a method to distinguish each sample throughout processing (such as plate or rack mapping) that may not require the assignment of unique identifiers or individual evidence seals for each sample.

Comment

		Yes	No	N/A
7.1.2	Does the laboratory document and maintain a chain of custody, in hard or electronic format, for all evidence, to include the following:	☒	☐	☐
	a. Signature or initials or the electronic equivalent of each individual receiving or transferring the evidence? Yes ☒ No ☐			
	b. The corresponding date for each transfer? Yes ☒ No ☐			
	c. Evidentiary item(s) transferred? Yes ☒ No ☐			

Discussion

A written chain-of-custody record must include the signature or initials (written or electronic) of each individual receiving or transferring evidence, with the corresponding date for each transfer and a corresponding identifier that specifies each evidentiary item. This record must provide a comprehensive, documented history for each evidence transfer over which the laboratory has control. Electronic tracking of evidence is an acceptable alternative to a written record as long as the computerized data are sufficiently secure, detailed, and accessible for review and can be converted to a hard copy when necessary.

Comment

		Yes	No	N/A
7.1.3	Does the laboratory have and follow documented procedures designed to minimize loss, contamination, and/or deleterious change of evidence and work product in progress?	☒	☐	☐
7.1.4	Does the laboratory have secure, controlled-access areas for evidence storage and work product in progress?	☒	☐	☐

Discussion

The laboratory must ensure that evidence stored under its custody is properly sealed and protected from loss, contamination, and/or deleterious change. An evidence container is sealed properly if its contents cannot escape readily and if opening the container results in a detectable alteration to the container or seal. The seal must be labeled in a manner that identifies the individual responsible for sealing the evidence. The immediate container need not be sealed (but securely closed) if it is enclosed in a larger container that meets the requirements of a proper seal. In such instances, the container must be closed securely such that its contents are protected from loss, contamination, and/or deleterious change.

Secure areas for evidence storage must exist within the laboratory. The laboratory may demonstrate compliance with Standard 7.1.4 by specifying short-term and long-term storage that demonstrate proper security through defined, controlled access to the evidentiary storage area at stopping points in the procedure. Short-term storage areas may vary from a locked file cabinet to an entire examination room temporarily housing large or bulky items of evidence.

Comment

		Yes	No	N/A
7.2	Does the laboratory retain or return a portion of the evidence sample or extract where possible?	☒	☐	☐

Discussion

The laboratory must have a policy or other documentation that addresses the retention or return of evidence or extracts.

Comment

		Yes	No	N/A
7.3	Does the laboratory have and follow documented policies for the disposition of evidence and sample consumption?	☒	☐	☐

Comment

Standard 8. Validation

		Yes	No	N/A
8.1	Does the laboratory use validated methods for DNA analyses?	☒	☐	☐

Discussion

To successfully satisfy Standard 8.1, the laboratory must demonstrate compliance with all of the subcategories of Standard 8.

Validation *is the process by which a procedure is evaluated to determine its efficacy and reliability for forensic casework analysis. It is the accumulation of test data within the laboratory to demonstrate that established methods and procedures perform as expected.*

Comment

		Yes	No	N/A
8.2	Have developmental validation studies preceded the use of a novel methodology for forensic DNA analysis?	☒	☐	☐

Discussion

Developmental validation *is the acquisition of test data and determination of conditions and limitations of a new or novel DNA methodology for use on forensic samples.* ***Methodology*** *is used to describe the analytical processes and procedures used to support a DNA-typing technology: for example, extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kit; and platform (capillary electrophoresis, real-time gel and end-point gel systems).*

A DNA laboratory may rely upon another laboratory's developmental validation studies; however, the citations and/or publications referencing that validation must be available and accessible to support the underlying scientific basis. If a laboratory can document the developmental validation through citations and publications, Standard 8.2 shall be marked "Yes."

Comment

		Yes	No	N/A
8.2.1	Have developmental validation studies been performed and documented to include, where applicable:	☒	☐	☐

a. Characterization of the genetic marker? Yes ☒ No ☐ N/A ☐

b. Species specificity? Yes ☒ No ☐ N/A ☐

c. Sensitivity studies? Yes ☒ No ☐ N/A ☐

d. Stability studies? Yes ☒ No ☐ N/A ☐

e. Reproducibility? Yes ☒ No ☐ N/A ☐

f. Case-type samples? Yes ☒ No ☐ N/A ☐

g. Population studies? Yes ☒ No ☐ N/A ☐

h. Mixture studies? Yes ☒ No ☐ N/A ☐

i. Precision and accuracy studies? Yes ☒ No ☐ N/A ☐

j. PCR-based studies to include? Yes ☒ No ☐ N/A ☐

1. Reaction conditions? Yes ☒ No ☐

2. Assessment of differential and preferential amplification? Yes ☒ No ☐

3. Effects of multiplexing? Yes ☒ No ☐

4. Assessment of appropriate controls?

Yes ☒ No ☐

5. Product detection studies?

Yes ☒ No ☐

8.2.2 Are peer-reviewed publication(s) of the underlying scientific principle(s) of a technology available? ☒ ☐ ☐

Discussion

To successfully satisfy Standard 8.2.1, the laboratory must demonstrate compliance with all of the applicable subcategories of this Standard.

If a DNA laboratory is relying upon another laboratory's developmental validation, the citations and publications addressing the elements of Standard 8.2.1 (a through j) must be available and accessible.

If a DNA laboratory has performed its own developmental validation, it must show evidence of how the elements of Standard 8.2.1 (a through j) were addressed.

Case-type samples may be those samples that are from adjudicated cases or mock samples that mimic casework samples.

Comment

		Yes	No	N/A
8.3	Except as provided in Standard 8.3.1.1, have internal validation of all manual and robotic methodologies been conducted by each laboratory and reviewed and approved by the laboratory's technical leader prior to use?	☒	☐	☐
8.3.1	For Internal Validation Studies:			
	a. Have internal validation studies been documented and summarized?	☒	☐	☐
	b. Have all internal validation studies conducted on or after July 1, 2009, included, as applicable:	☒	☐	☐
	1. Known and non-probative evidence samples or mock evidence samples?			

Yes ☒ No ☐ N/A ☐

2. Reproducibility and precision?

Yes ☒ No ☐ N/A ☐

3. Sensitivity and stochastic studies?

Yes ☒ No ☐ N/A ☐

4. Mixture studies?

Yes ☒ No ☐ N/A ☐

5. Contamination assessment?

Yes ☒ No ☐ N/A ☐

8.3.1.1	For multilaboratory systems:			
	a. Has each laboratory in a multi-laboratory system completed, documented, and maintained applicable site-specific precision, sensitivity, and contamination assessment studies?	☐	☐	☒
	b. Are the summaries of all applicable validation data available at each site?	☐	☐	☒
8.3.2	Have quality assurance parameters and interpretation guidelines, including, as applicable, guidelines for mixture interpretation, been defined pursuant to internal validation?	☒	☐	☐
8.3.3	If a laboratory has had a change in detection platform or test kit, have internal validation studies been performed?	☒	☐	☐
8.4	Has the analyst or examination team successfully completed a competency test using the DNA analysis procedure prior to its incorporation into casework applications?	☒	☐	☐

Discussion

Internal validation *is an accumulation of test data within the laboratory to demonstrate that established methods and procedures perform as expected in the laboratory.*

Prior to implementing a new DNA methodology (***methodology*** *is used to describe the analytical processes and procedures used to support a DNA-typing technology: for example, extraction methods [manual vs. automated], quantification methods [slot blot, fluorometry, real-time], typing test kit, and platform [capillary electrophoresis, real-time gel, and end-point gel systems]*) or procedure (***procedure*** *[protocol, SOP or other equivalent] is an established practice to be followed in performing a specified task or under specific circumstances*) or an existing DNA method or procedure developmentally validated by another laboratory, the forensic laboratory must first demonstrate the reliability of the method or procedure internally for manual and/or robotic methods.

The internal validation studies conducted by the forensic laboratory should be sufficient to support and document the reliability of the technology (***technology*** *is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA*) as practiced by that laboratory through demonstrating reproducibility and precision, sensitivity and stochastic studies, mixture studies, and contamination assessment.

For internal validation having a completed summary dated prior to July 1, 2009, the laboratory must comply with Standard 8.3.1b (1) and (2), and the remaining subcategories (3--5) may be marked "N/A." In addition, the studies summarized after July 1, 2009, shall define the quality assurance parameters and interpretation guidelines to support their use in casework applications. Summaries must be written for all internal validation studies, and approval must be documented by the technical leader prior to being incorporated into casework.

For laboratory systems that consist of more than one laboratory, each of the laboratories must complete and maintain precision, sensitivity, and contamination assessment studies. Basic validation studies may be shared among all locations in a multi-laboratory system. The internal validation materials must be documented, summarized, and approved by the technical leader. Summaries of a system's internal validation studies must be available at all sites.

For laboratory systems that have acquired new equipment that leads to a platform change (***platform*** *is the type of analytical system used to generate DNA profiles such as capillary electrophoresis, real-time gel, and end-point gel instruments or systems)*, internal validation studies must be performed.

For laboratory systems that have acquired new test kits (*a* ***test kit*** *is a pre-assembled set of reagents that allows the user to conduct a specific DNA extraction, quantification or amplification*), internal validation studies must be performed.

A list of the validation studies in compliance with Standard 8.1 will be incorporated by the auditor into Appendix E. The validation studies found to be in compliance with Standard 8.1 after one external audit do not need to be reviewed.

Prior to initiating casework applications with any newly validated procedure(s), the DNA laboratory must ensure that its DNA personnel have successfully completed a competency test to the extent of their participation in casework applications. *A* ***competency test(s)*** *is a written, oral, and/or practical test or series of tests designed to establish that an individual has demonstrated achievement of technical skills and met minimum standards of knowledge necessary to perform forensic DNA analysis.* For DNA personnel intimately involved in a validation, the technical leader may allow the validation to serve as the demonstration of competency. Documentation must be available to indicate that the involvement in the validation was representative of the extent the personnel will be involved in casework applications.

Comment

Standards 8.3.1.1.a and 8.3.1.1.b are marked N/A because the laboratory is not part of a multi-laboratory system.

		Yes	No	N/A
8.5	Have modified procedures been evaluated by comparison with the original procedures using similar DNA samples prior to their incorporation into casework applications?	☒	☐	☐
8.6	Has the laboratory evaluated each additional or modified critical instrument by conducting a performance check prior to its use in casework?	☒	☐	☐
8.7	Has the laboratory evaluated software upgrades by conducting a performance check prior to use in casework?	☒	☐	☐
	a. Has new software or significant software modifications been documented and subjected to validation testing prior to use in casework?	☒	☐	☐

Discussion

If a laboratory modifies a procedure that would require a protocol change, the modified procedure shall be evaluated by comparing the original procedure to the modified procedure using similar DNA samples. Modifications must be documented and approved by the technical leader before being implemented in casework applications.

Each new instrument or performance-based software change (including upgrades) requires a performance check (***performance check*** *is a quality assurance measure to assess the functionality of laboratory instruments and equipment that affect the accuracy and/or validity of forensic sample analysis*). [For example, a performance check would be necessary if a laboratory currently used one instrument and added another instrument of the same model number, or if a laboratory was using one instrument and upgraded to a different model of instrument without a change in the analysis software package. If a laboratory upgrades to another instrument and has a change in the analysis software package, then the laboratory must perform an internal validation study.

If acquisition of new equipment leads to a method change (e.g., DNA detection from a gel-based to capillary-based system), internal validation studies must be performed.

New software or significant software changes that would impact interpretation, the analytical process, or sizing algorithms shall require a validation prior to implementation in casework. A software upgrade that would not impact interpretation, the analytical process, or sizing algorithms shall require a performance check.

Comment

Standard 9. Analytical Procedures

		Yes	No	N/A
9.1	Does the laboratory have and follow written analytical procedures approved by the technical leader?	☒	☐	☐
	a. Are the laboratory's standard operating procedures reviewed annually by the technical leader, and is this review documented?	☒	☐	☐
9.1.1	Does the laboratory have a documented standard operating procedure for each analytical method used?	☒	☐	☐
	a. Do the analytical procedures specify reagents, sample preparation, extraction methods, equipment, and controls that are standard for DNA analysis and data interpretation?	☒	☐	☐
	b. Does the laboratory have a procedure for the differential extraction of stains that contain sperm?	☒	☐	☐

Discussion

To successfully satisfy Standard 9.1, the laboratory must demonstrate compliance with all of the subcategories of Standard 9.1.

Procedure *(protocol, standard operating procedure, or other equivalent) is an established practice to be followed in performing a specified task or under specific circumstances.*

Standard operating procedures must be reviewed by the technical leader annually as described in Standard 3. This review must be documented and performed independent of the audit required by Standard 15. Standard operating procedures must be readily available to laboratory personnel, reflect the current practices employed by the laboratory, and be supported through a laboratory's validation.

The laboratory shall have and follow standard operating procedures for each analytical method used by the laboratory (***analytical procedure*** *is an orderly, step-by-step process designed to ensure operational uniformity and to minimize analytical drift).* Each procedure must specify the reagents, sample preparation, extraction method, equipment, and controls used in the analytical process. A DNA laboratory must have a procedure for the differential extraction of stains containing semen.

A DNA laboratory must ensure that all of its procedures are current and readily

available.

Comment

		Yes	No	N/A
9.2	Does the laboratory use reagents that are suitable for the methods employed?	☒	☐	☐
9.2.1	Does the laboratory have written procedures for documenting commercial reagents and for the formulation of in-house reagents?	☒	☐	☐
9.2.2	Are commercial reagents labeled with:	☒	☐	☐
	a. The identity of the reagent? Yes ☒ No ☐			
	b. The expiration date as provided by the manufacturer or as determined by the laboratory? Yes ☒ No ☐			
9.2.3	Are in-house reagents labeled with:	☒	☐	☐
	a. The identity of the reagent? Yes ☒ No ☐			
	b. The date of the preparation or expiration or both? Yes ☒ No ☐			
	c. The identity of the individual preparing the reagent? Yes ☒ No ☐			
9.3	Critical reagents shall include, but are not limited to, the reagents listed in Standards 9.3.1 and 9.3.2.			
	a. Has the laboratory identified critical reagents?	☒	☐	☐
	b. Has the laboratory evaluated critical reagents prior to use in casework?	☒	☐	☐
9.3.1	Has the laboratory identified and evaluated the following:	☒	☐	☐
	a. Test kits or systems for performing quantitative PCR? Yes ☒ No ☐ N/A ☐			

b. Test kits or systems for performing genetic typing?

Yes ☒ No ☐ N/A ☐

9.3.2 Has the laboratory identified and evaluated the following: ☐ ☐ ☒

a. Thermostable DNA polymerase (if not tested as test kit components under Standard 9.3.1)?

Yes ☐ No ☐ N/A ☒

b. Primer sets (if not tested as test kit components under Standard 9.3.1)?

Yes ☐ No ☐ N/A ☒

c. Allelic ladders used for genetic analysis (if not tested as test-kit components under Standard 9.3.1)?

Yes ☐ No ☐ N/A ☒

Discussion

To successfully satisfy Standard 9.2, the laboratory must demonstrate compliance with all of the subcategories of Standard 9.2.

The laboratory shall have and follow written procedures for documenting commercial reagents and formulating in-house reagents.

Commercial reagents must be labeled with the identity of the reagent and the expiration date as provided by the manufacturer or determined by the laboratory. If the laboratory has determined an expiration date beyond that provided by the manufacturer, supporting documentation for that date must be available at the laboratory. For those reagents having no expiration date provided by the manufacturer, the laboratory shall have a policy for setting the expiration date.

In-house reagents must be labeled with the identity of the reagent, the date of preparation or expiration or both, and the identity of the individual preparing the reagent.

If the laboratory has an electronic bar-coding system for the management of its in-house reagents, the laboratory must place the name of the reagent on the bottle in addition to the bar-coded information and have a written policy or procedure for recording the required information. In such instances Standards 9.2.2 through 9.2.3 shall be marked "Yes."

Records must be maintained that identify the preparer of the reagent and the quality control measures (if any) used to check the reliability of reagents.

Test kit *is a preassembled set of reagents that allows the user to conduct a specific DNA extraction, quantification, or amplification.* A system is similar to a test kit except that it is not preassembled.

Critical reagents *are determined by empirical studies or routine practice to require testing on established samples before use on evidentiary or casework reference samples.* The laboratory must identify the reagents critical to the analytical processes used and evaluate each, prior to their use on evidence. This list must include, at a minimum, those critical reagents listed in Standards 9.3.1 and 9.3.2. Laboratories must have written procedures detailing the quality control measures in place for evaluating critical reagents and materials, the acceptable range of results, procedures for addressing unacceptable data, and mechanisms used for documentation and subsequent approval/rejection of quality control data.

Comment
Standards 9.3.2, 9.3.2.a, 9.3.2.b, and 9.3.2.c are marked N/A because thermostable DNA polymerase, primer sets, and allelic ladders are tested as test kit components under Standard 9.3.1.

		Yes	No	N/A
9.4	Does the laboratory quantify the amount of human DNA in forensic samples prior to nuclear DNA amplification?	☒	☐	☐

Discussion

When using PCR-based analysis techniques for nuclear DNA, the presence or absence of detectable human DNA must be assessed with regard to the unknown evidentiary samples for compliance with Standard 9.4. Quantification in forensic samples must be assessed prior to nuclear DNA amplification.

Quantification of human DNA is not required for casework reference samples if the laboratory has a validated system that has been demonstrated to reproducibly and reliably yield successful DNA amplification and typing without prior quantification. These methods are suitable for use on known reference samples from casework and evidentiary items that are subjected solely to mitochondrial DNA analysis. In such instances, the response to Standard 9.4 shall be marked "N/A."

Comment

		Yes	No	N/A
9.5	Does the laboratory monitor the analytical procedures using appropriate controls and standards?	☒	☐	☐
9.5.1	Are standards used during quantification procedures?	☒	☐	☐
9.5.2	For positive and negative amplification controls:	☒	☐	☐
	a. Are the positive and negative amplification controls associated with the forensic samples being typed amplified concurrently in the same instrument with the samples at all loci using the same primers as the forensic samples?	☒	☐	☐
	b. Are the positive and negative amplification controls associated with the forensic samples being typed?	☒	☐	☐
9.5.3	Are reagent blank controls associated with each extraction set being analyzed as follows:	☒	☐	☐
	9.5.3.1 Extracted concurrently?	☒	☐	☐
	9.5.3.2 Are the reagent blanks amplified using:	☒	☐	☐
	a. The same primers as the forensic sample(s)? Yes ☒ No ☐			
	b. The same instrument model as the forensic sample(s)? Yes ☒ No ☐			
	c. The same concentration conditions as required by the forensic sample(s) containing the least amount of DNA? Yes ☒ No ☐			
	9.5.3.3 Are the reagent blanks typed using:	☒	☐	☐
	a. The same instrument model as the forensic sample(s)? Yes ☒ No ☐			
	b. The same injection conditions as the forensic sample(s)? Yes ☒ No ☐			
	c. The most sensitive volume conditions of the forensic extraction set? Yes ☒ No ☐			
9.5.4	Does the laboratory use allelic ladders and internal size markers for VNTR sequence PCR- based systems?	☐	☐	☒

Discussion

A laboratory shall have and follow documented procedures to address the use of positive and negative controls in casework applications. *A **positive amplification control** is an analytical control sample that is used to determine if the PCR performed properly. This control consists of the amplification reagents and a known DNA sample. A **negative amplification control** is used to detect DNA contamination of the amplification reagents.* This control consists of only amplification reagents without the addition of template DNA. *A **reagent blank control** is an analytical control sample that contains no template DNA and is used to monitor contamination from extraction to final fragment or sequence analysis.* This control is treated the same as, and parallel to, the forensic and/or casework reference samples being analyzed. These procedures shall identify the acceptable results for controls and the verification and documentation of their use. A laboratory must use quantification standards as a part of its quantification process.

A laboratory shall associate a reagent blank control with each extraction set or batch of samples as defined by the laboratory. **The additional requirements for reagent blank controls specified in Standards 9.5.3.2 and 9.5.3.3 are applicable to samples extracted on or after July 1, 2009.**

The reagent blank control shall be extracted concurrently and in the most sensitive volume of the extraction set. If a laboratory does not quantitate its reagent blanks, it must document and verify that the reagent blanks are amplified concurrently with the forensic sample(s) being characterized from an extraction set.

If a laboratory has a practice of setting up multiple reagent blanks within its extraction set, and as a part of its process, it quantitates its reagent blanks, the laboratory shall amplify at least one of those reagent banks, if it is carrying on any of the specimens associated with the extraction set on to amplification in accordance with Standard 9.5.3.2. If a laboratory does set up multiple reagent blanks and quantitates those reagent blanks with its extraction set, it shall amplify and characterize at least the reagent blank that demonstrates the greatest signal, if any.

If a laboratory uses multiple amplification test kits and the laboratory has depleted its reagent blanks associated with the extraction set or sample being amplified, a laboratory shall not continue on to a different amplification test kit without a reagent blank.

For extraction sets being amplified, a laboratory shall concurrently amplify at all loci a set of positive and negative amplification controls along with its reagent blank using the same primers as the forensic sample(s), amplified in the same instrument as the forensic sample(s), and amplified using the most sensitive concentration conditions (criteria 9.5.3.2c) as required by the forensic sample(s) that contain the least amount of DNA. For example, a laboratory has validated bringing all of its extracted questioned specimens and reagent blanks up in 20ul and quantitating 10% (2ul). After evaluating the quantitation results of the extraction set, one of the questioned samples requires the

remaining 18ul for amplification. Therefore, at least 18ul from an associated reagent blank shall be amplified with that extraction set. As another example, if after quantitation, a laboratory needs to reconstitute samples, one of the reagent blanks associated with that extraction set will also need to follow through that process.

If a laboratory reamplifies a sample with the same amplification test kit or system, and does not increase the template volume over that of the original reagent blank, and does not alter the amplification parameters to increase sensitivity, the laboratory does not need to reamplify the reagent blank associated with the extraction set being reamplified, provided, however, that the laboratory includes amplification positive and negative controls with the extraction set

If a laboratory injects samples at varying injection times, amplicon volumes, and/or injection voltage, the reagent blank must satisfy the most sensitive injection conditions. For example, if a laboratory uses a five-second injection and a 10-second injection on a sample set, the laboratory must inject its reagent blank with at least the 10-second injection.

If a laboratory determines at the quantification stage to terminate all evidentiary sample processing, in order to monitor analytical quality, the reagent blank control must be either quantitated or typed in order for the evidentiary sample processing to be terminated. In order for a laboratory to determine that evidentiary sample processing is to be terminated after DNA quantitation, the laboratory shall have a validation study to support that determination.

If a laboratory is using mass spectrometry with respect to Standard 9.5.4, the term "allelic ladder" refers to a collection of DNA fragments or the expected molecular masses of these DNA fragments for any particular locus.

Comment
Standard 9.5.4 is marked N/A because the laboratory does not utilize VNTR sequence PCR-based systems.

		Yes	No	N/A
9.5.5	Does the laboratory check its DNA procedures either annually or whenever substantial changes are made to a procedure against an appropriate and available NIST standard reference material (SRM) or standard traceable to a NIST standard?	☒	☐	☐

Discussion

The laboratory must demonstrate performance through an annual check of its laboratory procedures (at a minimum from amplification to characterization) to generate typing

results for each technology ***(technology** is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA*).

***NIST** is the National Institute of Standards and Technology.*

***Reference material (certified or standard)** is a material for which values are certified by a technically valid procedure and accompanied by, or traceable to, a certificate or other documentation which is issued by a certifying body.*

Laboratories have the option of using one sample from the NIST SRM or to create/purchase a NIST-traceable standard for their annual check. Laboratories are not required to purchase a NIST SRM kit each year to comply with Standard 9.5.5. Laboratories may identify controls and run these against the NIST SRM, which in turn makes these controls NIST-traceable. For those laboratories that use a bloodstain control, a "lot" is identified as the bloodstain(s) that are tested against the NIST SRM, not the person from whom the blood was drawn. This lot may be used annually to verify the controls and DNA procedures in use by the laboratory. This annual check of typing results must be assessed separately from any use the NIST SRM may have within casework traceability (e.g., if a laboratory uses 9947A as a part of its internal positive control for casework). A laboratory must demonstrate a designated NIST SRM laboratory check of its procedure annually or whenever a substantial change is made to the procedure. A substantial change would be a change in test kit, platform, or software.

Laboratories have the option of using additional NIST SRMs (such as Human Quantification Standard NIST SRM 2372) that may be available, but their use is not required by Standard 9.5.5.

Comment

		Yes	No	N/A
9.6	Does the laboratory have and follow written guidelines for the interpretation of data?	☒	☐	☐
9.6.1	Does the laboratory verify that all control results meet the laboratory's interpretation guidelines for all reported results?	☒	☐	☐

9.6.2 Has the 1996 National Research Council report and/or a court-directed method been used for the statistical interpretation of a DNA profile for a given population and/or hypothesis or relatedness, and are these calculations derived from an established population database(s) appropriate for the calculation? ☒ ☐ ☐

9.6.3 Does the laboratory have and follow specific documented statistical interpretation guidelines if genetic analyses that are not addressed by Standard 9.6.2 are being performed? ☒ ☐ ☐

9.6.4 Does the laboratory have and follow documented procedures for mixture interpretation to include the following: ☒ ☐ ☐

a. Major and minor contributors? Yes ☒ No ☐

b. Inclusions and exclusions? Yes ☒ No ☐

c. Policies for reporting results and statistics? Yes ☒ No ☐

Discussion

A laboratory shall have and follow written guidelines for the interpretation of data that are supported through its validation. A laboratory shall verify that all control results meet the laboratory's interpretation guidelines for all reported results. A documented method must exist to demonstrate that control values are verified when used (e.g., check-off, technical review).

The statistical interpretation of autosomal loci shall be made following recommendations 4.1, 4.2, or 4.3, as deemed applicable, of the National Research Council report titled "The Evaluation of Forensic DNA Evidence" (1996) and/or a court-directed method. The laboratory shall provide documentation for the interpretation method being used. These calculations shall be derived from a documented population database(s) appropriate for the calculation.

If a laboratory is performing genetic analyses not addressed by Standard 9.6.2, (e.g., Y-chromosome, mtDNA), the laboratory shall have and follow documented statistical interpretation guidelines for that testing.

A laboratory shall have and follow a documented procedure for mixture interpretation supported by its validation. Based upon a laboratory's validation, it shall have and follow procedures to discern major and minor contributors, inclusions and exclusions, and policies for reporting results and applicable statistics.

Comment

		Yes	No	N/A
9.7	Does the laboratory have and follow a documented policy for detecting and controlling contamination?	☒	☐	☐

Discussion

Contamination *is the unintentional introduction of exogenous DNA into a DNA sample or PCR reaction.*

A laboratory shall have and follow a documented policy for detecting and controlling contamination. This policy should include the procedures used by a laboratory for monitoring, decontaminating, and detecting contamination. In addition, a laboratory shall have and follow policies and/or procedures for interpreting data potentially affected by contamination.

Comment

Standard 10. Equipment Calibration and Maintenance

		Yes	No	N/A
10.1	Does the laboratory use equipment that is suitable for the methods employed?	☒	☐	☐
10.2	Does the laboratory have and follow a documented program for conducting performance checks and calibrating equipment and instruments?	☒	☐	☐
10.2.1	At a minimum, are the following critical instruments or equipment performance-checked at least annually:	☐	☒	☐
	10.2.1.1 A thermometer that is traceable to national or international standard(s) and is used for conducting performance checks?	☒	☐	☐
	10.2.1.2 Balance/scale?	☒	☐	☐
	10.2.1.3 Thermal cycler temperature-verification system?	☐	☒	☐
	10.2.1.4 Thermal cycler, including quantitative-PCR?	☐	☒	☐
	10.2.1.5 Electrophoresis detection systems?	☐	☐	☒
	10.2.1.6 Robotic systems?	☒	☐	☐
	10.2.1.7 Genetic analyzers?	☒	☐	☐

	10.2.1.8 Mechanical pipettes?	☒	☐	☐
10.3	Does the laboratory have a schedule and follow a documented program to ensure that instruments and equipment are maintained properly?	☒	☐	☐
	a. Has documentation been retained for maintenance, service, and/or calibration?	☒	☐	☐
10.4	Does the laboratory performance check new critical instruments and equipment, or critical instruments and equipment that have undergone repair, service or calibration, before their use in casework analysis?	☒	☐	☐
10.4.1	At a minimum, are the following critical instruments or equipment performance-checked following repair, service, or calibration:	☒	☐	☐
	10.4.1.1 Electrophoresis detection systems?	☐	☐	☒
	10.4.1.2 Robotic systems?	☒	☐	☐
	10.4.1.3 Genetic analyzers?	☒	☐	☐
	10.4.1.4 Thermal cycler, including quantitative-PCR?	☒	☐	☐

Discussion

Calibration *is the set of operations which establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system, or values represented by a material, and the corresponding known values of a measurement.*

Critical equipment or instruments *are those requiring calibration or a performance check prior to use and periodically thereafter.*

Performance check *is a quality assurance measure to assess the functionality of laboratory instruments and equipment that affect the accuracy and/or validity of forensic sample analysis.*

Traceability *is the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons.*

To successfully satisfy Standards 10.2 and 10.4, the laboratory must demonstrate compliance with all of the subcategories of both Standards.

To successfully satisfy the requirements listed in Standards 10.2 and 10.4, the laboratory's documentation must, at a minimum, include all critical equipment and instruments listed above. The laboratory's documentation must include the schedules

for and records of all repairs, service, or calibrations for the critical equipment and instruments. Critical equipment or instruments are those requiring calibration prior to use and periodically thereafter when the accurate calibration of that instrument directly affects the results of the analysis.

The minimum requirements of a performance check of a thermometer used for performing performance checks may be accomplished through: (1) certification by an outside vendor; or (2) in-house by the comparison of one or more temperature readings at various time intervals against another NIST-traceable thermometer.

For example, a NIST-traceable thermometer certified for two years and used for conducting performance checks on equipment shall require the annual performance check. A NIST-traceable thermometer certified for two years that is not used for conducting performance checks does not require the annual performance checks and may be used until the certification expires. A NIST-traceable thermometer to be used beyond its certification date shall be recertified or be subject to the annual performance-check requirements.

The minimum requirements of a performance check of a balance or scale may be accomplished either through an outside vendor or performed in-house by the laboratory using certified weights.

The minimum requirements of a performance check of a thermal cycler temperature-verification system may be accomplished through certification by an outside vendor or accomplished in-house by the comparison against a certified thermal cycler temperature verification system.

The minimum requirements of a performance check of a thermal cycler, including quantitative-PCR include the system's diagnostic programs and the use of an appropriate certified temperature verification system or process.

The minimum requirements of a performance check of an electrophoresis detection system may be accomplished by analyzing amplification controls or internal standards or using previously characterized DNA samples for comparison.

The minimum requirements of a performance check of a robotic system shall be defined by the laboratory. This performance check may be accomplished by an outside vendor or accomplished in-house by the laboratory.

The minimum requirements of a performance check of a genetic analyzer may be accomplished by analyzing amplification controls or internal standards or using previously characterized DNA samples for comparison. For example, a laboratory may choose to performance-check a genetic analyzer by analyzing a set containing an amplification positive, an amplification negative and a ladder. If a laboratory uses a mass spectrometer, a performance check would be defined by the laboratory to verify sensitivity and accurate mass assignments.

The minimum requirements of a performance check of a mechanical pipette may be accomplished by certification by an outside vendor or accomplished in-house through the comparison of a series of measurements. For example, measurements are evaluated at a high and low setting of the pipette's range.

Laboratories have the option of using additional NIST SRMs (e.g., Human Quantification Standard NIST SRM 2372) that may be available, but their use is not required by Standard 10.2.1 unless specifically referenced by the laboratory.

The critical instruments and equipment identified in Standard 10.4.1 require additional (beyond annual) performance checks after repair, service or calibration. At a minimum, the electrophoresis detection system, robotic systems, genetic analyzers, and thermal cyclers listed in Standard 10.4.1 shall be performance-checked after repair, service, or calibration. New critical instruments and equipment, and critical instruments or equipment having a specific repair, service, or calibration, may necessitate additional performance check elements as defined by the laboratory to demonstrate acceptable sensitivity and precision as those instruments previously in use.

Critical instruments or equipment that are not listed in Standard 10.4.1 are not required to have a performance check after repair, service, or calibration.

Comment
Standards 10.2.1, 10.2.1.3 and 10.2.1.4 – See Findings Section
Standards 10.2.1.5 and 10.4.1.1 are marked N/A because the Laboratory does not utilize electrophoresis detection systems.

Standard 11. Reports

		Yes	No	N/A
11.1	a. Does the laboratory have and follow written procedures for taking and maintaining case notes to support the conclusions drawn in laboratory reports?	☒	☐	☐
	b. Does the laboratory maintain all analytical documentation generated by analysts related to case analyses?	☒	☐	☐
	c. Does the laboratory retain, in hard copy or electronic format, sufficient documentation for each technical analysis to support the report conclusions such that another qualified individual could interpret and evaluate the data?	☒	☐	☐

Discussion

Laboratory case records may be in hard copy, electronic files, or a combination of both formats.

The laboratory should have a written procedure detailing documentation maintained under this Standard. Materials contained in case records must demonstrate compliance with this Standard.

Comment

		Yes	No	N/A
11.2	Do the laboratory reports include the following elements:	☒	☐	☐
	11.2.1 Case identifier?	☒	☐	☐
	11.2.2 Description of evidence examined?	☒	☐	☐
	11.2.3 Description of technology?	☒	☐	☐
	11.2.4 Locus or amplification system?	☒	☐	☐
	11.2.5 Results and/or conclusions?	☒	☐	☐
	11.2.6 A quantitative or qualitative interpretative statement?	☒	☐	☐
	11.2.7 Date issued?	☒	☐	☐
	11.2.8 Disposition of evidence?	☒	☐	☐
	11.2.9 Signature and title, or equivalent identification, of the person accepting responsibility for the content of the report?	☒	☐	☐

Discussion

The laboratory must generate sufficient documentation for each technical analysis to support the reported conclusions such that in the absence of the analyst who reported the analysis, another qualified analyst could evaluate and interpret the resulting data.

For Standard 11.2.4, the name of an amplification system (PCR test kit) may be used as long as the laboratory documents the loci characterized in the kit used.

The data generated by the analysis may be considered the results and may include the analyst's evaluation of the results. The quantitative or qualitative interpretation provides a statement of the weight of the conclusion.

One person shall accept responsibility for the content of the report. A secure electronic signature is considered equivalent identification.

Comment

		Yes	No	N/A
11.3	Does the laboratory maintain the confidentiality of reports, case files, DNA records, and databases, except as otherwise provided by applicable state or federal law?	☒	☐	☐
11.3.1	Does the laboratory have and follow written procedures to ensure the privacy of reports, case files, DNA records, and databases?	☒	☐	☐
11.3.2	Does the laboratory have and follow written procedures for the release of reports, case files, DNA records, and databases in accordance with applicable state or federal law?	☒	☐	☐
11.3.3	Does the laboratory release personally identifiable information in accordance with applicable state and federal law?	☒	☐	☐

Discussion

The release of database information in Standard 11.3 is specifically limited to database applications and does not apply to forensic (anonymous) population databases that are used by casework laboratories to estimate allele frequency information.

Comment

Standard 12. Review

		Yes	No	N/A
12.1	Does the laboratory conduct and document administrative and technical reviews of all case files and reports to ensure that conclusions and supporting data are reasonable and within the constraints of scientific knowledge?	☒	☐	☐

12.1.1 Are all technical reviews conducted by an individual that is, or has been, a qualified analyst in the methodology being reviewed? ☒ ☐ ☐

Discussion

Administrative review *is an evaluation of the report and supporting documentation for consistency with laboratory policies and for editorial correctness.*

Technical review *is an evaluation of reports, notes, data, and other documents to ensure there is an appropriate and sufficient basis for the scientific conclusions.*

The laboratory must conduct and document both administrative and technical reviews of all case files and reports prior to issuing the report.

An analyst who performs technical reviews on DNA casework shall be or have been an analyst qualified in the specific DNA methodology that the review encompasses.

Technical reviewer *is an employee or contract employee who is a current or previously qualified analyst in the methodology being reviewed that performs a technical review of, and is not an author of, the applicable report or its contents.*

Methodology *is used to describe the analytical processes and procedures used to support a DNA-typing technology: for example, extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kit; and platform (capillary electrophoresis, real-time gel and end-point gel systems).*

The technical reviewer must be proficiency-tested semiannually to the extent to which he or she performs casework. A qualified analyst proficiency-tested in the specific DNA methodology is qualified to serve as a technical reviewer without needing to take an additional proficiency test as a technical reviewer.

An analyst whose sole responsibility is technical review must be qualified under Standard 5.4 and its subsections to the extent of his or her interpretative role as a technical reviewer. Additionally, an analyst whose sole responsibility is technical review must be proficiency-tested in technical review.

The administrative reviewer is not required to be a current or former qualified DNA analyst.

This Standard is intended for data generated within the DNA laboratory. **The review of data generated external to the laboratory is governed by Standard 17.**

Comment

		Yes	No	N/A
12.2	Does the laboratory document the completion of the technical review of forensic casework, and does it include the following elements:	☒	☐	☐
12.2.1	A review of all case notes, worksheets, and electronic data (or printed electropherograms/images) that support the conclusions?	☒	☐	☐
12.2.2	A review of all DNA types to verify that they are supported by the raw or analyzed data (electropherograms or images)?	☒	☐	☐
12.2.3	A review of all profiles to verify correct inclusions and exclusions (if applicable) as well as a review of any inconclusive result for compliance with laboratory guidelines?	☒	☐	☐
12.2.4	A review of all controls, internal lane standards, and allelic ladders to verify that the expected results were obtained?	☒	☐	☐
12.2.5	A review of statistical analysis, if applicable?	☒	☐	☐
12.2.6	A review of the final report to verify that the results/conclusions are supported by the data?	☒	☐	☐
	a. Does the report address each tested item or its probative fraction?	☒	☐	☐
12.2.7	For verification of CODIS eligibility. Has there been verification that all profiles entered into CODIS are eligible and have the correct DNA types and correct specimen category?	☐	☐	☒
12.2.7.1	Prior to upload to or search of SDIS, have the following been verified for DNA profiles:	☐	☐	☒
	a. Eligibility for CODIS? Yes ☐ No ☐			
	b. Correct DNA types? Yes ☐ No ☐			
	c. Appropriate specimen category? Yes ☐ No ☐			
12.2.7.2	Prior to entry of a DNA profile into a searchable category of SDIS, were the following criteria verified by two concordant assessments by a qualified analyst or technical reviewer:	☐	☐	☒
	a. Eligibility for CODIS? Yes ☐ No ☐			
	b. Correct DNA types? Yes ☐ No ☐			
	c. Appropriate specimen category? Yes ☐ No ☐			

Discussion

Final reports of forensic casework shall address each tested item or its probative fraction. Any stain, sample, or item on which an attempt is made to isolate DNA, regardless of the outcome or result, must be addressed in the final report. In the case of a differential extraction, the laboratory will describe what it considers to be the probative fraction and the probative fraction must be included in the final report.

The laboratory shall have a written procedure detailing the elements of its technical review including how the completion of the technical review will be documented. The laboratory's technical review procedures of forensic casework must include each of the above elements.

Prior to the upload or search of a profile at SDIS, DNA profiles must be verified for eligibility for CODIS, correct DNA types, and appropriate specimen category. For laboratories without an LDIS casework component, prior to entry of a profile into a searchable category at SDIS, the eligibility for CODIS, correct DNA types, and appropriate specimen category must be verified by another qualified analyst or technical reviewer at the SDIS laboratory.

Standard 12.2.7 and its subcategories shall be marked "N/A" for non-NDIS participating-laboratories.

Comment
Standard 12.2.7 and its subcategories are marked N/A because the laboratory is a non-NDIS participating laboratory.

		Yes	No	N/A
12.3	Does the administrative review include the following elements (any or all of which may be included within the technical-review process):	☒	☐	☐
12.3.1	A review of the case file and final report for clerical errors and for the presence and accuracy of the information specified in Standard 11.2?	☒	☐	☐
12.3.2	A review of the chain of custody and disposition of evidence?	☒	☐	☐
12.3.3	A procedure to document the completion of the administrative review?	☒	☐	☐

Discussion

Administrative review *is an evaluation of the report and supporting documentation for consistency with laboratory policies and for editorial correctness.*

The laboratory's administrative review procedures of forensic casework must include all of the above elements and may be included within the technical-review process. The review of the chain of custody and disposition of evidence shall be limited to the items received by the DNA laboratory.

Comment

		Yes	No	N/A
12.4	Does the laboratory document the elements of a technical and administrative review?	☒	☐	☐
	a. Are case files reviewed and documented according to the laboratory's procedures?	☒	☐	☐
12.5	Does the laboratory have and follow a documented procedure to address unresolved discrepant conclusions between analysts and reviewers?	☒	☐	☐
12.6	Does the laboratory have and follow a documented procedure for the verification and resolution of database matches?	☐	☐	☒

Discussion

Laboratories must describe the method used for documenting the completion of technical and administrative reviews, as well as a procedure that defines the course of action necessary in the event of an unresolved discrepancy. Laboratories that include some or all of the administrative review elements listed in Standard 12.3 in their technical review procedure also must document the completion of the administrative review.

To satisfy Standard 12.6, the laboratory must have and follow a documented procedure to evaluate and resolve candidate matches.

Standard 12.6 shall be marked "N/A" for non-NDIS-participating laboratories.

Comment
Standard 12.6 was marked N/A because the laboratory does not participate in CODIS.

		Yes	No	N/A
12.7	Does the laboratory have and follow a program that documents the annual monitoring of the testimony of each analyst?	☒	☐	☐

Discussion

The testimony of individuals who provide expert witness testimony as part of their current positions must be monitored at least once annually. Several methods of monitoring are possible, and laboratories may select an appropriate approach. Laboratories must define the elements and standardize the method for capturing information necessary to review an individual's testimony. The testimony-monitoring report or results must be reviewed with the individual to identify areas of strengths and weaknesses. The laboratory shall maintain documentation of this monitoring process.

The laboratory must provide clear documentation identifying individuals who did not testify over the course of the year.

Comment

Standard 13. Proficiency Testing

		Yes	No	N/A
13.1	Do analysts, technical reviewers, technicians, and other personnel designated by the technical leader undergo semiannual external proficiency testing in each technology performed to the full extent in which they participate in casework?	☒	☐	☐

Discussion

Semiannual *is used to describe an event that takes place two times during one calendar year, with the first event taking place in the first six months of the calendar year and the second event in the last six months of the calendar year, and where the interval between events is at least four months and not more than eight months.* The program shall be administered in an open proficiency-testing format. The results shall be submitted to the proficiency-test provider in order to be included in the provider's published external summary report.

An external proficiency test is defined as a test obtained from an approved proficiency-test provider. The laboratory must not have access to the proficiency-test results until all participants have completed the test.

All analysts, technical reviewers, technicians, and other personnel designated by the technical leader, must be externally proficiency-tested semiannually, in each DNA technology to the full extent in which they perform casework examinations. ***Technology*** *is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA.* It is permissible for multiple technologies to be reported on a single proficiency test. However, all individuals must be tested semiannually in each technology performed to the full extent to which they participate in casework. For example, for individuals qualified in multiple technologies, each such individual must be externally proficiency-tested in each technology semiannually. All applicable samples in a single proficiency test shall be worked for each technology.

There are no proficiency test requirements for individuals who function solely as technical leaders or casework CODIS administrators.

Comment

		Yes	No	N/A
13.1.1	Are individuals using both manual and automated methods proficiency-tested in each, at least once per year, to the full extent in which they participate in casework?	☒	☐	☐
13.1.2	Have newly qualified individuals entered the external proficiency-testing program within six months of the date of their qualification?	☒	☐	☐
13.1.3	Has the laboratory defined, documented, and consistently used the date that the proficiency test is performed as the received date, assigned date, submitted date, or due date?	☒	☐	☐
13.1.4	Except as provided in Standard 13.1.4.1, has each analyst been assigned and completed his or her own external proficiency test?	☒	☐	☐
	13.1.4.1 If a team approach is used, have all analysts, technicians, and technical reviewers been proficiency-tested according to Standard 13.1?	☐	☐	☒

13.1.5	Has the typing of all CODIS core loci or CODIS core sequence ranges been attempted for each technology performed as applicable?	☒	☐	☐
13.1.6	Does the laboratory maintain the following records for proficiency tests:	☒	☐	☐
	13.1.6.1 The test-set identifier?	☒	☐	☐
	13.1.6.2 Identity of the analyst, and other participants, if applicable?	☒	☐	☐
	13.1.6.3 Date of analysis and completion?	☒	☐	☐
	13.1.6.4 Copies of all data and notes supporting the conclusions?	☒	☐	☐
	13.1.6.5 The proficiency test results?	☒	☐	☐
	13.1.6.6 Any discrepancies noted?	☒	☐	☐
	13.1.6.7 Corrective actions taken?	☒	☐	☐
13.1.7	Does the laboratory include, at a minimum, the following criteria for evaluating proficiency test results:	☒	☐	☐
	13.1.7.1 Evaluation:			
	a. Are all reported inclusions correct?	☒	☐	☐
	b. Are all reported exclusions correct?	☒	☐	☐
	c. Are all reported genotypes and/or phenotypes correct or incorrect according to consensus results or within the laboratory's interpretation guidelines?	☒	☐	☐
	13.1.7.2 Are results that are reported as inconclusive or not interpretable consistent with written laboratory guidelines?	☒	☐	☐
	13.1.7.2.1 Has the technical leader reviewed any inconclusive result for compliance with laboratory guidelines?	☒	☐	☐
	13.1.7.3 Have all discrepancies/errors and subsequent corrective actions been documented?	☐	☐	☒
	13.1.7.4 Have all final reports been graded as satisfactory or unsatisfactory?	☒	☐	☐
	13.1.7.4.1 When a final report was graded satisfactory, was it shown that no analytical errors were observed for the DNA profile typing data?	☒	☐	☐
	13.1.7.4.1.1 If present, were administrative errors and corrective actions documented?	☐	☐	☒

13.1.8	Have all proficiency-test participants been informed of their final test results, and has this notification been documented?	☒	☐	☐
13.1.9	Has the technical leader been informed of the results of all participants, and has this notification been documented?	☒	☐	☐
	a. If applicable, did the technical leader inform the casework CODIS administrator of all nonadministrative discrepancies that affect the typing results and/or conclusions at the time of discovery?	☐	☐	☒

Discussion

Laboratories that routinely employ a team approach for conducting DNA examinations (such as several technicians, each performing a separate, dedicated aspect of the DNA process on evidentiary materials) may similarly employ a team approach for performing proficiency tests.

Laboratories that have both manual and automated methods shall proficiency test each individual who is qualified in both manual and automated in each method at least once per year to the full extent in which they participate in casework. For example, if an individual is qualified in both manual and automated methods for DNA extraction in casework, then the individual must be proficiency tested in each method at least once per year to the full extent in which he or she participates in casework. If a laboratory has multiple manual and/or automated methods, the individual must be proficiency tested on at least one of the manual methods and one of the automated methods per year. This does not preclude the possibility that both methods may be administered on a single proficiency test.

Newly qualified analysts must enter into the proficiency test cycle within 6 months of qualification by performing the extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kits; and platforms (capillary electrophoresis, real-time gel and end-point gel systems) to the full extent of his or her participation in casework analyses. If the analyst was qualified in multiple extraction methods (manual/automated), quantitation methods, typing test kits, and/or platforms, all methods must be addressed between the most immediate proficiency test (within 6 months) and the following proficiency test cycle.

Currently qualified analysts who become qualified in additional extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kits; and/or platform (capillary electrophoresis, real-time gel and end-point gel systems) must be proficiency tested on the additional methods in his/her next scheduled proficiency test.

Laboratories that have more than one platform shall proficiency test each individual that is qualified in more than one platform on each platform at least once per year to the full

extent in which they participate in casework. For example, if an individual is qualified in both capillary and gel-based platforms, then the individual must be proficiency tested on each platform at least once per year to the full extent in which he or she participates in casework. This does not preclude the possibility that multiple platforms may be administered on a single proficiency test.

Laboratories that have more than one amplification test kit shall proficiency test each individual that is qualified in more than one amplification test kit once per year to the full extent in which he or she participates in casework. For example, if an individual is qualified in two different amplification test kits, each containing all of the CODIS core loci, then the individual must be proficiency tested with each amplification test kit once per year to the full extent in which he or she participates in casework.

For an individual qualified in multiple amplification test kits or systems for a specific technology, the individual must be proficiency tested on each amplification test kit or system over the course of the year. **However, the individual must be proficiency tested on all the CODIS core loci and/or core sequence ranges for each semiannual proficiency test cycle.** This requirement to be semiannually proficiency tested on all the CODIS core loci or core sequence ranges only applies to an analyst who is qualified in an amplification kit or combination of kits that possess all of the CODIS core loci or core sequence ranges. This does not preclude the possibility that multiple amplification test kits may be administered on a single proficiency test. For mtDNA proficiency testing, a test system consists of any combination of primers selected based upon the nature of the sample to analyze the CODIS core sequence range along with the polymerase, buffers, and dNTPs required for the amplification.

Laboratories that use a team approach in casework analysis may use this approach in their required semiannual proficiency testing; however, each individual shall be proficiency tested at least once per year in each amplification test kit for DNA typing, platform, and an automated and/or manual (as applicable) method to the full extent of his or her participation in casework. Individuals using a team approach are still required to participate in semiannual external proficiency testing in each technology performed.

Each proficiency test must include testing for all CODIS core loci and/or CODIS core sequence ranges for each of the technologies performed.

It shall be the technical leader's responsibility to determine whether an error in interpretation or typing shall be classified as an analytical error or not, based on review of the analytical data to ensure consistency with laboratory interpretation guidelines. A satisfactory grade is attained for a proficiency test when there are no analytical errors for the DNA profile-typing data. The occurrence of administrative errors and corrective actions shall be documented. If no administrative errors or corrective actions have occurred, Standard 13.1.7.4.1.1 shall be marked "N/A."

It shall be the technical leader's responsibility to review and document that any inconclusive results are in compliance with laboratory guidelines.

The laboratory must have and use a documented program for evaluating proficiency-testing data as listed in Standard 13.1.7. Each participant shall be informed of his or her final test results, and the notification shall be documented.

The technical leader shall be informed of the results of all participants and shall be responsible for informing the casework CODIS administrator of all non- administrative discrepancies that affect the typing results and/or conclusions at the time of discovery. If nonadministrative discrepancies did not occur, Standard 13.1.9.a shall be marked "N/A."

Comment

Standard 13.1.4.1 is rated N/A because the laboratory does not use a team approach.

Standard 13.1.7.3 is rated N/A because no discrepancies/errors and subsequent corrective actions occurred.

Standard 13.1.7.4.1.1 is rated N/A because no administrative errors or actions have occurred.

Standard 13.1.9.a is rated N/A because the laboratory is not a CODIS laboratory.

		Yes	No	N/A
13.2	Does the laboratory use an external proficiency-test provider(s) that is in compliance with the current proficiency-testing manufacturing guidelines established by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board or is in compliance with the current International Organization for Standardization?	☒	☐	☐

Discussion

An external proficiency-test provider must demonstrate compliance with the current proficiency-testing manufacturing guidelines established by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board. Alternatively, the external proficiency-test provider can demonstrate compliance with the International Organization for Standardization (ISO) ISO/IEC 17043: 2010.

Comment

Standard 14. Corrective Action

		Yes	No	N/A
14.1	For a corrective action plan:			
	a. Has the laboratory established and followed a corrective action plan that addresses discrepancies detected in proficiency tests and casework analysis?	☒	☐	☐
	b. Does the corrective action plan, at a minimum, address the following:	☒	☐	☐
	1. Define what level/type of discrepancies are applicable to this practice? Yes ☒ No ☐ N/A ☐			
	2. Identify (when possible) the cause of the discrepancy? Yes ☒ No ☐ N/A ☐			
	3. Effect of the discrepancy? Yes ☒ No ☐ N/A ☐			
	4. Corrective actions taken? Yes ☒ No ☐ N/A ☐			
	5. Preventative measures taken (where applicable) to minimize its reoccurrence? Yes ☒ No ☐ N/A ☐			
	6. Is documentation of all corrective actions maintained in accordance with Standard 3.2? Yes ☒ No ☐ N/A ☐			
14.2	Prior to implementation do all corrective actions have the documented approval of the technical leader?	☒	☐	☐

Discussion

This standard addresses only those corrective actions resulting from DNA casework or DNA proficiency tests. The elements listed may be assessed through a review of existing laboratory documentation.

To successfully satisfy Standard 14.1.b, the laboratory must demonstrate compliance with all of the subcategories of Standard 14.1.b.

Comment

Standard 15. Audits

		Yes	No	N/A
15.1	Has the laboratory been audited annually in accordance with the FBI DNA Quality Assurance Standards?	☒	☐	☐
	For this audit, has the laboratory maintained documentation that the auditor(s):	☒	☐	☐
	a. Is qualified? Yes ☒ No ☐			
	b. Is a current or previously qualified analyst in the laboratory's current DNA technologies and platform? Yes ☒ No ☐			
15.2	Has an external audit been conducted at least once every two years by a second agency?	☒	☐	☐
	For this audit, has the laboratory maintained documentation that the auditor(s):	☒	☐	☐
	a. Is qualified? Yes ☒ No ☐			
	b. Is a current or previously qualified analyst in the laboratory's current DNA technologies and platform? Yes ☒ No ☐			
15.2.1	Has the laboratory maintained audit documentation of those individuals (i.e., casework CODIS administrator, technical leader, and analysts) that have had their education, experience, and training qualifications evaluated and approved during two external audits?	☒	☐	☐
15.2.2	Has the laboratory maintained the documentation for those validations previously evaluated and approved during one external audit?	☒	☐	☐
15.3	For internal audits, has the laboratory maintained documentation that the auditor(s):	☒	☐	☐
	a. Is qualified? Yes ☒ No ☐			
	b. Is a current or previously qualified analyst in the laboratory's current DNA technologies and platform? Yes ☒ No ☐			
15.4	Have the internal and/or external audits performed pursuant to Standard 15.1 been conducted using the FBI DNA Quality Assurance Standards Audit Document in effect at that time?	☒	☐	☐

15.5	Have internal and external DNA audit documents and, if applicable, corrective action(s) been submitted to the technical leader for review to ensure that findings, if any, were appropriately addressed?	☒	☐	☐
15.5.1	For NDIS-participating laboratories, did the laboratory provide all external audit documentation and laboratory responses to the FBI within 30 days of the laboratory's receipt of the audit documents or report?	☐	☐	☒
15.6	Are previous internal and external audit documents retained and available for auditor inspection?	☒	☐	☐

Discussion

Audit *is an inspection used to evaluate, confirm, or verify activity related to quality.*

In accordance with Standard 15.1, the required annual audit shall, at a minimum, occur once every calendar year and shall be at least 6 months but no more than 18 months apart. Annual audits may be conducted in an internal and/or external manner and, at the discretion of the laboratory, may consist exclusively of external audits and be performed on more than an annual basis.

Standard 15.2 requires that an external audit be performed at least once every two years and Standard 15.5.1 requires that **all** external audits performed on an NDIS laboratory, regardless of frequency, shall be submitted to the NDIS Custodian.

Only audits that were performed using the most current (as of the time of the respective audit) FBI Quality Assurance Standards Audit Document shall be eligible for compliance with Standards 15.1 and 15.4.

Audit teams may consist of one or more individuals.

Standards 15.1, 15.2 and 15.3 are a self-verification by the auditor(s) to ensure that the auditor, or the auditing team, consists of appropriately qualified individuals. This certification should be obtained and documented prior to the beginning of the audit and maintained by the laboratory. Regardless of the audit (internal or external), it is the laboratory's responsibility to ensure that there is at least one person that is, or has previously been, a qualified analyst for each specific DNA technology (***technology*** *is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA*) performed and that there is at least one person who is a qualified auditor on the audit team. This may be accomplished by having a single auditor who meets all of the specified qualifications or through a combination of the various members of a multiperson audit team. **These requirements are applicable to audits performed on or after July 1, 2009.**

Technical leaders and analysts who were appointed or hired prior to July 1, 2009, will be assessed according to the educational requirements of the FBI Quality

Assurance Audit Document dated July 1, 2004. Technical leaders, casework CODIS administrators, and analysts appointed or hired on or after July 1, 2009, will be assessed according to the educational requirements of the FBI Quality Assurance Audit Document dated July 1, 2009.

In accordance with Standards 15.2.1 and 15.2.2, when documentation of the required reviews has been memorialized in previous external audit documents, the auditor(s) is not required to perform additional review with respect to the personnel or validations that were previously reviewed and documented except for training in new methodologies and/or technologies by previously qualified personnel. However, this in no way prohibits the auditor from performing such additional reviews as that auditor(s) may deem appropriate or necessary.

The two independent external auditor approvals of personnel referenced in Standard 15.2.1 are not transferable and are only valid within the laboratory or laboratory system for which those personnel are employed at the time of the approvals.

Standard 15.2.2 is only applicable to those methodologies that are currently used by the laboratory. ***Methodology*** *is used to describe the analytical processes and procedures used to support a DNA-typing technology: for example, extraction methods (manual vs. automated), quantification methods (slot blot, fluorometry, real-time); typing test kit; and platform (capillary electrophoresis, real-time gel and end-point gel systems).*

The written report should be prepared by the auditor(s) and sent to the laboratory within 30 days of the audit. The audit document report consists of the completed audit document checklist, with any areas of noncompliance listed under the Findings section of Appendix A. All findings must be clearly identified and referenced to the appropriate Standard. **Recommendations must not be included in the Audit Document Report.**

The laboratory must ensure that within the Response section of Appendix A, an adequate response detailing any incorporated corrective action, if appropriate, has been generated with regard to all findings. A laboratory's written course of action or response to the findings in an audit document report also should be maintained as part of the Audit Document Report.

Prior audit document reports must be available to the auditor(s) as a measure of the laboratory's response to previous findings. It is critical that findings identified in a previous audit document report be thoroughly addressed and resolved (if possible) within the DNA laboratory's capabilities.

To fulfill the requirements associated with Standard 15.5, the laboratory must show evidence of a response and/or corrective action to all findings detailed during the previous audit.

To comply with Standard 15.5.1, it is incumbent on the NDIS laboratory to document for each external audit, the date that the external audit document report was received from the auditor(s) and the date that the laboratory sent the external audit documentation and laboratory responses to the FBI. The laboratory response may include a notification to the NDIS Custodian if the laboratory needed to request an extension of time for sending the required audit documentation. For non-NDIS laboratories, the response to Standard 15.5.1 shall be marked "N/A."

Comment
Standard 15.5.1 is marked N/A because the laboratory is not an NDIS participant.

Standard 16. Safety

		Yes	No	N/A
16.1	Does the laboratory have and follow a documented environmental health and safety program that includes, at a minimum, the following:	☒	☐	☐
	16.1.1 A bloodborne pathogen and chemical hygiene plan?	☒	☐	☐
	16.1.2 Documented training on the bloodborne pathogen and chemical hygiene plan?	☒	☐	☐
16.2	Has the laboratory's environmental health and safety program been reviewed annually?	☒	☐	☐
	a. Has such review been documented?	☒	☐	☐

Discussion

To fulfill the requirements for Standard 16.1, the laboratory must demonstrate compliance with each of the subcategories of Standard 16.1.

All information addressing environmental health and safety must be current and available to laboratory staff. This information must be updated to reflect changes in a technical procedure (e.g., radioisotopes) or the remodeling of laboratory space (e.g., changed evacuation plans) that may have an effect on the laboratory's environmental health and safety program.

To fulfill the requirements for Standard 16.2, the laboratory must demonstrate that the review ensures that all environmental health and safety practices are appropriate and contemporary.

Comment

STANDARD 17. Outsourcing

		Yes	No	N/A
17.1	Has the vendor laboratory complied with the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories and the accreditation requirements of federal law?	☐	☐	☒
17.1.1	Has the NDIS laboratory that outsources DNA sample(s) for entry into or searching in CODIS required and maintained the following documentation from the vendor laboratory: a. Compliance with the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories? Yes ☐ No ☐ b. Compliance with the accreditation requirements of federal law? Yes ☐ No ☐	☐	☐	☒
17.2	Except as provided in Standard 17.2.1, since the laboratory's last external audit, did the NDIS laboratory's technical leader document and maintain the approval of the technical specifications of the outsourcing agreement before it was awarded?	☐	☐	☒
17.2.1	For a vendor laboratory that is performing forensic DNA analysis for a law enforcement agency or entity other than the NDIS laboratory, was documented approval obtained by the vendor laboratory from the technical leader of the NDIS laboratory, accepting ownership of the DNA data generated, prior to the initiation of analysis?	☐	☐	☒
17.3	Did the NDIS laboratory accept profiles generated by a vendor laboratory for upload to CODIS?	☐	☐	☒
	a. Prior to the NDIS laboratory's uploading or accepting data to upload to CODIS from any vendor laboratory or agency, did the technical leader of the NDIS laboratory document the prior approval of the technical specifications of the outsourcing agreement and/or document the approval of acceptance of ownership of the DNA data?	☐	☐	☒
17.4	Does the NDIS laboratory have and follow a procedure to verify the integrity of the data received from a vendor laboratory through the performance of a technical review?	☐	☐	☒

17.5	Prior to the search of DNA data in SDIS, did an analyst, casework CODIS administrator, or technical reviewer employed by an NDIS participating laboratory review the DNA data to verify specimen eligibility and the correct specimen category for entry into CODIS?	☐	☐	☒
17.6	Prior to the upload of the data generated by the vendor laboratory to SDIS or the reporting of search results, did an NDIS laboratory perform a technical review of the vendor laboratory's data?	☐	☐	☒
	a. Was the technical review performed by an NDIS laboratory analyst or technical reviewer who is qualified, or was previously qualified, in the technology, platform, and typing amplification test kit used to generate the data and who participates in an NDIS laboratory's proficiency-test program?	☐	☐	☒
17.6.1	Do the technical review procedures include, at a minimum, the following elements:	☐	☐	☒
	17.6.1.1 A review of all DNA types to verify that they are supported by the raw and/or analyzed data?	☐	☐	☒
	17.6.1.2 A review of all associated controls, internal lane standards and allelic ladders to verify that the expected results were obtained?	☐	☐	☒
	17.6.1.3 A review of the final report (if provided) to verify:	☐	☐	☒
	a. That the results/conclusions are supported by the data? Yes ☐ No ☐			
	b. That each tested item (or its probative fraction) submitted to the vendor laboratory is addressed? Yes ☐ No ☐			
	17.6.1.4 Verification of the DNA types, eligibility, and the correct specimen category for entry into CODIS?	☐	☐	☒
17.7	For an onsite visit:	☐	☐	☒
	a. Does the NDIS laboratory have and follow a procedure for performing an on-site visit?	☐	☐	☒
	b. Does the procedure include, at a minimum, the following elements?	☐	☐	☒
17.7.1	A documented on-site visit prior to the initiation of analysis?	☐	☐	☒

17.7.1.1 a. Has the on-site visit been performed by the technical leader or designated employee of an NDIS laboratory that uses the same technology, platform, and typing amplification test kit; or b. Has an on-site visit performed by a designated FBI employee been accepted by the technical leader?		☐	☐	☒
17.7.2	If the NDIS laboratory's outsourcing agreement extended beyond one year, was an annual on-site visit conducted?	☐	☐	☒
17.7.2.1	If an on-site visit conducted by the FBI, or another NDIS laboratory was used by the NDIS laboratory, did the technical leader document the review and acceptance of that on-site visit?	☐	☐	☒

Discussion
Non NDIS-participating laboratories shall demonstrate compliance with Standard 17 if any of the criteria of ownership are, or may become applicable.
Except as provided below, failure to comply with Standard 17 by an NDIS-participating laboratory or non NDIS-participating laboratory will permanently preclude the entry, searching or uploading of the outsourced DNA data into CODIS.

Outsourcing *is the utilization of a vendor laboratory to provide DNA services in which the NDIS-participating laboratory takes or retains ownership of the DNA data for entry into CODIS, when applicable. Outsourcing does not require the existence of a contractual agreement or the exchange of funds.*

Ownership *occurs when any of the following criteria are applicable:*

1. The originating laboratory will use any samples, extracts, or materials from the vendor laboratory for the purposes of forensic testing (i.e., a vendor laboratory prepares an extract that will be analyzed by the originating laboratory);

2. The originating laboratory will interpret the data generated by the vendor laboratory;

3. The originating laboratory will issue a report on the results of the analysis; or

4. The originating laboratory will enter or search a DNA profile in CODIS from data generated by the vendor laboratory.

The ***Standard 17 review*** *is the technical review required by Standards 17.4 and 17.6 for DNA data that has been outsourced. This Standard 17 review is to be distinguished from the administrative and technical reviews required by Standard 12. For outsourced*

DNA data, the vendor laboratory is responsible for conducting the administrative and technical reviews required by Standard 12.

*A **vendor laboratory** is a governmental or private laboratory that provides DNA analysis services to another laboratory or agency and does not take ownership of the DNA data for purposes of entry into CODIS.*

Compliance with Standard 17 is required when the laboratory outsources any DNA-related services for which the laboratory will take or retain ownership or when the laboratory will take or retain ownership of data from any other law enforcement agency or entity.

Compliance with Standard 17.1.1 through 17.6.2.1 is not required when the laboratory outsources a specific DNA analysis using a technology that the laboratory is not qualified to perform or when the laboratory will not take or retain ownership of the data. If these are the only circumstances whereby a laboratory outsources DNA analyses, then those criteria of Standard 17 shall be marked "N/A."

Compliance with Standard 17 is required of a vendor laboratory whenever the vendor laboratory performs DNA analysis pursuant to any request from a laboratory, law enforcement agency, or any other entity and it may be reasonably anticipated that ownership of the results of such an analysis may subsequently be taken or retained at some time by a laboratory.

For vendor laboratories, Standards 17.1.1, 17.2, 17.3, 17.4, 17.5, 17.6 and its subcategories, and 17.7 and its subcategories shall be marked "N/A."

To comply with Standard 17.1, a vendor laboratory must comply with the most current FBI Quality Assurance Standards for Forensic DNA Testing Laboratories in their entirety, as applicable, and the accreditation requirements of federal law.

Laboratories that have entered into an outsourcing agreement or that have accepted data from a vendor laboratory shall maintain documentation of the vendor laboratory's external audit document report, the vendor laboratory's responses, and/or follow-up actions to any findings detailed in the report.

To minimize the redundancy of multiple external audits of the same vendor laboratory over the course of a year, the laboratory may elect to accept for that year audit documentation generated from another external audit conducted (pursuant to the requirements of Standard 15) on the vendor laboratory. The audit documentation must include the audit document report, the vendor laboratory's responses, and/or follow-up actions to any findings detailed in the report. Such documentation or copies must be retained by the laboratory.

For outsourcing agreements that involve a contractual relationship awarded prior to July 1, 2009, FBI Quality Assurance Standards Audit Document Standards 17.2, 17.2.1,

17.7.1, and 17.7.1.1 should, until the end of the contracted period (to include any contractually authorized extensions), be marked as follows:

> A contractual agreement awarded prior to July 1, 2009, and in effect at the time of the audit, where the laboratory has not met the minimum Standards shall be marked as "N/A." Standards marked N/A should include an explanatory comment to the effect that (for example), "The contractual outsourcing agreement with [name of vendor laboratory]_____ was in effect prior to July 1, 2009, and has an expiration date of _____."
>
> A contractual agreement awarded prior to July 1, 2009, and in effect at the time of the audit, where the laboratory has met the minimum Standards shall be marked "Yes."

Standard 17.2 applies to those laboratories that have entered into a contractual agreement with a vendor laboratory since their last external audit.

For Standard 17.2.1, documentation will need to be retained demonstrating the date on which the laboratory provided approval to the vendor laboratory for the technical specifications to be used prior to the vendor laboratory's initiating analysis. If the laboratory has accepted data from a vendor laboratory, without the prior approval being given to that vendor laboratory, a "No" shall be marked for Standard 17.2.1. Approval could be in the form of an e-mail, documented phone call, etc. This Standard also applies to data generated by a vendor laboratory when there is no existing outsourcing agreement, which includes contractual agreements, between the vendor and the laboratory accepting the data. If the NDIS laboratory has not received or approved the initiation of data analysis by a vendor laboratory intended for upload into CODIS, this Standard shall be marked "N/A."

To comply with Standard 17.2.1, when a vendor laboratory is performing forensic DNA analysis for a law enforcement agency or entity other than the NDIS laboratory, it is incumbent on the vendor laboratory to maintain the dated, documented approval obtained from the technical leader of the NDIS laboratory that has agreed to accept ownership of the DNA data, as well as the date that the vendor laboratory first initiated analysis for a specific case or set of cases. This Standard is assessed through the examination of the documents specified above. If the vendor laboratory has not performed work on any samples intended for upload into CODIS that would require the prior approval by an NDIS laboratory, this Standard shall be marked "N/A."

To comply with Standard 17.3, it is incumbent on the NDIS laboratory to maintain the dated, documented prior approval of the technical specifications of the outsourcing agreement (reference Standard 17.2) and/or documented prior approval of the acceptance of ownership of the DNA data (reference Standard 17.2.1) by the NDIS laboratory's technical leader as well as the date that the NDIS laboratory first uploaded DNA data, or first accepted DNA data for upload to CODIS. Standard 17.3 is not

applicable to requests for the searching of DNA data for investigative purposes between NDIS laboratories that do not involve outsourcing agreements.

For outsourcing agreements that involve a contractual relationship awarded prior to July 1, 2009, FBI Quality Assurance Standards Audit Document criteria 17.3a shall be marked "N/A", if the laboratory has not met the criteria. Standards marked "N/A" should include an explanatory comment to the effect that (for example), "The contractual outsourcing agreement with [name of vendor laboratory]_____ was in effect prior to July 1, 2009, and has an expiration date of _____." If the NDIS laboratory accepted data from a vendor laboratory or agency and such data was accepted for upload into CODIS without the prior approval by the technical leader of the technical specifications of the outsourcing agreement between the NDIS laboratory and the vendor or agency, criteria 17.3a shall be marked "No."

All reviews associated with Standards 17.4 and 17.6 must be sufficient to thoroughly assess the integrity of the vendor laboratory's data.

Analyst *(or equivalent role, position, or title as designated by the Laboratory Director) is an employee or contract employee, that has successfully completed the laboratory's training requirements for casework sample analysis, passed a competency test, and has entered into a proficiency testing program according to these Standards. This individual conducts and/or directs the analysis of forensic samples, interprets data, and reaches conclusions. An employee or contract employee may be employed by an NDIS laboratory.*

Platform *is the type of analytical system utilized to generate DNA profiles, such as capillary electrophoresis, real-time gel, and end-point gel instruments or systems.*

Technical reviewer *is an employee or contract employee who is a current or previously qualified analyst in the methodology being reviewed that performs a technical review of, and is not an author of, the applicable report or its contents. An employee or contract employee may be employed by an NDIS laboratory.*

Technology *is used to describe the type of forensic DNA analysis performed in the laboratory, such as RFLP, STR, YSTR, or mitochondrial DNA.*

Test kit *is a preassembled set of reagents that allows the user to conduct a specific DNA extraction, quantification, or amplification.*

In the event that an NDIS laboratory chooses to search outsourced DNA data in SDIS prior to its completion of the Standard 17 review, Standard 17.5 requires that an analyst, CODIS administrator, or technical reviewer of the NDIS laboratory must verify CODIS eligibility and the correct specimen category for such DNA data. The outsourced DNA data will have been technically reviewed by the vendor laboratory in accordance with Standard 12. Thus, in order to search this outsourced DNA data in SDIS prior to the NDIS laboratory's completion of the Standard 17 review (Standard 17.6), the NDIS

laboratory must, at a minimum, verify the correct specimen category and CODIS eligibility before searching that DNA data in SDIS.

To comply with Standard 17.6, the review of a vendor laboratory's data shall be performed by an analyst or technical reviewer employed by an NDIS laboratory (includes employee and contract employee) who is qualified or previously qualified in the technology, platform, and typing amplification test kit used to generate the data. This technical reviewer must participate in an NDIS laboratory's external proficiency-testing program to the full extent in which he or she participates in casework and the review of the outsourced data. For example, an analyst or technical reviewer participates and is proficiency-tested on casework using one type of amplification test kit and performs the technical review of outsourced casework which was analyzed using a different technology, platform and/or amplification test kit. Such analyst or technical reviewer must also be proficiency-tested on the technology, platform and/or amplification test kit used by the outsourcing laboratory to the extent he/she participates in or performs the technical review of the outsourced casework. The NDIS laboratory must also maintain the proficiency test records and qualifications of any technical reviewer(s) that participate in the review associated with Standard 17.6.

To satisfy the requirements of Standards 17.6.1 and 17.7, the laboratory must demonstrate compliance (as applicable) with each of the respective subcategories.

Standard 17.6.1.3 shall be marked "N/A" if the laboratory does not receive a final report from the vendor laboratory in accordance with their outsourcing agreement.

On-site visit *is a scheduled or unscheduled visit to the vendor laboratory work site by one or more representatives from an NDIS participating laboratory who is(are) a qualified or previously qualified DNA analyst(s) in the technology, platform and typing amplification test kit used to generate the DNA data, or designated FBI employee(s), to assess and document the vendor laboratory's ability to perform analysis on outsourced casework.*

To comply with Standard 17.7.1, an on-site visit must be performed prior to the vendor laboratory's initiating work on casework, whether performed as a part of a contractual agreement or as a part of an agreement to accept data outside of an existing contractual agreement, regardless of the number of samples or cases being accepted. The laboratory shall retain documentation demonstrating the date the on-site visit was performed, a summary of the visit, and the documentation of the personnel who performed the on-site visit. While an on-site visit is not required if an individual is only providing technical review services for the NDIS laboratory, the NDIS laboratory's technical leader shall evaluate how and where such services are being performed and document their approval to ensure compliance with these Standards. For example, if the technical reviewer will not be performing the technical review services at the NDIS laboratory, the technical leader will want to know where the services will be performed and the security precautions in place to safeguard the confidentiality of the information being reviewed. The technical leader will want to ensure that only authorized persons

have access to the information being reviewed if such information is taken outside the controlled NDIS laboratory environment.

Standard 17.7.2 is applicable when an outsourcing agreement has been extended (e.g., extensions, renewals or re-award) and the technical specifications (e.g., technology, platform and typing amplification test kit) used to generate the DNA data have not changed. If an outsourcing agreement was in force with the specific vendor laboratory in an essentially consistent, continuous manner (with a delay not to exceed six months), it is not required that an additional, initial on-site visit be performed, as required for new outsourcing agreements in Standards 17.7.1. and 17.7.1.1.

It is noted that an on-site visit is different from an external audit and does not necessarily require that an external audit (***audit*** *is an inspection used to evaluate, confirm, or verify activity related to quality*) be performed during an on-site visit.

In addition to the technical leader (or designee) performing an on-site visit, the laboratory may elect to accept information/documentation generated from an on-site visit conducted of the vendor laboratory by an NDIS laboratory using the same technology, platform, and typing amplification test kit as long as it was conducted within the past twelve months. Alternatively, the technical leader of the NDIS participating laboratory may accept an on-site visit conducted by a designated FBI employee.

To comply with Standard 17.7.2.1, a laboratory accepting an on-site visit from an NDIS laboratory or the FBI shall have documentation demonstrating its review and approval of the on-site visit, the date the on-site visit was performed, a summary of the visit, and the documentation of the personnel who performed the on-site visit.

Comment
Standard 17 and its subcategories are marked N/A because the laboratory does not outsource.

Appendix A: Findings and Responses

To be completed by the audit team (Findings) and laboratory (Responses).

Auditors shall reference any Standard found to be in non-compliance in the Findings below. Following the Standard, a detailed description of the non-compliance shall be provided.

Comments and/or recommendations shall **not** be included in Appendix A.

Additional pages may be attached, as needed.

Findings:

10.2.1 At a minimum, are the following critical instruments or equipment performance-checked at least annually:

10.2.1.3 Thermal cycler temperature-verification system?

10.2.1.4 Thermal cycler, including quantitative-PCR?

Objective Proof for the Finding:

The thermal cycler temperature verification system (SN: 509021) was not performance checked by an outside vendor in 2017. The Laboratory sent the thermal cycler verification system to an outside vendor in January 2018. The Calibration Report from the outside vendor dated January 16, 2018 stated that the thermal cycler temperature verification system was outside of the manufacturer's specification by +/- 0.12° C at the higher range. The outside vendor notified the Laboratory that they do not repair thermal cycler verification systems as requested by the Laboratory. The Laboratory asked the outside vendor to return the thermal cycler verification system "as is."

The performance check for thermal cycler (SN: 8056112787) was due on January 25, 2018. The Laboratory used the thermal cycler verification system (SN: 509021) returned "as is" by the outside vendor on January 25, 2018 to do the performance check.

Responses:

APPENDIX B – Notification Form for Technical Leader Contingency Plan

To be completed by the laboratory only in the event of a vacancy in the technical leader position when there is no qualified individual available to serve as the technical leader.

This form shall be used to document various actions relating to a vacancy in the technical leader position in the event that the laboratory does not have an individual qualified to serve as technical leader of the laboratory. Under those circumstances, in accordance with the FBI Quality Assurance Standards, the FBI's NDIS Custodian shall be notified of such vacancy and provided with the laboratory's contingency plan within 14 days of the vacancy.

Date technical leader position vacated	Date FBI contacted	Name of FBI personnel contacted	Date contingency plan submitted to the FBI (must be within 14 days of the vacancy)	Date FBI approval received

Contingency plan attached:

FBI conditions for approval attached, if applicable:

Date new casework started:

Laboratory: _____

Signed by: _____
(Name and Signature of Person Completing Form)

Date: _____

Appendix C – Auditor Self-Certification for QAS Audits

Section 1 – to be completed by the laboratory being audited (use additional blank sheets if necessary):

Laboratory being audited: Forensic Analytical Sciences, Inc. As of [date] 11-10-17

Technologies currently in use: STR, YSTR

Platforms currently in use: CE

Validations needing to be memorialized: 3500CE, ID/3500, Yfiler/3500, 24plex, GMID-X

Outsourcing agreements in place or in process: N/A

The laboratory being audited may request documentation for the information reported in Section 2 below.

Section 2 – to be completed by the auditor who will sign the attestation statement below the questions and (a) for external audits, return to the laboratory prior to the scheduled audit date; or (b) for internal audits, maintain in the laboratory's files.

Auditor Qualifications:

Name of Auditor: A. Robyn Quinn

Auditor's Employer: State of Delaware - Division of Forensic Science

Auditor's Title or Position: Laboratory Manager II

Qualified Auditor[2]: Yes ☒ No ☐ (Check One)

Year Completed FBI DNA Auditor Class: 2004 and 2008 Refresher

Current or Previously Qualified DNA Analyst: Yes ☒ No ☐ (Check One)

Current or Previously Qualified in Casework, Database Analysis, or Both[3]:

Casework ☐ Database ☐ Both ☒ (Check One)

Technologies Currently or Previously Qualified In (e.g., STR, mtDNA) (Please List):
STR

Platforms Currently or Previously Qualified In (e.g., Gel based/CE) (Please List):
CE

I verify that:
I understand the requirements of Standard 15.2[4] ; and
I have no conflicts of interest with the laboratory being audited; and
The information contained in Section 2 above is correct.

[2] A Qualified Auditor is a current or previously qualified DNA analyst who has successfully completed the FBI DNA Auditor training course.

[3] If the laboratory being audited performs both casework and database analyses, then the audit team or auditor must be qualified in both casework and database analyses.

[4] Standard 15.2 requires that "at least once every two years, an external audit shall be conducted by an audit team comprised of qualified auditors from a second agency(ies) and having at least one team member who is or has been previously qualified in the laboratory's current DNA technologies and platform."

Effective September 1, 2011

Signed By  **Date** 11/30/17

Effective September 1, 2011

Appendix C – Auditor Self-Certification for QAS Audits

Section 1 – to be completed by the laboratory being audited (use additional blank sheets if necessary)

Laboratory being audited: Forensic Analytical Sciences, Inc. As of [date] 11-10-17

Technologies currently in use: STR, YSTR

Platforms currently in use: CE

Validations needing to be memorialized: 3500CE, ID/3500, Yfiler/3500, 24plex, GMID-X

Outsourcing agreements in place or in process: N/A

The laboratory being audited may request documentation for the information reported in Section 2 below.

Section 2 – to be completed by the auditor who will sign the attestation statement below the questions and (a) for external audits, return to the laboratory prior to the scheduled audit date; or (b) for internal audits, maintain in the laboratory's files.

Auditor Qualifications:

Name of Auditor: Alexandria Bradley

Auditor's Employer: Mississippi Forensics Laboratory

Auditor's Title or Position: DNA Technical Leader

Qualified Auditor[2]: Yes ☒ No ☐ (Check One)

Year Completed FBI DNA Auditor Class: 2010

Current or Previously Qualified DNA Analyst: Yes ☒ No ☐ (Check One)

Current or Previously Qualified in Casework, Database Analysis, or Both[3]:

Casework ☐ Database ☐ Both ☒ (Check One)

Technologies Currently or Previously Qualified In (e.g., STR, mtDNA) (Please List):
STR, YSTR

Platforms Currently or Previously Qualified In (e.g., Gel based/CE) (Please List):
CE

I verify that:
I understand the requirements of Standard 15.2[4] ; and
I have no conflicts of interest with the laboratory being audited; and
The information contained in Section 2 above is correct.

[2] A Qualified Auditor is a current or previously qualified DNA analyst who has successfully completed the FBI DNA Auditor training course.

[3] If the laboratory being audited performs both casework and database analyses, then the audit team or auditor must be qualified in both casework and database analyses.

[4] Standard 15.2 requires that "at least once every two years, an external audit shall be conducted by an audit team comprised of qualified auditors from a second agency(ies) and having at least one team member who is or has been previously qualified in the laboratory's current DNA technologies and platform."

Effective September 1, 2011

Signed By Alexander Bradley Date 12.1.17

Effective September 1, 2011

Appendix D – Personnel Meeting Minimum Education, Experience, and Training Qualifications As Assessed By External Audit

To be completed by the audit team.

In accordance with Standards 15.1 and 15.2.1, this form shall be used to document the evaluation and approval of analysts, casework CODIS administrators and technical leaders during an external audit. Section 1 is for documenting personnel who have received two successive separate external audit approvals of their education, experience, and training qualifications. Section 1 should be used to document all individuals who have received two successive separate audit approvals of their education, experience, and training qualifications, regardless of whether the individual is still employed by the laboratory. The date of the prior audit approvals should be noted in this Section, when known.

Section 2 is for documenting personnel who are receiving the **first** external audit approval of their education, experience, and training qualifications.

Section 1 documents those personnel who have received two successive external audit approvals of their education, experience, and training qualifications.

Section 1. (a) – Approvals Between July 1, 2004 and June 30, 2009
Laboratory personnel who have been evaluated after July 1, 2004, and approved under two successive, separate external audits as meeting the education, experience, and training qualifications required under Standard 5.1 of the 1998 Quality Assurance Standards for Forensic DNA Testing Laboratories[2]:

Analyst(s):

Technical Leader(s):

Section 1. (b) – Approvals After July 1, 2009
Laboratory personnel who have been evaluated after July 1, 2009, and approved under two successive, separate external audits as meeting the education, experience, and training qualifications required under Standard 5.1 of the 2009 Quality Assurance Standards for Forensic DNA Testing Laboratories:

[2] Laboratory personnel qualified by the technical leader on or before June 30, 2009, and evaluated after July 1, 2009, should be listed in this section.

Analyst(s):
Dave Hansen (May 2013 and January 2014)
Alan Keel (May 2013 and January 2014)
Lilia Patino (February 2016 and January 2018)

Casework CODIS administrator(s):

Technical Leader(s):
Alan Keel (May 2013 and January 2014)

Section 2 documents those personnel who are receiving the first external audit approval of their education, experience, and training qualifications.

Section 2. (a) – For Personnel Appointed or Hired Prior to July 1, 2009
Laboratory personnel who were appointed or hired prior to July 1, 2009, and approved for the first time as meeting the education, experience, and training qualifications required under Standard 5.1 of the 1998 Quality Assurance Standards for Forensic DNA Testing Laboratories:

Analyst(s):

Technical Leader(s):

Section 2. (b) – For Personnel Appointed or Hired On or After July 1, 2009
Laboratory personnel who have been evaluated after July 1, 2009, and approved for the first time as meeting the education, experience, and training qualifications required under Standard 5.1 of the 2009 Quality Assurance Standards for Forensic DNA Testing Laboratories:

Analyst(s):
Nancy Dinh (January 2018)

Casework CODIS administrator(s):

Technical Leader(s):

Appendix E – Approved Validations

This form may be used to document the evaluation and approval of validations by the external audit team according to Standard 8; this documentation to be maintained by the audited laboratory to comply with Standard 15.2.2.

To be completed by the audit team:

List of validations, if any, evaluated and approved during this audit:

Qiagen® Investigator® 24plex QS Amplification Kit
Reviewed and approved by TL: April 28, 2017

> The above listed validation included the following studies: sensitivity, repeatability, reproducibility, mixtures, contamination, and known and non-probative samples.

Applied Biosystems® 3500 Genetic Analyzer (SN: 28154-050) using the AmpFISTR® Identifiler® PCR Amplification Kit
Reviewed and approved by TL: October 10, 2016

> The above listed validation included the following studies: sensitivity, repeatability, reproducibility, mixtures, contamination, and known and non-probative samples.

Applied Biosystems® 3500 Genetic Analyzer (SN: 28154-050) using the AmpFISTR® Yfiler® PCR Amplification Kit
Reviewed and approved by TL: October 11, 2016

> The above listed validation included the following studies: sensitivity, repeatability, reproducibility, mixtures, contamination, and known and non-probative samples.

GeneMapper® ID-X Ver. 1.5 Software for Casework
Reviewed and approved by TL: October 11, 2016

> The above listed validation included the following studies: concordance, traceability to a NIST standard.

APPENDIX A

PENAL CODE - PEN

PART 2. OF CRIMINAL PROCEDURE [681 - 1620] *(Part 2 enacted 1872.)*

TITLE 10. MISCELLANEOUS PROCEEDINGS [1268 - 1424.5] *(Title 10 enacted 1872.)*

CHAPTER 11. Errors and Mistakes in Pleadings and Other Proceedings [1404 - 1405.1] *(Chapter 11 enacted 1872.)*

1405. (a) A person who was convicted of a felony and is currently serving a term of imprisonment may make a written motion, pursuant to subdivision (d), before the trial court that entered the judgment of conviction in his or her case, for performance of forensic deoxyribonucleic acid (DNA) testing.

(b) (1) An indigent convicted person may request appointment of counsel in order to prepare a motion pursuant to subdivision (d) by sending a written request to the court. The request shall include the person's statement that he or she was not the perpetrator of the crime and shall explain how the DNA testing is relevant to his or her assertion of innocence. The request also shall include the person's statement as to whether he or she previously has had counsel appointed under this section.

(2) If any of the information required in paragraph (1) is missing from the request, the court shall return the request to the convicted person and advise him or her that the matter cannot be considered without the missing information.

(3) (A) Upon a finding that the person is indigent, he or she has included the information required in paragraph (1), and counsel has not previously been appointed pursuant to this subdivision, the court shall appoint counsel to investigate and, if appropriate, to file a motion for DNA testing under this section and to represent the person solely for the purpose of obtaining DNA testing under this section.

(B) Upon a finding that the person is indigent, and counsel previously has been appointed pursuant to this subdivision, the court may, in its discretion, appoint counsel to investigate and, if appropriate, to file a motion for DNA testing under this section and to represent the person solely for the purpose of obtaining DNA testing under this section.

(4) This section does not provide for a right to the appointment of counsel in a postconviction collateral proceeding, or to set a precedent for any such right, in any context other than the representation being provided an indigent convicted person for the limited purpose of filing and litigating a motion for DNA testing pursuant to this section.

(c) Upon request of the convicted person or convicted person's counsel, the court may order the prosecutor to make all reasonable efforts to obtain, and police agencies and law enforcement laboratories to make all reasonable efforts to provide, the following documents that are in their possession or control, if the documents exist:

(1) Copies of DNA lab reports, with underlying notes, prepared in connection with the laboratory testing of biological evidence from the case, including presumptive tests for the presence of biological material, serological tests, and analyses of trace evidence.

(2) Copies of evidence logs, chain of custody logs and reports, including, but not limited to, documentation of

current location of biological evidence, and evidence destruction logs and reports.

(3) If the evidence has been lost or destroyed, a custodian of record shall submit a report to the prosecutor and the convicted person or convicted person's counsel that sets forth the efforts that were made in an attempt to locate the evidence. If the last known or documented location of the evidence prior to its loss or destruction was in an area controlled by a law enforcement agency, the report shall include the results of a physical search of this area. If there is a record of confirmation of destruction of the evidence, the report shall include a copy of the record of confirmation of destruction in lieu of the results of a physical search of the area.

(d) (1) The motion for DNA testing shall be verified by the convicted person under penalty of perjury and shall include all of the following:

(A) A statement that he or she is innocent and not the perpetrator of the crime.

(B) Explain why the identity of the perpetrator was, or should have been, a significant issue in the case.

(C) Make every reasonable attempt to identify both the evidence that should be tested and the specific type of DNA testing sought.

(D) Explain, in light of all the evidence, how the requested DNA testing would raise a reasonable probability that the convicted person's verdict or sentence would be more favorable if the results of DNA testing had been available at the time of conviction.

(E) Reveal the results of any DNA or other biological testing that was conducted previously by either the prosecution or defense, if known.

(F) State whether any motion for testing under this section previously has been filed and the results of that motion, if known.

(2) Notice of the motion shall be served on the Attorney General, the district attorney in the county of conviction, and, if known, the governmental agency or laboratory holding the evidence sought to be tested. Responses, if any, shall be filed within 90 days of the date on which the Attorney General and the district attorney are served with the motion, unless a continuance is granted for good cause.

(e) If the court finds evidence was subjected to DNA or other forensic testing previously by either the prosecution or defense, it shall order the party at whose request the testing was conducted to provide all parties and the court with access to the laboratory reports, underlying data, and laboratory notes prepared in connection with the DNA or other biological evidence testing.

(f) If the court determines that the convicted person has met all of the requirements of subparagraphs (A) to (F), inclusive, of paragraph (1) of subdivision (d), the court may, as it deems necessary, order a hearing on the motion. The judge who conducted the trial, or accepted the convicted person's plea of guilty or nolo contendere, shall conduct the hearing unless the presiding judge determines that judge is unavailable. Upon request of either party, the court may order, in the interest of justice, that the convicted person be present at the hearing of the motion. Either party, upon request, may request an additional 60 days to brief issues raised in subdivision (g).

(g) The court shall grant the motion for DNA testing if it determines all of the following have been established:

(1) The evidence to be tested is available and in a condition that would permit the DNA testing requested in the motion.

(2) The evidence to be tested has been subject to a chain of custody sufficient to establish it has not been substituted, tampered with, replaced, or altered in any material aspect.

(3) The identity of the perpetrator of the crime was, or should have been, a significant issue in the case.

(4) The convicted person has made a prima facie showing that the evidence sought to be tested is material to the issue of the convicted person's identity as the perpetrator of, or accomplice to, the crime, special circumstance, or enhancement allegation that resulted in the conviction or sentence. The convicted person is only required to demonstrate that the DNA testing he or she seeks would be relevant to, rather than dispositive of, the issue of identity. The convicted person is not required to show a favorable result would conclusively establish his or her innocence.

(5) The requested DNA testing results would raise a reasonable probability that, in light of all the evidence, the convicted person's verdict or sentence would have been more favorable if the results of DNA testing had been available at the time of conviction. The court in its discretion may consider any evidence whether or not it was introduced at trial. In determining whether the convicted person is entitled to develop potentially exculpatory

evidence, the court shall not decide whether, assuming a DNA test result favorable to the convicted person, he or she is entitled to some form of ultimate relief.

(6) The evidence sought to be tested meets either of the following conditions:

(A) The evidence was not tested previously.

(B) The evidence was tested previously, but the requested DNA test would provide results that are reasonably more discriminating and probative of the identity of the perpetrator or accomplice or have a reasonable probability of contradicting prior test results.

(7) The testing requested employs a method generally accepted within the relevant scientific community.

(8) The motion is not made solely for the purpose of delay.

(h) (1) If the court grants the motion for DNA testing, the court order shall identify the specific evidence to be tested and the DNA technology to be used.

(2) The testing shall be conducted by a laboratory that meets the FBI Director's Quality Assurance Standards and that is mutually agreed upon by the district attorney in a noncapital case, or the Attorney General in a capital case, and the person filing the motion. If the parties cannot agree, the court shall designate a laboratory that meets the FBI Director's Quality Assurance Standards. Laboratories accredited by the following entities have been determined to satisfy this requirement: the American Association for Laboratory Accreditation (A2LA), the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), and Forensic Quality Services (ANSI-ASQ National Accreditation Board FQS).

(3) If the accredited laboratory selected by the parties or designated by the court to conduct DNA testing is not a National DNA Index System (NDIS) participating laboratory that takes or retains ownership of the DNA data for entry into the Combined DNA Index System (CODIS), the laboratory selected to perform DNA testing shall not initiate analysis for a specific case until documented approval has been obtained from an appropriate NDIS participating laboratory's technical leader of acceptance of ownership of the DNA data from the selected laboratory that may be entered into or searched in CODIS.

(i) In accordance with the court's order pursuant to subdivision (h), the laboratory may communicate with either party, upon request, during the testing process. The result of any testing ordered under this section shall be fully disclosed to the person filing the motion, the district attorney, and the Attorney General. If requested by any party, the court shall order production of the underlying laboratory data and notes.

(j) (1) The cost of DNA testing ordered under this section shall be borne by the state or the applicant, as the court may order in the interests of justice, if it is shown that the applicant is not indigent and possesses the ability to pay. However, the cost of any additional testing to be conducted by the district attorney or Attorney General shall not be borne by the convicted person.

(2) In order to pay the state's share of any testing costs, the laboratory designated in subdivision (h) shall present its bill for services to the superior court for approval and payment. It is the intent of the Legislature to appropriate funds for this purpose in the 2000–01 Budget Act.

(k) An order granting or denying a motion for DNA testing under this section shall not be appealable, and shall be subject to review only through petition for writ of mandate or prohibition filed by the person seeking DNA testing, the district attorney, or the Attorney General. The petition shall be filed within 20 days after the court's order granting or denying the motion for DNA testing. In a noncapital case, the petition for writ of mandate or prohibition shall be filed in the court of appeal. In a capital case, the petition shall be filed in the California Supreme Court. The court of appeal or California Supreme Court shall expedite its review of a petition for writ of mandate or prohibition filed under this subdivision.

(l) DNA testing ordered by the court pursuant to this section shall be done as soon as practicable. However, if the court finds that a miscarriage of justice will otherwise occur and that it is necessary in the interests of justice to give priority to the DNA testing, a DNA laboratory shall be required to give priority to the DNA testing ordered pursuant to this section over the laboratory's other pending casework.

(m) DNA profile information from biological samples taken from a convicted person pursuant to a motion for postconviction DNA testing is exempt from any law requiring disclosure of information to the public.

(n) Notwithstanding any other provision of law, the right to file a motion for postconviction DNA testing provided by this section is absolute and shall not be waived. This prohibition applies to, but is not limited to, a waiver that is given as part of an agreement resulting in a plea of guilty or nolo contendere.

(o) The provisions of this section are severable. If any provision of this section or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

(Amended by Stats. 2014, Ch. 554, Sec. 1. (SB 980) Effective January 1, 2015.)

PROOF OF SERVICE

The undersigned declares:

I am a citizen of the United States. My business address is 3330 Geary Blvd. 3rd Floor East, San Francisco, California 94118. I am over the age of eighteen years and not a party to the within action.

On the date set forth below, I caused a true copy of the within

NOTICE OF MOTION AND MOTION TO COMPEL DNA TESTING

to be served on the following parties in the following manner:

Mail ____ Overnight mail ____ Personal service ____ Fax __X__

Office of District Attorney
2220 Tulare Street, Suite 1000
Fresno, CA 93721
Fax: 559-600-4401

Mail __X__ Overnight mail ____ Personal service ____ Fax ____

Fresno County Sheriff's Office
P.O. Box 1788
Fresno, CA 93717

Mail ____ Overnight mail __X__ Personal service ____ Fax ____

California Attorney General's Office
2550 Mariposa Mall, Room 5090
Fresno, CA 93721-2271

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration is executed on April 30, 2017, at San Francisco, California.

Curtis L. Briggs

_____
CURTIS L. BRIGGS

EXHIBIT 2

SUPERIOR COURT OF CALIFORNIA, COUNTY OF FRESNO

CENTRAL DIVISION

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, v. DOUGLAS RAY STANKEWITZ, Defendant.	Case Nos. CF78227015/F079923 **ORDER DENYING MOTION FOR DNA TESTING WITHOUT PREJUDICE**

On May 1, 2019, through counsel Defendant Douglas Stankewitz sought to set the instant Motion to Compel DNA Testing, among others, for a hearing on June 14, 2019. Given that the June 14 date had not been cleared with the Court, Defendant's pleadings were lodged but not filed.

By an order dated June 13, 2019, the Court noted that Defendant's Motion to Compel DNA Testing does not require a hearing, and that responses, if any, were statutorily due within 90 days of the date of service. (Pen. Code, §§ 1405, subds. (d)(2),(f).) As the time for any response had not then expired, the Court found Defendant's request for a hearing premature.

The time for any response having now expired and the Court having read and considered Defendant's motion, the Court denies the motion without prejudice. The declarations of proposed forensic experts Chris Coleman and Roger Clark filed to support the motion lack the specificity needed for a *prima facie* showing that the evidence sought to be tested is material to the issue of Defendant's identity as the perpetrator of, or accomplice to, the crime. (Penal Code § 1405, subd. (g)(4).)

Declarants Coleman and Clark apparently viewed all the physical evidence stored with the Fresno Sheriff's Office and with the Court. (Clark Declar., 4:6-10; Coleman Declar., 2:24-26.) They recommended that certain items of evidence be tested for the DNA of the victim, Theresa Graybeal. (Motion, 4:14-16.) However, the declarations fail to identify with specificity what items are to be tested. The declarations contain no list, despite the assertion that "[t]he specific items are listed in the[] declarations." (Motion, 4:15-16.)

Declarant Clark stated that he could provide a list of the evidence examined. (Clark Declar., 4:11.) He also lists the persons investigators eventually connected to the crime. (Clark Declar., 2:26-3:6.) He also states that his "visual inspection indicates the likely presence of unacknowledged blood stains on the clothing worn by listed subjects." (Clark Declar., 4:17-20.) These statements suggests that Roger Clark could reasonably identify the evidence to be tested but has simply failed to do so. (Pen. Code § 1405, subd.(d)(1)(C).) Similarly, Declarant Coleman states that he "observed stains on the clothing of Marlin Lewis, Christina Menchaca, and Teena Topping" without specifying what clothing is to

be tested as to each individual. (Coleman Declar., 3:3-5.)

Finally, Chris Coleman declares "it is necessary to get testing of the clothing worn by *all parties* and the cigarette found near the victim, Theresa Graybeal, tested for DNA, to determine if the blood is hers." (Coleman Declar. 3:3-11 (italics added).) It is unclear from the Coleman declaration whether clothing worn by Defendant is among the clothing worn by "all parties" to be tested.

Based on the deficiencies noted above, the Court denies Defendant's motion, without prejudice, for failure to state a *prima facie* case. (Penal Code § 1405, subd. (g)(4).) Should Defendant address the issues noted above through supplemental declarations of the proposed experts, the Court will reconsider the request.

DATED this 24TH day of October, 2019.

Arlan L. Harrell

ARLAN L. HARRELL
Judge of the Superior Court

EXHIBIT 3

J. TONY SERRA, SBN 32639
CURTIS L. BRIGGS, SBN 284190
3330 Geary Blvd, 3rd Floor East
San Francisco, CA 94118
Tel 415-986-5591
Fax 415-421-1331

Attorneys for Defendant
DOUGLAS STANKEWITZ

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF FRESNO

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, vs. DOUGLAS STANKEWITZ, Defendant.	Case No. CF78227015 SUPPLEMENTAL DECLARATION OF ROGER CLARK IN SUPPORT OF MOTION FOR DNA TESTING

I, Roger Clark, declare under penalty of perjury the following, except as to those items below which I indicate to be based on information and belief. If called to testify I would testify as follows:

1. This declaration supplements my declaration in this case dated April 23, 2019.
2. On March 21, 2019, I personally inspected all of the evidence in this case held at the Fresno County Sheriff's Department, Fresno, CA and Fresno Superior Court, Fresno, CA.

3. I have attached a list of all of the evidence that I inspected at each location. See Exhibit 1 attached. The evidence located at the Sheriff's Department does not have evidence numbers, so I have listed it by box number and described it. I have also given it item numbers.

4. The evidence that should be tested for the victim Theresa Graybeal's DNA is located at the Fresno County Sheriff's Department and is as follows:

   a. Clothing of defendant Douglas R. Stankewitz, contained in Box 5B in a bag labeled 'Stankewitz, Douglas', consisting of blue corduroy pants and white tank tee shirt. (Item #3)

   b. Clothing of defendant Christina Menchaca, contained in Box 7, in a brown paper bag labeled 'Menchaca', consisting of a rust sweatshirt.(Item #19)

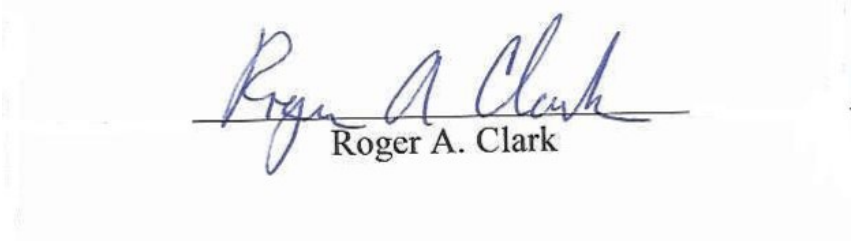
   c. Clothing of defendant Teena Topping, contained in Box 7, in a brown paper bag labeled 'Topping', consisting of blue levi's jeans and pink sweater. (Item #18)

   d. Clothing of defendant Marlin Lewis, contained in Box 7, in a brown paper bag labeled 'Lewis,

Marlin', consisting of blue and red long sleeve shirt and brown shoes.(Item #15)

5. The DNA on the above clothing of each defendant, Douglas Stankewitz, Marlin Lewis, Teena Topping and Christina Menchaca should be compared to the DNA on the clothing of the victim, Theresa Graybeal, used as victim's sample, contained in Box 5B, specifically her gray coat (Item #13) and blue sweater (Item #14), contained in a brown paper bags, to determine whether the DNA on the co-defendants' clothing is the DNA of the victim.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed in Santee, California, on November 12, 2019.



People v. Stankewitz, Fresno Superior Court Case No. CF78227015

Exhibit 1 to Supplemental Declarations of Roger Clark and Chris Coleman
Evidence List from viewing at Fresno SO and Courts 3/21/2019

Fresno Co. SO – morning

From Box 5
Item #5 – 3 photographs of Stankewitz's left arm
Item #4 – 4 photographs of Stankewitz's left arm, 2 of his right
Item #6 – Cassette tape of Billie Brown
Item #7 – 2 cassette tapes (D. Stankewitz, T. Garey)

From Box 5B
Item #8 – Keys (various), medication bottles, 8-track tape, broken necklace, ring, keychain/nail clipper
Item #9 – Receipt, brown paper bag puppet, drawing, sunglasses
Item #13 – Theresa's gray coat (bloodstains observed on back, shoulders, collar, and inside)
Item #10 – Contents of center console (lifesavers, receipts, glass case, brush, etc.)
Item #12 – Neutron Activation Analysis kits
Item #11 – Pepsi can (printed), Virginia Slim cigarette pack
Item #14 – Theresa's clothes: blue jeans, blue sweater, red shirt, light green panties, blue socks, brown shoes
Item #3 – Stankewitz's clothing: blue pants, white t-shirt, green socks, underwear, black shoes
Item #2 – Test fired cartridge cases from Titan .25 Auto pistol, S/N: 146425 (HS: "R-P 25 AUTO)

From Box 7
Item #17 – Head and pubic hair samples from autopsy (Theresa Graybeal)
Item #18 – Topping's clothing: blue jeans (blood stains?), pink sweater (blood stains?), shoes
Item #1 – Dagger from trunk
Item #16 – Contents of ashtray (ashes)
Item #19 – Menchaca clothing: brown shoes, rust slacks, blue shirt, rust sweater (blood stains?)
Item #15 – Lewis' clothing: brown shoes (blood drop?), blue jeans, blue shirt (blood stains?), socks and underwear
No Item # – Multiple evidence receipts

End of Fresno SO evidence.

Fresno Co. Superior Court – afternoon

Exhibit A – All in large manila envelope: Newspaper articles, plastic bag w/ personal items (glove box?), Comb, #2 cigarette supposedly from Theresa's mouth when shot
Def. Ex A – Paper with drawing of trajectory thru Theresa's head (Right to left, slightly up, front to back)
Def Ex B – Change of venue paperwork
Def Ex C – Change of venue paperwork
Def Ex D – News story scripts

Def Ex E – Subpoena Duces Tecum
Def Ex F – Subpoena Duces Tecum
Def Ex H – Radio story scripts
Def Ex A – New stories from 1978
Def Ex B – Coroner's receipt 1983
Peo Ex 50 – Death certificate 1983 Theresa Graybeal
Peo Ex 16 – Photograph – Marlin booking?
Peo Ex 70 – Photograph – booking ?
Peo Ex 71 – Photograph – D. Stankewitz booking
Peo Ex 72 – Evidence card
Peo Ex 73 – Fingerprint care
Peo Ex 79 – Drs. Note for Billie Brown
Peo Ex 78 – Finger print cards comparison
Peo Ex 68 – Photograph – booking ?
Peo Ex 67 – Photograph – Douglas Stankewitz booking
Peo Ex 66 – Photograph – booking ?
Peo Ex 54 – Photograph of Floorboard of 57 chevy
Peo Ex 52 – Photograph of trunk of 57 Chevy
Peo Ex 53 – Photograph of damage to patrol car
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Peo Ex 21 – Empty brown paper bag
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Peo Ex 30 – Empty brown paper bag from right front seat of car

End of Evidence examined.

EXHIBIT 4

SUPPLEMENTAL DECLARATION OF CHRIS COLEMAN

I, Chris Coleman, am a Senior Forensic Scientist at the Forensic Analytical Crime Laboratory, and do declare:

1. I am presently employed as a Senior Forensic Scientist at Forensic Analytical Crime Lab in Hayward, California. I have over twenty-four years of experience in forensic science with city and county law enforcement agencies, including nine years as the supervisor of the Firearms Unit with the Contra Costa County Sheriff's Crime Laboratory from 2007 to 2016. From 2016 to 2017 I was employed as a Contract Firearms Examiner at Ron Smith & Associates in Washington D.C. I currently examine cases for both the prosecution and defense.

2. My education background is as follows: I received my B.S. in Forensic Science from California State University, Sacramento in 1993; I studied chemistry and criminal justice at Casper College in Casper, Wyoming from 1988 to 1991; I studied criminalistics at California State University, Los Angeles from 1995 to 1996.

3. I am an expert in firearms examination, shooting reconstruction, blood spatter interpretation and crime scene processing. I have previously been court qualified in each of those fields. I am a member in good standing of the American Academy of Forensic Sciences, the Association of Firearms and Toolmark Examiners, and the California Association of Criminalists. I am a fellow of the American Board of Criminalistics and I have held certifications in firearms, toolmark, distance determination, and gunshot residue by the Association of Firearms and Toolmark Examiners. I have published and taught various firearms-related subjects to law enforcement, medical, and legal groups, including a recurring class on shooting incident reconstructions for the California Criminalistics Institute, the training division of the California Department of Justice. I am a California Peace Officers Standards and Training (POST) certified firearms instructor, range master, and armorer as well as a recent past president of the California Association of Criminalistics.

4. I have taken many proficiency tests throughout my career, including ones by CTS, Forensic Assurance (DFS-FEU), FAID2012, as well as tests prepared in-house. I have also participated in many empirical and validation studies of firearms over the years.

5. On Thursday, March 21, 2019, I examined all the physical evidence in this case at the Fresno County Sheriff's Office (FSO)and the Fresno County Superior Court. A list of the evidence viewed is attached at Exhibit 1 hereto. I have also examined the crime scene photos and autopsy photos.

6. During my examination of the physical evidence at FSO, I observed blood stains on the clothing of Marlin Lewis, Christina Menchaca, and Teena Topping.
7. In order to render an informed opinion regarding the identity of the blood in this case, it is necessary to get DNA testing of the clothing worn by the four defendants and the cigarette found near the victim, Theresa Graybeal, and her clothing in evidence, to determine if the blood is hers.

8. Specifically, the pink sweater and jeans worn by Teena Topping:

9. The shoes and shirt of Marlin Lewis:

10. The sweatshirt of Christina Mencha:

11. The shirt and jeans of Douglas Stankewitz:

12. Theresa Graybeal's clothes, sweater and coat, which are contained in the evidence, can be used to provide our victim standard:

13. The cigarette found next to Theresa at the crime scene should also be tested:

14. I declare under penalty of perjury, under the laws of the State of California and of the United States, that I have read the foregoing and that it is true and correct to the best of my knowledge, and that it was executed on Nov. 20th, 2019 in Hayward CA.

Chris Coleman,
Senior Forensic Scientist
Forensic Analytical Crime Laboratory

People v. Stankewitz, Fresno Superior Court Case No. CF78227015

Exhibit 1 to Supplemental Declarations of Roger Clark and Chris Coleman
Evidence List from viewing at Fresno SO and Courts 3/21/2019

Fresno Co. SO – morning

From Box 5
Item #5 – 3 photographs of Stankewitz's left arm
Item #4 – 4 photographs of Stankewitz's left arm, 2 of his right
Item #6 – Cassette tape of Billie Brown
Item #7 – 2 cassette tapes (D. Stankewitz, T. Garey)

From Box 5B
Item #8 – Keys (various), medication bottles, 8-track tape, broken necklace, ring, keychain/nail clipper
Item #9 – Receipt, brown paper bag puppet, drawing, sunglasses
Item #13 – Theresa's gray coat (bloodstains observed on back, shoulders, collar, and inside)
Item #10 – Contents of center console (lifesavers, receipts, glass case, brush, etc.)
Item #12 – Neutron Activation Analysis kits
Item #11 – Pepsi can (printed), Virginia Slim cigarette pack
Item #14 – Theresa's clothes: blue jeans, blue sweater, red shirt, light green panties, blue socks, brown shoes
Item #3 – Stankewitz's clothing: blue pants, white t-shirt, green socks, underwear, black shoes
Item #2 – Test fired cartridge cases from Titan .25 Auto pistol, S/N: 146425 (HS: "R-P 25 AUTO)

From Box 7
Item #17 – Head and pubic hair samples from autopsy (Theresa Graybeal)
Item #18 – Topping's clothing: blue jeans (blood stains?), pink sweater (blood stains?), shoes
Item #1 – Dagger from trunk
Item #16 – Contents of ashtray (ashes)
Item #19 – Menchaca clothing: brown shoes, rust slacks, blue shirt, rust sweater (blood stains?)
Item #15 – Lewis' clothing: brown shoes (blood drop?), blue jeans, blue shirt (blood stains?), socks and underwear
No Item # – Multiple evidence receipts

End of Fresno SO evidence.

Fresno Co. Superior Court – afternoon

Exhibit A – All in large manila envelope: Newspaper articles, plastic bag w/ personal items (glove box?), Comb, #2 cigarette supposedly from Theresa's mouth when shot
Def. Ex A – Paper with drawing of trajectory thru Theresa's head (Right to left, slightly up, front to back)
Def Ex B – Change of venue paperwork
Def Ex C – Change of venue paperwork
Def Ex D – News story scripts

Def Ex E – Subpoena Duces Tecum
Def Ex F – Subpoena Duces Tecum
Def Ex H – Radio story scripts
Def Ex A – New stories from 1978
Def Ex B – Coroner's receipt 1983
Peo Ex 50 – Death certificate 1983 Theresa Graybeal
Peo Ex 16 – Photograph – Marlin booking?
Peo Ex 70 – Photograph – booking ?
Peo Ex 71 – Photograph – D. Stankewitz booking
Peo Ex 72 – Evidence card
Peo Ex 73 – Fingerprint care
Peo Ex 79 – Drs. Note for Billie Brown
Peo Ex 78 – Finger print cards comparison
Peo Ex 68 – Photograph – booking ?
Peo Ex 67 – Photograph – Douglas Stankewitz booking
Peo Ex 66 – Photograph – booking ?
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End of Evidence examined.

FILED

MAY 11 2020

FRESNO COUNTY SUPERIOR COURT
By _____ DEPUTY

SUPERIOR COURT OF CALIFORNIA, COUNTY OF FRESNO

CENTRAL DIVISION

PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff, v. DOUGLAS RAY STANKEWITZ, Defendant.	Nos. CF78227015 **ORDER GRANTING AMENDED MOTION FOR DNA TESTING [PENAL CODE SECTION 1405]**

Having been convicted by jury of the first-degree murder, robbery, and kidnapping of Theresa Greybeal, with personal use of a firearm during the commission of the offenses, and currently serving a term of life without the possibility of parole, Defendant DOUGLAS RAY STANKEWITZ (Defendant) has filed through counsel an Amended Motion pursuant to subdivision (d) of Penal Code section 1405, for performance of forensic deoxyribonucleic acid (DNA) testing (Amended Motion).

Having read and considered Defendant's Amended Motion and the supporting and supplemental declarations of Defendant, Roger Clark, and Chris Coleman, and there having been no opposition filed by the

Offices of the Fresno County District Attorney or the California Attorney General, this Court finds as follows:

1. Defendant's verified Amended Motion includes:

A. states that Defendant is innocent and not the perpetrator of the crime;

B. explains why the identity of the perpetrator was, or should have been, a significant issue in the case;

C. makes a reasonable attempt to identify both the evidence to be tested and the specific type of DNA testing sought;

D. explains, in light of all the evidence, how the requested DNA testing would raise a reasonable probability that the convicted person's verdict or sentence would be more favorable if the results of DNA testing had been available at the time of conviction;

E. reveals that no DNA or other biological testing was conducted previously by either the prosecution or defense, to Defendant's knowledge; and

F. states that no other motion for testing under this section previously has been filed.

2. No hearing on the Amended Motion is necessary.

3. The evidence to be tested is available and in a condition that would permit the DNA testing requested in the Amended Motion.

4. The evidence to be tested has been subject to a chain of custody sufficient to establish it has not been substituted, tampered with, replaced, or altered in any material aspect.

5. The identity of the perpetrator of the crime was, or should have been, a significant issue in the case.

6. Defendant has made a *prima facie* showing that the evidence sought to be tested is material to the issue of Defendant's identity as the perpetrator of, or accomplice to, the crime, special circumstance, or enhancement allegation that resulted in the conviction or sentence.

7. The requested DNA testing results would raise a reasonable probability that, in light of all the evidence, the convicted person's verdict or sentence would have been more favorable if the results of DNA testing had been available at the time of conviction. The Court reaches this determination without deciding whether Defendant is entitled to some form of ultimate relief.

8. The evidence sought to be tested was not tested previously.

9. The testing requested employs a method generally accepted within the relevant scientific community.

10. The Amended Motion is not made solely for the purpose of delay.

11. Forensic Analytical Crime Lab, Hayward, CA, the laboratory mutually agreed upon by the Office of the Fresno County District Attorney and the Defendant in this noncapital case, is not a National DNA Index System (NDIS) participating laboratory that takes or retains ownership of the DNA data for entry into the Combined DNA Index System (CODIS), according to page 7 of 99 of the FBI Quality Assurance Standards Audit for Forensic DNA Testing Laboratories report which accompanied Exhibit C, the Declaration of Chris Coleman, to the Points and Authorities in support of Defendant's Amended Motion.

Based on the above findings, the Court grants Defendant's Amended Motion and orders that:

1. The following specific items of evidence be tested for the presence of the DNA of victim Theresa Graybeal:

A. The clothing of Defendant, contained in Box 5B in a bag labeled "Stankewitz, Douglas," consisting of blue corduroy pants and a white T-shirt. (Item #3);

B. The clothing of defendant Christina Menchaca, contained in Box 7, in a brown paper bag labeled "Menchaca," consisting of a rust sweatshirt (Item #19);

C. The clothing of defendant Teena Topping, contained in Box 7, in a brown paper bag labeled "Topping," consisting of blue Levi's jeans and a pink sweater (Item #18);

D. The clothing of defendant Marlin Lewis, contained in Box 7, in a brown paper bag labeled "Lewis, Marlin," consisting of a blue and red long-sleeve shirt and brown shoes (Item #15); and

E. The clothing of victim Theresa Graybeal, contained in Box 5B, in a brown paper bag, specifically consisting of a gray coat (Item #13) and a blue sweater (Item #14), to determine whether the DNA on the co-defendants' clothing is the DNA of the victim.

2. The testing of the above-listed items be conducted by Forensic Analytical Crime Lab using the PCR-Based short tandem repeat (STR) DNA analysis that incorporates the twenty (20) core CODIS genes, as soon as is practicable.

3. Forensic Analytical Crime Lab shall not initiate analysis until documented approval has been obtained from an appropriate

NDIS participating laboratory's technical leader of acceptance of ownership of the DNA data from the selected laboratory that may be entered into or searched in CODIS.

4. Forensic Analytical Crime Lab may communicate with either party, upon request, during the testing process. The result of any testing shall be fully disclosed to Defendant, the offices of the Fresno County District Attorney, and the California Attorney General.

5. The cost of DNA testing ordered shall be borne by the state.

DATED this 11TH day of May, 2020.

ARLAN L. HARRELL
Judge of the Superior Court

SUPERIOR COURT OF CALIFORNIA • COUNTY OF FRESNO Criminal Department, Central Division 1100 Van Ness Avenue Fresno, California 93724-0002 (559) 457-1801	FOR COURT USE ONLY FILED MAY 11 2020 FRESNO COUNTY SUPERIOR COURT By _____ DEPUTY
TITLE OF CASE: **The People of the State of California v. Douglas Ray Stankewitz**	
CLERK'S CERTIFICATE OF MAILING	CASE NUMBER: **CF78227015**

I certify that I am not a party to this cause and that a true copy of the **Order Granting Amended Motion For DNA Testing** was placed in a sealed envelope and:

☐ Deposited with the United States Postal Service, mailed first class, postage fully prepaid, addressed as shown below.

☒ Placed for collection and mailing on the date and at the place shown below following our ordinary business practice. I am readily familiar with this court's practice for collecting and processing correspondence for mailing. On the same day that correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service with postage fully prepaid.

Place of mailing: **Fresno, California 93724-0002** on:

Date: **May 11, 2020** Clerk, by T. VanZuyen, Deputy

Peter Jones
P.O. Box 28340
Fresno, CA 93729

Tony Serra & Curtis Briggs
3330 Geary Blvd., 3rd Floor East
San Francisco, CA 94118

Douglas Ray Stankewitz
In Care Of: Tony Serra & Curtis Briggs
3330 Geary Blvd., 3rd Floor East
San Francisco, CA 94118

Fresno County District Attorney's Office
Attn: Amythest Freeman
2220 Tulare St., Suite 1000
Fresno, CA 93721

5th District Court of Appeal
Re: Case No. CF78227015/F079923
2424 Ventura Street
Fresno, CA 93721

☐ Clerk's Certificate of Mailing Additional Address Page Attached

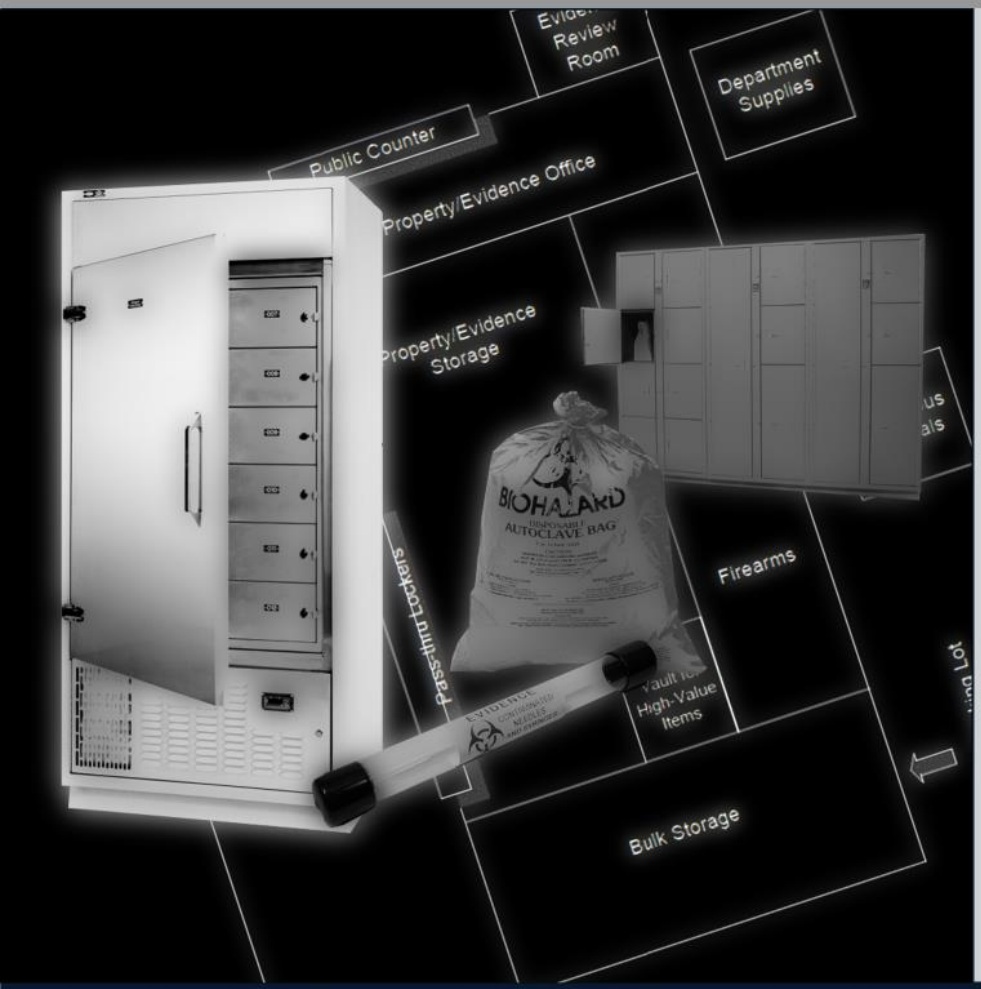
EXHIBIT 4ll

NISTIR 7928
http://dx.doi.org/10.6028/NIST.IR.7928

THE BIOLOGICAL EVIDENCE PRESERVATION HANDBOOK:

Best Practices for Evidence Handlers

Technical Working Group on Biological Evidence Preservation



Susan Ballou
Phylis S. Bamberger
Larry Brown
Rebecca Brown
Yvette Burney
Dennis Davenport
Lindsay DePalma
Cynthia Jones
Ralph Keaton
William Kiley
Margaret Kline
Karen Lanning
Gerry LaPorte
Joseph Latta
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Brian E. Ostrom
Lisa Schwind
Stephanie Stoiloff
Mark Stolorow
Melissa Taylor
Shannan Williams

National Institute of Standards and Technology
U.S. Department of Commerce

National Institute of Justice

NISTIR 7928

The Biological Evidence Preservation Handbook: Best Practices for Evidence Handlers

Technical Working Group on Biological Evidence Preservation

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Cynthia Jones
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Ralph Keaton
American Society of Crime Laboratory Directors/
Laboratory Accreditation Board

William Kiley
Joseph Latta
International Association for Property and Evidence

Margaret Kline
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Material Measurements Laboratory

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LGC Forensics

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April 2013

U.S. Department of Commerce
Rebecca Blank, Acting Secretary

National Institute of Standards and Technology
Patrick D. Gallagher, Under Secretary of Commerce for Standards and Technology and Director

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INTRODUCTION

Across the nation, headlines tell the story of evidence that has been mishandled, misplaced, lost, or destroyed. Often the blame for these mishaps is directed toward property and evidence custodians housed in law enforcement agencies nationwide. Many law enforcement agencies do not properly address, recognize, or support the efforts of their property rooms. Although these agencies bear ultimate responsibility for maintaining the integrity of the evidence, the real problem lies with a systemic failure to properly account for evidence from collection through final disposition. This failure reduces the public's confidence in the criminal justice system to produce just results in criminal and civil proceedings.

Biological evidence refers to samples of biological material—such as hair, tissue, bones, teeth, blood, semen, or other bodily fluids—or to evidence items containing biological material (DNA Initiative 2012). This biological evidence, which may or may not have been previously analyzed at a forensic laboratory, should be retained in an appropriate storage facility until needed for court or for forensic testing. Such evidence is frequently essential in linking someone to or excluding someone from crime scene evidence. The criminal justice system depends on presenting evidence to judges and jurors to help them reach a conclusion about the guilt or innocence of the defendant. All criminal justice stakeholders, including law enforcement officers, lawyers, forensic analysts, and fact finders, should be certain that the biological evidence they are considering has been properly preserved, processed, stored, and tracked to avoid contamination, premature destruction, or degradation. In addition, individuals who come into contact with biological evidence, such as evidence custodians, need to be confident that it has been packaged and labeled in a way that will allow them to efficiently locate relevant evidence for a case. To establish this confidence, all handlers of biological evidence should follow well-defined procedures for its optimal preservation.

The Biological Evidence Preservation Handbook offers guidance for individuals involved in the collection, examination, tracking, packaging, storing, and disposition of biological evidence. This may include crime scene technicians, law enforcement officers, healthcare professionals, forensic scientists, forensic laboratory managers, evidence supervisors, property managers, storage facility personnel, lawyers, testifying experts, court staff members, and anyone else who may come in contact with biological evidence. While many of the recommendations relate to the physical storage, preservation, and tracking of evidence at the storage facility, this handbook also covers the transfer of the material between the storage facility and other locations and discusses how the evidence should be handled at these other locations.

This report is divided into five main sections that detail issues and make recommendations related to biological evidence storage, tracking, preservation, and disposition. A glossary, which provides standard definitions of the technical terms used in this report, follows these sections.

RETAINING BIOLOGICAL EVIDENCE

While most states have established their own statutes and/or policies for biological evidence retention, some have not. It is imperative that high-level guidance be given to biological evidence handlers regarding the circumstances under which evidence must be kept. This section defines recommended best practices for retaining biological evidence, including the length of time such evidence should be kept. It also provides guidance on identifying what biological evidence should be retained.

BIOLOGICAL EVIDENCE HAZARDS AND HANDLING

Contact with bodily fluids can spread disease such as those caused by bloodborne pathogens, and individuals handling biological evidence should treat it as hazardous to ensure safety. This section offers recommendations on various aspects of biological evidence handling, including the use of personal

protective equipment (PPE), Federal standards, the management of spills or accidents, and biological waste disposal.

Packaging and Storing Biological Evidence

The use of well-defined procedures for packaging, storing, and tracking can maintain biological evidence integrity for testing. Personnel involved in managing biological evidence often face challenges because of the size and location of the storage facility, supplies available for packaging, adequacy of tracking systems and resources, and other issues. This section identifies current best practices to maintain evidence integrity from initial packaging to final disposition.

Chain of Custody and Evidence Tracking

Providing an accurate and complete chain of custody record ensures that the evidence that arrives in court is what was collected at the crime scene. An accurate chain of custody identifies and tracks the evidence from the time it was collected—including the method by which it was obtained—through final disposition for each individual who had possession and responsibility. This section discusses various evidence tracking systems and recommends procedures to improve all aspects of chain-of-custody recordkeeping.

Evidence Disposition

Jurisdictions face limitations because of storage space and preservation requirements and must make choices about when to keep or how to dispose of certain evidence. This section makes recommendations for best practices, policies, and procedures to decide what evidence needs to be retained and the length of time it needs to be retained in accordance with applicable statutes.

Technical Working Group on Biological Evidence Preservation

The recommendations in this document are not mandated by any governing body; they are provided as recommended best practices developed and agreed upon by the Technical Working Group on Biological Evidence Preservation. This working group consists of experts in all aspects of biological evidence preservation (see following list) who have devoted time to researching and documenting the best advice that current technology allows.

The Technical Working Group on Biological Evidence Preservation convened in August 2010 with the goal to provide guidance to evidence custodians who have been traditionally plagued by the lack of such guidance. Little attention has been paid to how handlers of biological evidence should properly store it after collection and through post-conviction. Although storage conditions alone are a major issue, the group quickly discovered that obstacles with biological evidence that need to be addressed to ensure integrity include packaging, proper maintenance and tracking throughout its chain of custody, appropriate disposition, and policies at the state, local, and departmental levels.

Through these analyses and discoveries, the Technical Working Group developed its charge: "To create best practices and guidance to ensure the integrity, prevent the loss, and reduce the premature destruction of biological evidence after collection through post-conviction proceedings."

The working group met nine times over two years. The working group developed this handbook through a consensus process in which each member had an opportunity to influence the recommendations and writing. Despite the diversity of backgrounds and views, the working group was able to reach substantial agreement on most issues, including formal recommendations.

Overall, the document is the working group's best attempt at providing practical guidance while addressing some of the broader issues in evidence management. The storage of biological evidence is

just one consideration, albeit a critical one, in a larger system of evidence storage; therefore, the group has put forward some recommendations that can also be applied to other forms of evidence preservation management. The scope of this report, however, is limited to biological evidence only.

The working group hopes that this document is useful in addressing the needs of its readers and will spark an ongoing dialogue about more ways to improve evidence management systems. Please visit http://www.nist.gov/oles/ to obtain more resources to help your organization better preserve its biological evidence.

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SPONSORSHIP

The NIJ is the research, development, and evaluation agency of the U.S. Department of Justice and is dedicated to researching crime control and justice issues. NIJ provides objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice. The Office of Investigative and Forensic Sciences is the Federal Government's lead agency for forensic science research and development as well as for the administration of programs that provide direct support to crime laboratories and law enforcement agencies to increase their capacity to process high-volume cases, to provide needed training in new technologies, and to provide support to reduce backlogs. Forensic science program areas include Research and Development in Basic and Applied Forensic Sciences, Coverdell Forensic Science Improvement Grants, DNA Backlog Reduction, Solving Cold Cases with DNA, Post-Conviction DNA Testing Assistance, National Missing and Unidentified Persons System, and Forensic Science Training Development and Delivery.

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science, standards, and technology in ways that enhance economic security and improve our quality of life. It accomplishes these actions for the forensic science community through the Law Enforcement Standards Office (OLES) Forensic Science Program, which directs research efforts to develop performance standards, measurement tools, operating procedures, guidelines, and reports that will advance the field of forensic science. OLES also serves the broader public safety community through the promulgation of standards in protective systems; detection, enforcement, and inspection technologies; public safety communication; and counterterrorism and response technologies.

I. RETAINING BIOLOGICAL EVIDENCE

This section provides guidance on preventing the premature destruction of biological evidence. This section focuses on criminal proceedings; however, the retention of biological evidence may be applicable to civil cases and proceedings. This section includes the following:

- guidance regarding biological evidence identification
- recommendations on the retention of biological evidence for certain crime categories
- recommendations on the retention of biological evidence for different case statuses

Preserving and readily retrieving biological evidence from adjudicated and unsolved cases has benefits for all members of the criminal justice system. As the identification power of DNA evidence is recognized, it is clear that crime-solving potential resides latent in biological evidence from crime scenes. Therefore, each state should consider the legal and policy issues that address the retention of biological evidence and should establish procedures that describe the type and length of time for which evidence should be retained for each type of crime. Although most states already have legislation that dictates which categories of crime qualify for long-term storage of biological evidence, some jurisdictions have problems interpreting and implementing policies within property and evidence rooms. For those states and localities in which there is limited or vague guidance or in which stakeholders are reconsidering requirements, the working group recommends the following retention considerations and requirements.

Recommendation I-1:
All persons who have responsibility for the intake and/or storage and disposition of biological evidence should take online, in-classroom, or other forms of training on evidence management.

IDENTIFYING BIOLOGICAL EVIDENCE

Existing state laws vary in their definitions of what constitutes biological evidence in the context of evidence retention. A review of the National Institute of Justice's (2002) list of items from which biological evidence can be found for criminal cases illustrates the variety of items that can be successfully tested with current technology. Further, touch DNA, or DNA contained in shed skin cells that transfer to surfaces that humans touch, can be sampled from countless objects and surfaces (Daly, Murphy, and McDermott 2012).

However, requiring the retention of all physical evidence that can potentially contain DNA would result in the retention of all evidence collected unless it was screened to determine the possible presence of genetic material. Therefore, this handbook's recommendations attempt to balance the interests of justice with practicable storage concerns and to offer a minimum threshold for biological evidence retention. The table below describes different types of evidence that can contain biological evidence, which, in turn could be tested for DNA.

Table I-1: Examples of Sources of Biological Evidence (National Institute of Justice 2002)

Evidence	Likely Location of DNA on the Evidence	Source of DNA
Baseball bat or similar weapon	Handle, end	Sweat, skin, blood, tissue
Hat, bandanna, or mask	Inside	Sweat, hair, dandruff
Eyeglasses	Nose or ear piece, lens	Sweat, skin
Facial tissue, cotton swab	Surface area	Mucus, blood, sweat, semen, ear wax
Dirty laundry	Surface area	Blood, sweat, semen
Toothpick	Tip	Saliva
Used cigarette	Cigarette butt	Saliva
Stamp or envelope	Licked area	Saliva
Tape or ligature	Inside/outside surface	Saliva, skin
Bottle, can, or glass	Side, mouthpiece	Saliva, sweat
Used condom	Inside/outside surface	Semen, vaginal or rectal cells
Blanket, pillow, sheet	Surface area	Sweat, hair, semen, urine, saliva
"Through and through" bullet	Outside surface	Blood, tissue
Bite mark	Person's skin or clothing	Saliva
Fingernail, partial fingernail	Scrapings	Blood, sweat, tissue

Potential sources of biological evidence can include, but are not limited to, the types of evidence listed in Table I-1. In some cases, even these evidence types may not contain DNA or may provide information of no probative value. Therefore, an official with experience, training, and insight into the context of the individual case should ultimately determine if an item could contain biological evidence and should be retained as such. These officials may include detectives, attorneys, investigators, crime scene technicians, and/or crime laboratory staff members. Property and evidence custodians, however, rarely have the expertise or insight into the context of a specific case to make initial determinations of what should be kept and whether it is biological evidence.

Recommendation I-2:
Prior to a property and evidence custodian accepting biological evidence, it should be clearly marked and labeled by the submitter as biological evidence, allowing it to be tracked within the evidence management system and stored appropriately from intake through disposition.

Bulky Evidence: Considerations for Long-Term Evidence Retention

To facilitate forensic testing for trial and post-conviction proceedings, it is essential to store and track as much of the evidence as necessary. However, it may be extremely difficult to maintain large or bulky items of evidence from which biological material is derived. Figure I-1 depicts the collection of biological material from a large bulky item—such as a couch—for forensic testing. For the long term, agencies might find it sufficient to retain samples taken from a large item (see B. and C. in figure I-I) as opposed to the large item on which biological evidence may have been located (see A. in figure I-I). Other examples of bulky evidence include a car, the wall/ceiling of a house, carpet, or another large piece of furniture such as a bed. If the origin of a sample is well documented (such as through photographs or case files), it may not be necessary to store the entire couch for testing and future re-testing.

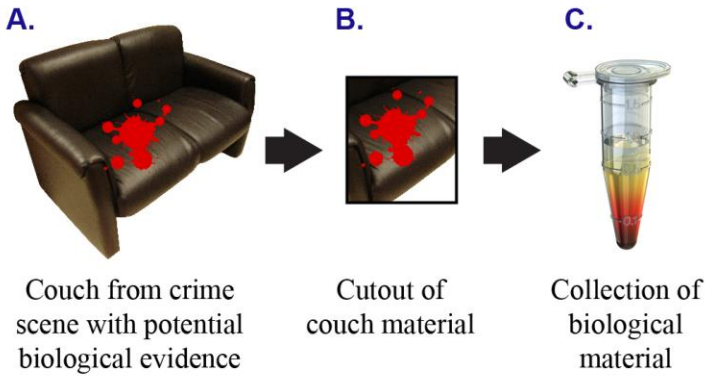


Figure I-1: Collection of evidence from large/bulky items.

Recommendation I-3:
Property and evidence custodians should consult with investigators, laboratory analysts, and, when appropriate, prosecutors to determine whether only representative sample(s) should be retained in situations in which samples are too large or too costly to store. Property and evidence custodians, investigators, laboratory analysts, and prosecutors should discuss situations in which prosecutors should be consulted. These decisions should not be made exclusively by property and evidence custodians.

Recommended Crime Categories for which Evidence Should be Preserved

In addition to defining what should be retained, the category of crimes for which biological evidence should be retained must also be prescribed. Individual state laws vary greatly in this regard (see appendix B for a listing of existing state laws regarding biological evidence retention).

Effect of "Case Status" on the Retention of Biological Evidence

When determining the duration of time that biological evidence must be held, it is essential to understand what is meant by "case status" for criminal cases. Generally, there are four categories of case status:

- Open Cases (i.e., no suspect, but investigation continuing)
- Charges Filed (i.e., suspects charged and court proceedings active)
- Adjudicated (i.e., conviction, dismissal, or acquittal)
- Unfounded/Refused/Denied/No Further Investigation

This section provides an overview of each of these categories and discusses the implications of biological evidence disposition for each. For the purposes of illustration, this handbook uses the crime categories that are used in the Federal Bureau of Investigation's National Incident-Based Reporting System (NIBRS). This system classifies 22 types of offenses as Group "A" crimes and 11 types of lesser offenses as Group "B" crimes. Table 1-2 uses the NIBRS crime categories.

Open Cases

Open cases are those in which one or more suspects have not yet been identified or charged, a suspect has been identified but not yet charged, or the investigation is ongoing. As a standard practice, it is recommended that the evidence be maintained by the holding agency for as long as the statute of limitations for the crime or as applicable by law.

Recommendation I-4:
Biological evidence that is collected in the course of an open investigation should be retained indefinitely for homicides and, at a minimum, for the length of the statute of limitations for all other offenses.

Charges Filed

Standard practice dictates that all evidence in any case being prosecuted is maintained in the event that the evidence is needed for laboratory analysis or court proceedings. When charges are filed, a person has been charged and court proceedings have been or will be initiated. Evidence custodians should be notified if charges have been filed to (1) communicate case status for evidence release requests and (2) assist evidence custodians in determining disposition status.

Recommendation I-5:
A communications link should be established between investigators, prosecutors, and the responsible custodial agency to be able to determine if charges are filed.

Adjudicated

A case is adjudicated when a final judgment has been rendered in a legal proceeding. The disposition of evidence in adjudicated cases varies according to the crime category. Knowledge of the retention statutes in one's state is essential. Additional guidance is provided in table I-2. Appendix B identifies evidence retention laws in the United States as a reference.

Recommendation I-6:
Biological evidence should be preserved through, at a minimum, the period of incarceration in the following crime categories, as defined in NIBRS, regardless of whether or not a plea was obtained: homicides, sexual assault offenses, assaults, kidnapping/abductions, and robberies. For all other Group A and B offenses, biological evidence may be disposed of upon receipt of authorizations.

Unfounded/Refused/Denied/No Further Investigation

In cases categorized as unfounded, refused, or denied, or for which no further investigation will be conducted, evidence can be disposed of upon receipt of disposition approval from the assigned investigator unless such disposal is prohibited by law. This category includes instances in which the

victim chooses not to press charges, the prosecutor decides not to file charges, the investigator determines no arrest will be made, or the case is exceptionally cleared.

Recommendation I-7:
After it is determined that charges will not be sought or filed, evidence, including any biological evidence, need not be retained unless destruction is prohibited by statute.

CRIME CATEGORY/CASE STATUS/PERIOD OF RETENTION CHART

In the exercise of his/her duties, the property and evidence custodian may determine the status of cases in his/her custody and may decide whether contact should be made with the investigating officer or prosecutor. Crime categories/classifications vary from state to state; therefore, *knowledge of the specific categories in one's own state is crucial*. Table 1-2 provides guidance.

Table I-2: Summary of Biological Evidence Retention Guidelines for Crime Categories

<table>
<tr><th></th><th colspan="4">CASE STATUS</th></tr>
<tr><th>Crime Categories (NIBRS*)</th><th>Open†</th><th>Charges Filed</th><th>Adjudicated</th><th>Unfounded/ Refused/Denied/ No Further Investigation</th></tr>
<tr><td>Homicide Offenses</td><td>Retain indefinitely</td><td>Retain indefinitely</td><td>At a minimum, retain for the length of incarceration‡</td><td>Dispose of upon receipt of authorization§</td></tr>
<tr><td>Sexual Offenses</td><td rowspan="3">At a minimum, retain for the length of the statute of limitations§</td><td rowspan="3">Retain pending adjudication§</td><td>At minimum, retain for the length of incarceration‡</td><td rowspan="3">Dispose of upon receipt of authorization§</td></tr>
<tr><td>Assault Offenses, Kidnapping/ Abduction, Robbery</td></tr>
<tr><td>All Other Group A & B Offenses</td><td>Dispose of upon receipt of authorization§</td></tr>
</table>

* The Federal Bureau of Investigation's National Incident-Based Reporting System (NIBRS) classifies 22 types of offenses as Group "A" crimes and 11 types of lesser offenses as Group "B" crimes. Table 1-2 uses the NIBRS crime categories.

† Cases in which someone was found not guilty after criminal proceedings and additional suspects have not yet been identified or charged should follow the same guidance as open cases.

‡ Statutes regarding the disposition of biological evidence from homicide, sexual offenses, and other crime categories vary from state to state. Almost all states that have statutes require that such evidence be held for the period of incarceration; a few states require that the evidence be held for the period of probation, parole, or registration as a sex offender. Custodians should check their state statutes. Written authorization for disposal should be obtained from the assigned case investigator. (Note: If the assigned investigator is no longer employed by the agency, a designated investigator should give written approval.)

§ Section V provides further guidance regarding the disposition process.

II. BIOLOGICAL EVIDENCE SAFETY AND HANDLING

PURPOSE

This section provides guidance on biological evidence safety and handling concerns and includes:

- discussion of universal precautions
- guidance regarding the use of personal protective equipment (PPE)
- guidance regarding exposure control plans
- guidance on the disposal of regulated waste

Individuals handling any evidence should assume that all of it may contain potentially hazardous biological material. Anyone handling biological material may be exposed to harmful infectious diseases. The following section discusses procedural implications related to the safe handling of biological evidence and guidance on the way individuals should protect themselves.

UNIVERSAL PRECAUTIONS

The U.S. Occupational Safety and Health Administration (OSHA) developed universal precautions to protect workers from exposure to human blood or other potentially infectious materials. It is not possible to determine if every bodily fluid or stain collected from crime scenes is contaminated with a bloodborne pathogen; therefore, all bodily fluids and tissues are presumed to be contaminated. When individuals handle any type of biological evidence, procedures need to be in place to reduce or eliminate the risk of exposure to bloodborne pathogens that can transmit disease (OSHA 2012). Common diseases/viruses caused by exposure to bloodborne pathogens include hepatitis and human immunodeficiency virus (HIV). These raise the most concern because of the potential for lifelong infection and the risk of death associated with infection once an individual is exposed.

PERSONAL PROTECTIVE EQUIPMENT

The appropriate use of PPE is intended to protect the individual and the evidence from cross-contamination. PPE includes disposable gloves, disposable overalls, laboratory coats, masks, and eye protection. Every agency should prepare a written policy or directive informing evidence handlers of biological safety concerns and PPE requirements. Directives should include the following universal precautions and work practices, as identified by OSHA (2012), or state regulations derived from OSHA.

- **PPE should be used in every situation in which there is a possibility of exposure to blood or infectious diseases.** Gloves and protective clothing should be worn when providing first aid or medical care, handling soiled materials or equipment, and cleaning up spills of hazardous materials. Face protectors, such as splash goggles, should be worn to protect against items that may splash, splatter, or spray.
- **PPE must be clean and in good repair.** PPE that is torn or punctured, or that has lost its ability to function as an effective barrier, should not be used. Disposable PPE should not be reused under any circumstances. While using PPE, individuals should not touch their eyes or nose with gloves.
- **PPE must be removed when it becomes contaminated and before leaving the work area.** Used protective clothing and equipment must be placed in designated areas for storage, decontamination, and disposal.
- **Dried blood or other dry potentially infectious material should not be assumed to be safe.** PPE should be used when handling these items.

- **When wet material is spilled,** the area containing blood or other potentially infectious material should be covered with paper towels or rags, doused with a disinfectant solution (10 % bleach solution), left for at least 10 minutes, and removed. Materials should then be placed in a waste disposal bag designated for biohazardous material. Appropriate PPE should be used throughout this process.
- **Hazardous biological evidence packages must be appropriately labeled with biohazard labels and signage.** Without the biohazard label (see figure II-1) other employees could inadvertently be exposed to risk or could contaminate the evidence. The labeling and signage guidance also applies to any shelves or rooms where these items are being stored. Additionally, a ventilation system may be required to ensure that employees are working in a safe workplace.

Figure II-1: Biohazard label.

Occupational Safety and Health Administration (OSHA)

OSHA, established by the Occupational Safety and Health Act of 1970, authorizes the Secretary of Labor to develop and promulgate occupational safety and health standards, to develop and issue regulations, to conduct investigations and inspections, to determine the status of compliance with safety and health standards and regulations, and to issue citations for noncompliance with safety and health standards and regulations. The Act also requires that states with an approved state plan provide for the development and enforcement of safety and health standards. Twenty-one states operate their own job safety and health programs (three additional states cover only state and local government employees). States with approved programs must set job safety and health standards that are "at least as effective as" comparable Federal standards. In most cases, states adopt standards identical to Federal ones (OSHA 2012).

OSHA's *Bloodborne Pathogen Standard* is designed to protect the millions of workers in healthcare and related occupations from the risk of exposure to bloodborne pathogens, such as HIV and the hepatitis B virus (HBV). The standard creates numerous requirements for workplaces where workers handle blood or other potentially infectious materials, including bodily fluids.

Exposure Control Plan

Crime laboratories, property and evidence rooms, and other locations where biological evidence is stored should have exposure control plans in place that are designed to minimize or eliminate occupational exposure to bloodborne pathogens. An exposure control plan is an employer's written policy that outlines the protective measures the employer takes to eliminate or minimize employee exposure to blood and potentially infectious diseases. At a minimum, the plan must contain the following:

- an exposure determination that identifies job classifications and, in some cases, tasks and procedures that involve occupational exposure to blood and potentially infectious diseases
- procedures for evaluating the circumstances surrounding an exposure incident
- a schedule of how and when other provisions of the standard will be implemented, including methods of compliance, communication of hazards to employees, and recordkeeping (OSHA 2012)

Each employee handling biological evidence must be trained on all related requirements and exposure risks.

Agencies should strictly limit the number of employees with exposure to these types of hazardous materials, either through staffing or segregation of biohazardous materials. (See section III for more information.)

BIOLOGICAL EVIDENCE DISPOSAL

REGULATED WASTE

The OSHA standard also defines wastes that should be regulated and monitored. Regulated waste, as defined in *Bloodborne Pathogen Standard*, is liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed, items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling, contaminated sharps, and pathological and microbiological wastes containing blood or other potentially infectious materials (OSHA 2012).

Regulations governing the disposal of regulated waste or waste that requires special handling exist at the state level, most often from the state's department of health. Generally, state laws require that regulated waste be rendered non-infectious prior to disposal. Once the biohazard is decontaminated, it can be disposed of like any other solid waste.

STAGING FOR DESTRUCTION/DECONTAMINATION

Items to be destroyed or decontaminated must be removed from the active inventory and staged in an area for "bio items" that are scheduled for "destruction" and appropriate disposal.

There are several methods that can be used to destroy or decontaminate biohazardous material.

- **Incineration.** Incineration involves the actual burning of the waste. This method both destroys and decontaminates the evidence. Although effective, incineration is associated with serious air quality concerns. Evidence handlers should consult local and state laws for guidance.
- **Thermal Treatment.** Similar to incineration, thermal treatments use heat to destroy any pathogens present in biological material. There are several types of thermal treatments, such as autoclaves, microwaves, and dry heat systems. Each of these can be used to render biological evidence safe prior to disposal.
- **Chemical Treatment.** The most common method of decontamination is the use of chlorine either in the form of sodium hypochlorite solution (commonly known as bleach) or in the form of the more powerful (and correspondingly more hazardous) gas, chlorine dioxide. These compounds are relatively cheap and effective (HERC 2012).

Individuals responsible for destroying or decontaminating evidence should consult state regulations and the crime laboratory before deciding on an appropriate and safe method for destroying or decontaminating evidence. More information on biological evidence disposition requirements is provided in section V.

III. PACKAGING AND STORING BIOLOGICAL EVIDENCE

PURPOSE

This section provides guidance on the proper packaging and storage of evidence containing biological material. This section includes the following:

- guidance on packaging different types of biological evidence
- high- and low-tech methods to dry wet evidence
- best practices regarding the use of containers and individual item packaging
- guidance on the appropriate conditions for biological evidence storage
- a discussion on storage location considerations
- a list of references for further guidance and training

The packaging and storage of evidence is of paramount importance in forensic investigation. However, requests to produce evidence have demonstrated inadequacies in the packaging and storage of some evidence (Greene and Moffeit 2007; Kiley 2009). Further, studies call for greater care when packaging and storing evidence to prevent contamination and to ensure reliable analysis in the future (Goray, van Oorschot, and Mitchell 2012).

Multiple underlying factors affect law enforcement's ability to appropriately store evidence for optimum preservation, including limitations in the management and capacity of the storage facility, insufficient materials available for packaging, inadequate or improper temporary storage, changes in technology, and the lag between evidence collection and transport of the evidence to the evidence storage facility (Kiley 2008).

The following information will assist those individuals responsible for packaging and storing biological evidence in performing their duties at a level required for optimum preservation of evidence. Nonetheless, jurisdictions should place greater emphasis on the needs of their property rooms and staff members. The jurisdiction must ensure that the agency has sufficient resources and must apply appropriate methods and procedures to ensure that evidence is maintained in a condition suitable for future analysis.

Recommendation III-1:
In tandem with state or local legislatures, managers in law enforcement and relevant stakeholders should advocate for additional resources and funding to ensure the integrity of biological evidence through prioritizing the packaging, storage, maintenance, and security of the evidence in their jurisdictions.

PACKAGING DIFFERENT FORMS OF BIOLOGICAL EVIDENCE

Biological evidence exists in several different forms, each of which must be packaged, handled, and stored uniquely. Numerous studies have been conducted analyzing the stability of biological material and extracted DNA with varying results. The following guidance uses the expertise of the working group and scientific research to recommend storage conditions and methods that are fit for purpose in light of existing resources available to law enforcement agencies. As technologies advance and DNA testing sensitivities change, more stringent guidelines may be required.

WET VERSUS DRY EVIDENCE

There are two physical states in which biological evidence is submitted: wet and dry. Certain types of evidence, such as blood-draw samples or some of the contents of a sexual assault kit, must remain in liquid form. In most cases, these types of evidence are obtained from the crime laboratory or medical facility. All other evidence that is wet should be dried to be properly stored and tested in the future. Drying wet items of evidence, such as a blood-soaked garment, should be the first task of anyone handling wet biological evidence once it has been collected.

Temporary Storage of Wet Items

At times, the evidence handler may have to temporarily store evidence in its wet state because the facilities or equipment necessary to dry it properly are not available. In such a case, the handler should place the evidence in an impermeable and nonporous container (i.e., packaging through which liquids or vapors cannot pass), such as a metal can or glass jar, and should place the container in a refrigerator that maintains a temperature of 2°C to 8°C (approximately 35°F to 46°F) and that is away from direct sunlight. The handler may leave the evidence there until it can be air dried or submitted to the laboratory.

Plastic bags can be used temporarily to store wet evidence but must not be used for long-term storage because of the possibility of bacterial growth or mold. Exceptions include plastic bags that contain desiccant, a drying agent that prevents condensation and the subsequent growth of fungi or bacteria, and breathable plastic bags (Tyvek) that can be used for damp items and swabs.

Methods for Drying Wet Evidence

If evidence with wet biological material is not correctly air-dried, there is a high probability that the biological material will be destroyed by bacterial growth. This could potentially preclude generation of DNA results (National Institute of Justice 2002). Here are a few examples of low-tech and high-tech methods for properly drying evidence.

Low-Tech

Agencies that do not have sufficient funds or a need (i.e., they do not handle a significant volume of wet evidence) for equipment specifically designed for drying evidence generally use low-tech methods. In these cases, it is recommended that an isolated and secure area—such as a locker, shower stall, or room—be designated for this purpose. For example, a metal locker specifically labeled for biohazards is commonly used to dry evidence. Figure III-1 shows where the submitting officers have attached packaging materials to the outside doors of metal lockers. These materials will be used for repackaging the evidence once it has dried. Wet garments should hang with sterilized paper beneath and between them to minimize contamination while drying. After the drying process, the paper should be packaged separately and submitted with the garment, as it may contain trace evidence.

A shower stall is also an excellent, inexpensive way for departments with limited resources to dry evidence. Departments can create this system with a prefabricated fiberglass shower enclosure elevated on a wooden frame to make room for controlled drainage. (See figure III-2.) If possible,

Figure III-1: Metal lockers used for evidence drying.

Figure III-2: Fiberglass shower enclosure.

there should be an adjacent water faucet on which to attach a cleaning hose for washing the enclosure during decontamination.

Any room dedicated to drying evidence should have surfaces that allow for easy decontamination. For example, figure III-3 shows a fully tiled room outfitted with stainless steel hanging rods. The locking mechanism on the door handle prohibits access to all except the assigned personnel.

Figure III-3: Room designated for drying evidence.

Adding complex features to the room, such as a ceiling air filtration system, would move this unit into the "high-tech" category. The drying room should be under negative pressure, with 12 to 15 air changes per hour, and the air should be vented to the exterior of the building (National Institute of Justice and Office of Law Enforcement Standards 1998).

In general, when the low-tech method is used, it is imperative that the area designated for drying biological evidence *not* be in direct sunlight. Additionally, the temperature and humidity should be controlled as much as possible so that the temperature variation is limited to between 15.5 °C and 24 °C (60 °F and 75 °F) and the relative humidity does not exceed 60 percent. Any adjacent areas (e.g., walls, ceiling, and the area below the evidence) should be made of materials that enable decontamination after *every* use of the drying area.

Decontamination

Decontamination of surfaces or items can be accomplished by using a freshly made solution of 10 percent bleach or a suitable substitute. Individuals responsible for decontamination should consult with the laboratory for suitable substitutes (Centers for Disease Control and Prevention 2012). Refer to discussion on chemical treatment in section II for more information.

Recommendation III-2:
To optimize a sterile environment without commingling items of evidence, property and evidence management should establish a policy or procedure requiring documentation of who is responsible for cleaning the drying area, how the area is to be cleaned and decontaminated, how the decontamination process is documented, and how long the documentation is to be retained.

High-Tech

One of the most acceptable methods for drying biological evidence is the use of a commercially manufactured evidence drying cabinet. The cabinet allows an item to be secured while air is circulated through an activated high-efficiency particulate air (HEPA) filter that draws out any airborne particles. In such cases, the HEPA filter may become evidence as well. This type of equipment generally is found in larger departments and agencies where there is a daily need for drying evidence. (See figure III-4.)

Figure III-4: Commercial drying unit.

Regardless of the type of drying cabinet or locker used, evidence handlers should always place paper under the item to capture any trace evidence that may fall off as it dries. This paper should be packaged separately and submitted with the item. Hangers should not be reused.

If an item cannot be dried, the crime laboratory should provide further guidance.

Dry Storage

In most cases, nucleic acids, such as DNA, are best preserved in an air-dried, water-free environment. Water can cause instability and breakage in strands that bind DNA, which would degrade the ability to properly test. Further, the presence of water encourages the growth of yeast, mold, and bacteria, which can also degrade DNA (Kansagara, McMahon, and Hogan 2008).The use of desiccants has become more widespread. Consult the local laboratory for more information about the use of desiccants.

General Evidence Packaging

If the collected evidence is dry or has been dried, the evidence handler should place each item into a separate, previously unused paper bag or other breathable container. The size and type of container depends on the type of biological evidence. Generally, the bag or container should be securely sealed to ensure that no evidence will be lost (some containers come with manufacturer's seals that do not require tape). As mentioned earlier, all containers should indicate that biohazardous material is stored within the package.

Each package should be labeled with information essential to efficient evidence processing, filing, and retrieving. More information on labeling evidence for tracking purposes is discussed later in this section.

Because packaged evidence may be accessed for testing or examination in the future, materials used to package evidence of different sizes and types should be customized and standardized to properly fit the available storage spaces.

Recommendation III-3:
Each law enforcement agency should develop a protocol for standardizing evidence packaging materials and customizing shelving to allow for more efficient retrieval of evidence stored in property rooms.

Evidence Bags

Homicides, sexual assaults, aggravated assaults, robberies, and burglaries frequently involve bulky evidence, such as clothing and bedding, which presents storage challenges. Figure III-5 illustrates a method that allocates specific shelving for selected sizes of bags and makes each bag easily retrievable. The shelves are no deeper than the longest dimension of the bags, eliminating the possibility of something being hidden behind other evidence. The shelves are designed for two sizes of bags, which are stored by case number.

Figure III-5: Evidence stored in bags.

Evidence Boxes

Another storage option for departments is the use of different boxes sized for the dimensions of the storage shelf. This system uses space efficiently and reduces retrieval time. Evidence stored in boxes with holes (such as handle cutouts in banker's boxes) should be packed in sealed packages. If the evidence is not in a sealable package, the holes of the box in which it is stored should be closed to prevent transfer of any material to another box.

In some cases, firearms are analyzed for biological evidence. Custodians who need to store this kind of evidence should unload the weapon to make it safe and then place it into a new cardboard gun box. The submitting individual must ensure that the box is sealed and must indicate on the exterior of the box that the weapon was unloaded and made safe and may contain biological material. Shelving should be deep enough for only a single box so that one cannot become hidden behind another.

Evidence Envelopes
Small items of evidence (e.g., trace evidence, cigarette butts, fibers, etc.) may be stored in small envelopes. Different sizes of envelopes can be selected based on the dimensions of the shelf or drawers, ensuring efficient use of space and reducing retrieval time.

Figure III-6: Evidence stored in envelopes.

Liquid Evidence, Tissue Samples, Extracted DNA, and Other Types of Evidence Packaging

As stated earlier, certain types of evidence will remain in liquid form or contain fluids. These types require different types of packaging materials as well. Specific storage conditions regarding these and other types of evidence will be discussed later in the section.

Recommendation III-4:
For the safety of employees, agencies should always attempt to segregate types of biohazardous evidence, such as liquid evidence, tissue samples, and extracted DNA, in one centralized location for easy identification and safe storage.

Blood Samples
Generally, blood draw tubes and vials are collected and submitted in some type of container recommended by the crime laboratory and/or hospital. If the department receives a vial or tube that is not packaged in a readily identifiable manner, it should be placed in an envelope that is easily recognizable, clearly marked as to its contents, and bearing a visible biohazard label.

Glass vials of blood should never be frozen because the vial might explode or crack. The Stabilizing Solutions call-out box on page 14 provides guidance on handling and storing vials that contain preservatives.

Hypodermic Needles
Department packaging protocols should require that any type of needle or other sharp object entering the property room be stored in a container that is closeable, puncture-resistant, leak-proof on the sides and bottom, labeled or color-coded, and breathable. An example is shown in figure III-7. These items should not be commingled in a package with other evidence. Sharps containers also must be maintained upright throughout use (OSHA 2012).

Figure III-7: Evidence syringe tube.

For employee safety, syringes should be stored in an area designated for such evidence. Commingling packaged syringes with other evidence creates a special safety hazard because syringes can accidentally deliver infectious agents directly into the bloodstream (HERC 2012). Filing drawers, bins, or boxes (see figure III-8) can be used for storing these items.

Figure III-8: Storage for tubes or vials.

Breathable Storage Containers
Throughout this section, breathable storage containers are mentioned as a preferred method for packaging. Breathable containers are important because they prevent condensation, which can encourage the growth of bacteria that can attack and degrade DNA samples. Oxygen can provide a protective barrier against these types of bacteria (Seah and Burgoyne 2001). Contact the crime laboratory for further details on the use of breathable containers.

Urine Samples
If an agency receives a vial or tube that is not clearly labeled as containing urine, it should be labeled or packaged in an identifiable envelope or box that is clearly marked as to its contents. Employee safety mandates that this type of biohazard, similar to blood, tissues samples, and extracted DNA, be segregated in one centralized location for easy identification and safe storage. Urine should not be frozen in glass jars or vials.

Sexual Assault Kits
State or local crime laboratories, local hospitals, or evidence supply vendors generally supply law enforcement agencies with their sexual assault kits. The sexual assault kit packages can be boxes (figure III-9) or envelopes (figure III-10). The contents of these kits can vary by agency. An itemized list of collected items should be submitted with the kit. Boxes and envelopes of uniform size make storage and retrieval efficient, as shown. Given the importance of biological evidence in these cases, sexual assault kits are often retained for decades and must be stored in a manner that prevents degradation and facilitates easy retrieval and identification. Depending on the contents of the kits, a temperature- and humidity-controlled facility may be appropriate.

Figure III-9: Sexual assault kits stored in boxes.

Extracted DNA
Preservation of genomic DNA extracted from biological evidence is an important consideration for any handling, storage, and retrieval procedures, as this DNA may be the only source of material for future testing. Historically, extracted DNA has been stored in a preservative and then frozen or refrigerated. The stability and recovery of DNA extracts is dependent on the quantity and quality of the extracted DNA prior to storage as well as the type of tube used for storage. However, maintaining freezers and refrigerators is costly, which has led to research on room temperature storage of DNA extracts. (Bonnet et al. 2010; Frippiat et al. 2011; Lee et al. 2012; Lee et al. 1991; Smith and Morin 2005; Lee, Crouse, and Kline 2010; Wan et al. 2010). While the Working Group does not endorse a specific method for room temperature storage of DNA extracts, it encourages the audience to consider such methods as more information becomes available regarding the utility of room temperature storage methods. Contact the crime laboratory to identify what it recommends or requires.

Figure III-10: Sexual assault kits stored in envelopes.

Stabilizing Solutions

In many cases, stabilizing solutions that may eliminate the need to freeze or refrigerate evidence are available on the market to enable easier and more cost effective storage and transportation of DNA samples and other types of biological evidence (Swinfield et al. 2009; Lee et al. 2012; Zhu et al. 2007; Roberts and Johnson 2012). Most crime laboratories use preservatives or stabilizing solutions in biological samples prior to or after testing. Contact the crime laboratory to identify which solution it uses and how this affects the agency's storage requirements.

Tissue Samples

At times, preservation of tissue samples for the long term may be handled by a property and evidence custodian after the tissue has been sampled and analyzed by a crime laboratory or medical examiner. Tissue samples that are submitted for DNA analysis are usually stored at -20 °C as rapidly as possible to halt the degradation process. In cases of mass casualty disasters, freezing or refrigeration may not be immediately available. The use of preservation reagents used to stabilize tissue samples temporarily at room temperature may be advantageous (Graham, Turk, and Rutty 2008; Kilpatrick 2002; Michaud and Foran 2011; Caputo, Bosio, and Corach 2011). The Working Group does not endorse a specific method for packaging or preserving tissue samples because storage methods and preservation reagents vary widely among laboratories. Contact the crime laboratory to identify what it recommends or requires.

Other Items

Items such as a used condom or a fetus (or other product of conception) may be placed in plastic, sealed, and frozen. In all cases where there is some ambiguity in proper storage, evidence custodians should contact the local crime laboratory for further guidance. According to the National Institute of Justice (2002),

> Some methods of collection and storage may promote the growth of bacteria and mold on the evidence. Bacteria can seriously damage or degrade DNA contained in biological material and inhibit the ability to develop a DNA profile; however, evidence can still sometimes yield DNA results. For example, PCR [polymerase chain reaction] technology can allow the laboratory to develop profiles from some moldy biological samples, whereas other evidence may fail to yield a usable DNA profile, even when no mold is visible. Therefore, close consultation with the laboratory is important to determine the type of DNA testing most likely to yield results on the available evidence.

Packaging Best Practices Summary

Agencies should encourage the following best practices in biological evidence packaging.

Containers

- ✓ Use paper bags, manila envelopes, cardboard boxes, and similar porous materials for all biological evidence. (See page 10 for specific guidance on wet items.)
- ✓ Use butcher or art paper for wrapping evidence, for padding in the evidence container, and/or as a general drop cloth to collect trace evidence.
- ✓ Package evidence and seal the container to protect it from loss, cross-transfer, contamination, and/or deleterious change.
- ✓ For security purposes, seal the package in such a manner that opening it causes obvious damage or alteration to the container or its seal.

Item Packaging

- ✓ Package each item separately; avoid comingling items to prevent cross-contamination.
- ✓ Use a biohazard label to indicate that a potential biohazard is present.
- ✓ Plastic bags are not preferred for storage because of the possibility of bacterial growth or mold.
- ✓ If drying wet evidence is not possible, place the evidence in an impermeable, nonporous container and place the container in a refrigerator that maintains a temperature of 2 °C – 8 °C (approximately 35 °F to 46 °F) and that is located away from direct sunlight until the evidence can be air dried or until it can be submitted to the laboratory.
- ✓ Seal each package with evidence tape or other seals, such as heat seals and gum seals; if possible, do not use staples. Mark across the seal with the sealer's identification or initials and the date.
- ✓ Unload, make safe, and place all firearms submitted into evidence for biological testing into a new cardboard gun box. As the submitting individual, seal the box and indicate on the exterior of the box that the weapon was unloaded, made safe, and may contain biological material.
- ✓ Label items according to agency policy and procedures. At a minimum, mark each package with a unique identifier, the identification of the person who collected it, and the date of collection. The unique identifier should correspond to the item description noted on the property/evidence report (e.g., evidence tag, property sheet, property receipt, or property invoice). More information on evidence labeling can be found on pages 29 – 30.
- ✓ Maintain the integrity of the item through the package documentation, including all markings, seals, tags, and labels used by all of the involved agencies. Preserve and document all packaging and labels received by or returned to the agency, because this information is critical.

BIOLOGICAL EVIDENCE ENVIRONMENTAL CONDITIONS

The proper drying and packaging of biological evidence is the first step toward achieving optimal preservation. The next step is storing it in the proper environmental conditions. Biological evidence must be stored in a fashion that not only safeguards its integrity but also ensures its protection from degradation. The storage of biological evidence may include, but is not limited to, the use of temperature- and humidity-controlled areas or freezers and refrigerators. In all cases, it should be understood that conditions of storage should include protection from moisture, excessive heat, and protection from sunlight.

Biological evidence should be stored in one of the following conditions, depending on the type of evidence, and if known, the type of analysis that will be conducted:

- **frozen**: temperature is maintained thermostatically at or below –10 °C (14 °F)
- **refrigerated**: temperature is maintained thermostatically between 2 °C and 8 °C (36 °F and 46 °F) with less than 25 % humidity
- **temperature controlled:** temperature is maintained thermostatically between 15.5 °C and 24 °C (60 °F to 75 °F) with less than 60 % humidity
- **room temperature:** temperature is equal to the ambient temperature of its surroundings; storage area may lack temperature and humidity control methods

Because of the nature of the evidence storage and management process, it is necessary to distinguish temporary storage from long-term storage. In many cases, evidence is stored temporarily because the facility handling it does not have the proper conditions to ensure its integrity for a long time. Temporary storage spaces include medical facilities and hospitals, small property rooms at law enforcement headquarters, or vehicles that transport evidence from the crime scene to long-term evidence management facilities. Throughout this handbook, we define temporary storage to include any location where evidence may be stored for 72 hours or less. Long-term storage is defined as any location where evidence may be stored for more than 72 hours.

Biological evidence stored in a space temporarily has slightly different environmental guidelines than evidence kept in long-term storage because the biological material can degrade over time because of factors that might be less likely to take effect within 72 hours.

The following matrices outline acceptable environments for biological evidence types; however, readers should defer to their crime laboratory's policy. For most situations, the working group strongly urges the use of the guidelines presented here, as they are backed by a comprehensive review of current literature.

Table III-1: Short-Term Storage Conditions Matrix[1]

Type of Evidence[2]	Frozen	Refrigerated	Temperature Controlled	Room Temperature
Liquid Blood[3]	Never	Best	Less than 24 hours	
Urine	Best	Less than 24 hours		
Dry Biological Stained Item[4]			Best	Acceptable
Wet Bloody Items (if cannot be dried)	Best	Acceptable	Less than 24 hours	
Bones	Acceptable		Acceptable	Acceptable
Hair			Best	Acceptable
Swabs with Biological Material		Best (wet)	Best (dried)	
Vaginal Smears			Best	
Feces	Best			
Buccal Swabs			Best	Less than 24 hours

[1] Refer to the previous section on "Packaging Different Forms of Biological Evidence" for best practices on packaging types of evidence.
[2] Sources: *Liquid Blood*—Farkas et al. 1996; Austin et al. 1996; Visvikis, Schlenck, and Maurice 2005; Gino, Robino, and Torre 2000; Ross, Haites, and Kelly 1990. *Urine*—Gino, Robino, and Torre 2000; Prinz, Grellner, and Schmitt 1993; Benecke 2004; Elliott and Peakman 2008. *Dry Biological Stained Items*—Gino, Robino, and Torre 2000; Kobilinsky 1992; Lund and Dissing 2004; Sjöholm, Dillner, and Carlson 2007; Aggarwal, Lang, and Singh 1992. *Wet Bloody Items*—Kanter et al. 1986. *Bones*—Kobilinsky 1992. *Hair*—Steinberg et al. 1997. *Vaginal Smears*—Gill, Jeffreys, and Werrett 1985. *Feces*—Benecke 2004. *Buccal Swabs*—Steinberg et al. 1997; Sigurdson et al. 2006.
[3] See call-out box on Stabilizing Solutions for guidance on vials containing preservatives.
[4] This category includes blood, semen, saliva, and vaginal swabs that are dry.

Table III-2: Long-Term Storage Conditions Matrix[1]

Type of Evidence[2]	Frozen	Refrigerated	Temperature Controlled	Room Temperature
Liquid Blood	Never	Best		
Urine	Best			
Dry Biological Stained Items			Best	
Bones			Best	
Hair			Best	Acceptable
Swabs with Biological Material			Best (dried)	
Vaginal Smears			Best	
Feces	Best			
Buccal Swabs			Best	
DNA Extracts	Best (liquid)	Acceptable (liquid)	Acceptable (dried)	

[1] Refer to the previous section on "Packaging Different Forms of Biological Evidence" for best practices on packaging types of evidence.

[2] Sources: *Liquid Blood*—Farkas et al. 1996; Austin et al. 1996; Visvikis, Schlenck, and Maurice 2005; Gino, Robino, and Torre 2000; Ross, Haites, and Kelly 1990. *Urine*—Gino, Robino, and Torre 2000; Prinz, Grellner, and Schmitt 1993; Benecke 2004. *Dry Biological Stained Items*—Gino, Robino, and Torre 2000; Kobilinsky 1992; Lund and Dissing 2004; Sjöholm, Dillner, and Carlson 2007; Aggarwal, Lang, and Singh 1992; McCabe et al. 1987; Kline et al. 2002. *Bones*—Kobilinsky 1992. *Hair*—Steinberg et al. 1997. *Vaginal Smears*—Gill, Jeffreys, and Werrett 1985. *Feces*—Benecke 2004. *Buccal Swabs*—Steinberg et al. 1997. *DNA Extracts*—Yates, Malcolm, and Read 1989; Dissing, Søndervang, and Lund 2010; Halsall et al. 2008; Kline et al. 2002; Sigurdson et al. 2006.

BIOLOGICAL EVIDENCE PHYSICAL STORAGE CONSIDERATIONS

The challenges related to both temporary and long-term physical storage of biological evidence are extensive. In addition to the storage environment, consideration must be given to the proper equipment, safety, training, and management of personnel handling the evidence in a particular physical location.

WRITTEN POLICY

To ensure all submitting officers are presenting biological evidence in a manner that will meet chain-of-custody requirements and/or that will enable proper forensic testing, everyone must follow the organization's established written policies. These policies can come in at least two forms: (1) a *property and evidence room procedural manual* to ensure the required consistency in the overall process, which is made available to all agency staff members; and (2) *written directives* that contain specific instructions for the storage and packaging of biological evidence, which is available to personnel within the property room or unit and evidence submitters.

Policies must clearly state the responsibilities of any employee submitting evidence into the storage system. Typically, these orders would be in the department's general policies, rules and regulations, or standard operating procedures. These policies should apply to every department employee, not only to property room staff members. Rules related to temporary storage, for example, may include the following:

- All evidence collected by any employee should be submitted into the property and evidence system or laboratory by personal delivery to property room or laboratory staff members or, when they are not available, via a locker that has been designated for the temporary storage of evidence. In addition, the evidence should be submitted before the employee goes off duty for that work shift. All evidence should be properly packaged prior to storage.
- Evidence shall not be stored in any unauthorized location, such as a personal locker, desk, file cabinet, or vehicle.
- The submitting employee shall document that the property or evidence is securely locked in the provided locker or temporary storage location.

The policies also should include appropriate packaging methods based upon the needs of the crime laboratory used by the agency and the needs of its own storage facilities. A packaging directive should include digital photos with brief narrative descriptions to best illustrate the approved methods. It is recommended that the servicing crime laboratory be consulted when an agency is developing a packaging directive. These issues also should be considered for temporary storage. Department packaging directives must inform submitting officers on how various types of evidence should be temporarily stored. These directives must include an appropriate contingency plan for times, such as holiday weekends, to ensure items are not left in temporary storage for longer than 72 hours.

RIGHT OF REFUSAL

Departmental policy should clearly state that any package or documentation that does not meet the standards of the property unit or the crime laboratory will be refused, and the submitting officer shall be notified through normal channels to correct the problem. This principle is known as the "Right of Refusal" (Latta and Bowers 2011).

Recommendation III-5:
Each law enforcement agency should have a policy and procedure for the storage of biological evidence.

Temporary Storage Equipment

Units used for temporary storage can include commercially manufactured evidence lockers, repurposed lockers, rooms and closets, commercial storage containers, commercially manufactured temporary evidence freezers and refrigerators, home refrigerators, and under-the-counter refrigerators.

Figure III-11: Commercially manufactured evidence lockers.

Manufactured Evidence Lockers

These include lockers that can be affixed to a wall and unloaded from the front or units built into the wall that can be unloaded from the property room side. Many of the newer, commercially manufactured evidence lockers are self-locking and do not require keys. That is, they have push-shut locks that engage when the door is closed. Figure III-11 illustrates variously sized lockers that can accommodate different sizes of evidence.

Repurposed Lockers

Lockers that were previously used for other purposes can make suitable storage units. However, if padlocks are used to secure the locker, it is best to secure the locks to the locker to ensure they are not lost and to prevent their removal from the facility (which would allow someone to make a duplicate key). Additionally, it is advisable to not use lockers in which the key is left in the locks, because the key could be removed and copied. As stated previously, it is best to select variously sized lockers that can accommodate different sizes of evidence. (See figure III-12.)

Figure III-12: Repurposed lockers.

Evidence Cages

Biological evidence can come in any size and shape. Therefore, lockers and/or cages should be available for large items.

The security of this type of locker must be as strict as that for any temporary locker, and the contents should be cleared out as quickly as possible. As with any temporary storage evidence locker, the larger cage must contain individually packaged evidence from only one case. (See figure III-13.)

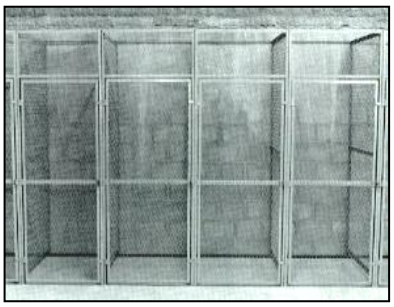


Figure III-13: Evidence cages for large items.

Evidence Rooms

Departments sometimes designate a small room, closet, or cage to which all employees have access (e.g., through a key or electronic system) as the temporary storage area for biological or other evidence. If multiple employees have access to the area, it can compromise the integrity of the evidence; be the basis for a chain-of-custody challenge; or result in evidence being commingled or cross-contaminated, tampered with, or stolen. All evidence must be stored in such a manner so that it cannot be commingled or cross-contaminated and so that no one but the submitting officer and the property officer/custodian has access to the evidence.

Figure III-14: Modified residential refrigerator.

Refrigerators/Freezers

Some biological items of evidence in temporary storage may need to be refrigerated or frozen at the time of collection and while awaiting receipt by property room personnel. For many years, most departments have used typical residential refrigerator units for refrigeration and/or freezing. A significant concern is the security of the biological evidence during the temporary storage. An additional concern is the potential commingling of evidence from various cases when placed in the same refrigerator or freezer.

Figure III-14 depicts a typical residential refrigerator/freezer unit in which one agency installed small lockers with padlocks affixed to the frame. Agencies that adopt this method should ensure that padlocks are secured to the lockers and that the entire locker unit cannot be removed from the unit and taken.

Figure III-15: Under-the-counter refrigerator.

Under-the-Counter Refrigerator/Freezer

Small departments also may use an under-the-counter refrigerator unit and install small lockers to segregate items. The locking units shown in figure III-15 are similar to police gun lockers.

The requirements for temporary storage of refrigerated and frozen items are no different from the requirements for any other evidence (e.g., evidence from multiple cases should never be commingled in the same compartment).

Figure III-16: Commercial evidence refrigerator.

Commercial Evidence Refrigerators/Freezers

Larger departments may use larger refrigeration and/or freezer units that can accommodate substantially more biological evidence submissions. The unit in figure III-16 is segmented with individual lockers and can be installed in the wall to allow property room personnel to remove evidence from the back of the unit. These are pass-through lockers and are available as refrigeration or freezer units.

Temperature Alarms

Given the importance of temperature control when storing biological evidence, the refrigerator/freezer unit should be equipped with an alarm system to indicate if there is a rise in temperature and/or an equipment malfunction. The alarm should be monitored 24 hours per day (e.g., by automatic notification to

the watch commander, officer in charge, the communications center, or other designated personnel).

Long-Term Storage Equipment

Generally, when an item is no longer being stored in temporary storage, it is moved to long-term storage. Given the forensic importance of biological evidence in investigations, prosecutions, and post-conviction DNA testing, evidence must be stored in a manner that protects it from degradation and ensures easy retrieval and identification. Allocating specific areas in the property room for the various types of biological evidence can reduce exposure and injuries while also safeguarding the evidence.

Refrigerators/Freezers

Figures III-17, III-18, and III-19 illustrate the types of refrigerators and freezers typically found in most law enforcement agencies.

Figure III-17 Commercial refrigeration units.

Figure III-18 Labeled residential refrigerator/freezer.

Figure III-19: Commercial walk-in refrigeration unit.

Separating Evidence Types

Property and evidence custodians should consider arranging long-term storage facilities to separate evidence types, such as biohazardous evidence or biohazards ready for destruction. Figure III-20 shows an example of a property room layout that separates biohazards in an area away from and outside the property and evidence facility to enhance security and to enhance protection for staff handling the evidence.

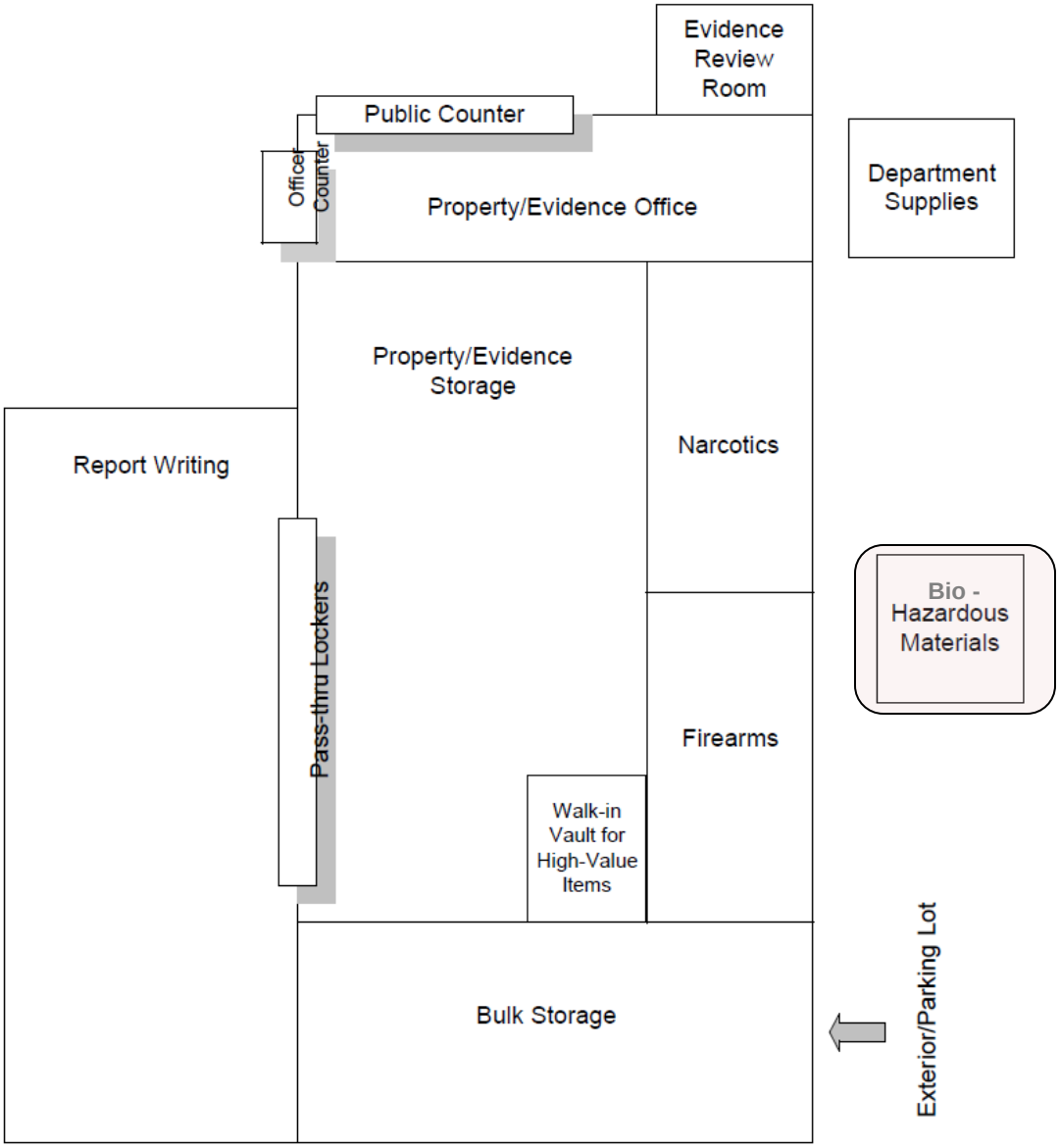


Figure III-20: Sample property/evidence room layout (Latta and Bowers 2011).

IV. TRACKING BIOLOGICAL EVIDENCE CHAIN OF CUSTODY

PURPOSE

This section provides guidance for improving both the chain-of-custody process and the tracking of evidence. This section includes the following:

- guidance on the importance of chain of custody
- best practices for managing and tracking evidence
- a discussion of tracking systems and minimum requirements
- best practices and sample procedures for securing biological evidence
- best practices for evidence management in locations such as a courthouse or hospital
- recommendations on communications and oversight

The justice system requires that proceedings be conducted fairly. A compromised chain of custody can lead to an incorrect verdict. The chain-of-custody record documents the chronological movement, location, and custodial status of physical evidence from the time it is collected through the final disposition. Each person involved with evidence collection, storage, and handling must be able to attest to the condition of an evidence package (e.g., sealed/not sealed or damaged), any changes made to the contents of that package, and the condition of all transfers. Every transfer of evidence between individuals and storage locations must be documented. A break in the chain of custody can be grounds for challenging the admissibility of evidence.

KEY DEFINITION

Chain-of-custody documentation identifies all persons who have had custody of evidence and the places where that evidence has been kept in chronological order from collection to destruction. When done properly, the chain should be an unbroken trail of the collection, custody, control, transfer, and disposition of the evidence. Evidence derived from primary samples—such as DNA extracts from a laboratory analysis—should also have its own chain of custody maintained to the same extent as the original evidence.

Chain-of-custody records may be maintained using a paper-based system, an electronic system, or any combination thereof. An agency that uses a manual system must include a means of tracking the transfer of evidence from person to person or person to storage location. Appendix C contains a sample form to document information that should be obtained by the person collecting the evidence and subsequently recorded for every transfer and transaction in a manual system.

Chain-of-custody documentation should include the following:

- description of the evidence
- unique case identifier (e.g., case number)
- where the evidence was collected
- where the evidence was stored
- who was in possession of the evidence and for what purpose
- what was done to the evidence (e.g., analysis or re-packaging)
- date and time information

Chain-of-custody records must be retained for a period of time, even though the evidence may be destroyed or lost. The specific retention period of the evidence records depends on the type of case and on local, state, and Federal laws.

IMPORTANCE OF CHAIN OF CUSTODY

The chain of custody assists in identifying individuals who may be required to testify regarding the evidence. Failure to maintain proper chain of custody may result in evidence being ruled inadmissible.

Recommendation IV-1:
Personnel who handle evidence should be notified during their training that they might be required to testify about the chain of custody.

MANAGING AND TRACKING EVIDENCE

Scientific and technological advancements have made many more objects available as potential sources of evidence than in the past. The ability to obtain forensic evidence from such sources as blood and other bodily fluids, digital information, and fibers has expanded the pool of evidentiary sources. These evidence categories require special treatment and conditions of storage to prevent deterioration, loss, theft, contamination, mishandling, and improper destruction.

Specific and accurate recordkeeping is essential to knowing the circumstances of the storage, testing, transport, and procedures used in dealing with each category of evidence. Recordkeeping includes chain of custody, security, and quality assurance programs. Records must document how evidence is stored and all persons who have reviewed or had custody of it during storage, such as representatives of the defense, the prosecutor, or law enforcement officials.

The system for tracking evidence must have measures of quality control, must ensure the accuracy of all recordkeeping, and must make it simple to retrieve samples from storage. When selecting a tracking system, an agency should consider that it may need to store the evidence for an extended period of time and that the personnel associated with the case and responsible for the storage and tracking of it may change.

Recommendation IV-2:
Whatever system an agency uses, it should be able to account for the following:

- Chain of custody
  - date/time/identity of individual who collected evidence
  - any person(s) in possession of the evidence at scene and during transport
  - date/time/identity of person who submitted the evidence
  - date/time/identity of property/evidence custodian who accepted/received the evidence
  - date/time/identity of any person to whom the evidence was released and who returned it
- Unique item identification
  - description of item
  - unique number identifier
- Location of item in property/evidence storage room or other external location(s), such as court, a crime laboratory, or another investigative agency
  - location (e.g., shelf number or bin) where evidence is stored
  - date/time/identity of person who stored the evidence

Every item of evidence must have a chain of custody. The tracking system should be able to generate a report accounting for all evidence.

Some cases in the possession of a property and evidence custodian pre-date a labeling system that mirrors the guidance in this handbook. The labeling system for this evidence should be updated as needed on a case-by-case basis.

Each agency should have a standard procedure that governs operation of the property room (Latta and Bowers 2011). This standard procedure should include specific instructions for how and when an inventory should take place as well as who should conduct it.

Recommendation IV-3:
Yearly inventories should be conducted to verify that the evidence in the property room is present and in its specified location.

The removal and return of evidence from storage should also be outlined in an agency's standard operating procedures. The call-out box below is an example of the Los Angeles Police Department's overdue sign-out property procedure.

Los Angeles Police Department (LAPD) Overdue Sign-Out Property Procedure

Within the Los Angeles Police Department, evidence can be signed out on either a temporary or long-term basis. Temporary sign-outs are 7 days and long-term sign-outs are 30 days. Notifications regarding overdue evidence items signed out for temporary or long-term use are handled in a similar fashion and differ only in the time period between notifications (as identified in the chart below). At each interval, notifications are sent to progressively higher management levels within the organization.

Each day, an evidence supervisor queries the property management system for a list of overdue items and makes notifications according to the schedule and format in table IV-1.

Table IV-1: Notification Schedule for Pursuing Overdue Evidence

	First Notice	Second Notice	Third Notice	Fourth Notice
Temporary Sign-Outs	Phone call or email to officer/analyst at 7 days	Email or letter to officer/analyst and his or her commanding officer (CO) at 14 days	Letter to officer/analyst, his or her CO, and the bureau CO via the evidence division's supervising bureau (SB) at 21 days	Letter to officer/analyst, his or her CO, the bureau CO, and the director via the SB at 28 days
Long Term Sign-Outs	Phone call or email to officer/analyst at 30 days	Email or letter to officer/analyst and his or her CO at 60 days	Letter to officer/analyst and the bureau CO via evidence division's SB at 90 days	Letter to officer/analyst, his or her CO, the bureau CO, and the director via the SB at 120 days

It is the responsibility of the various commanding officers to ascertain if the delay is warranted and to send a response to the evidence division or to decide on a course of action for the involved personnel. Each agency must determine its own requirements for return of evidence signed out for investigative purposes.

Recommendation IV-4:
A quality property management system should include a means to identify overdue items or evidence that has not been returned according to the agency's policy.

NUMERICAL IDENTIFIERS FOR CASES AND EVIDENCE ITEMS

Each item of evidence must have a unique identifier, which can take a variety of forms: numeric, alphabetical, a combination of both numbers and letters, or a barcode. Just as with the tracking system, the identification system can be simple or intricate. The key to any such system is that an identifier can never be duplicated and that the item of evidence can be correctly associated with a specific case. An example of such a method would be to assign a unique case number to unique item identifiers for each piece of evidence.

Example 1 uses a case number (2012-12345) plus a consecutive item number.

Case Number – Item Number	Description
2012-12345 – 1	One brown men's shirt
2012-12345 – 2	One pair of men's jeans
2012-12345 – 3	Blood sample from Jane Doe

Example 2 uses the case number (2012-12345) plus the officer's initials (JTL) and consecutive item number.

Case Number – Officer's Initials – Item Number	Description
2012-12345 – JTL – 1	One brown men's shirt
2012-12345 – JTL – 2	One pair of men's jeans
2012-12345 – JTL – 3	Blood sample from Jane Doe

Example 3 uses the case number (2012-12345) plus the officer's employee number (4215) and consecutive item number.

Case Number – Officer's Employee Number – Item Number	Description
2012-12345 – 4215 – 1	One brown men's shirt
2012-12345 – 4215 – 2	One pair of men's jeans
2012-12345 – 4215 – 3	Blood sample from Jane Doe

Example 4 uses a pre-established control number on preprinted, pre-numbered evidence tags/forms that reference the case number. The pre-numbered evidence tags/forms are controlled with a sign-out ledger that carefully tracks each evidence tag/form. The consecutively numbered tags/forms are similar to the management and tracking of traffic citations.

Control Number	Description	Case Number
85123-1	One brown men's shirt	2012-12345
85123-2	One pair of men's jeans	2012-12345
85123-3	Blood sample from Jane Doe	2012-12345

Example 5 uses a computer-generated, consecutive number that is used to document and track the evidence. The computer provides a consecutive number that will never again be generated.

Computer Number	Description	Case Number
789567	One brown men's shirt	2012-12345
789568	One pair of men's jeans	2012-12345
789569	Blood sample from Jane Doe	2012-12345

Recommendation IV-5:
Each agency must develop an identification system so that each item of evidence has a unique identifier. Evidence items created from analysis or separated from the original evidence item should be documented to show the linkage between it and its parent.

KEY CONSIDERATIONS

Location

Tracking the location of the evidence is just as important as identifying the evidence itself. In small agencies, evidence may be stored in only a few lockers, while in larger agencies, there may be many rooms or warehouses, and multiple physical locations. To easily retrieve an individual item of evidence or all of the evidence for a specific case, a tracking system must accurately and consistently provide the location of that evidence. Developing an intuitive scheme for evidence storage makes the system more manageable. Such a scheme may consist of storing like-size containers (e.g., envelopes, bags, and boxes) in areas designed for them and then filing accordingly by the case or tracking number. It is critical that property room personnel update the tracking system with the new information if and when evidence is moved. If not updated, the tracking system will become useless and retrieval of evidence nearly impossible.

Case Status

Another key but often overlooked element to efficient and effective property rooms and tracking systems is the case status. For additional discussion of case status, refer to section V, page 38

Labels

Proper labeling of evidence also is extremely important to a successful and efficient tracking effort. Minimally, the label should include the case identifier, item identifier, type of crime, date/time that the item was collected, where the item was collected, and the name or initials of the person who collected the item. It is also recommended that a description of the item in the package and biohazard labels be included, as appropriate. Any items that contain biological evidence are indicated as such either on the electronic property list or property record.

Many agencies write the labeling information directly on the packaging. Some use adhesive labels with or without barcodes while others may opt for pre-printed packaging. In all cases, the information should be readily available for as long as the evidence is maintained. Therefore, the following points should be considered:

- Are the label and information compatible with the tracking system?
- Is the item uniquely identifiable?
- Is the information on the label legible?
- Will the label adhere to all types of packaging?
- Will extreme temperatures affect the label or its adhesive?

- Is the label format flexible enough to accommodate changes in technology?

If evidence does not bear biological evidence labeling and the presence of biological evidence becomes known, the property and evidence tracking system and label need to be updated to indicate that biological material is contained.

MANAGEMENT AND TRACKING SOFTWARE

Evidence tracking and management software should be able to rapidly identify the following:

- case status
- evidence "out to court" or on temporary release
- evidence "transferred to court" or on permanent release
- evidence pending disposal, release, auction, or diversion
- date/time/identity of responsible person(s) who authorized the release or disposal
- record of final disposition (released, auctioned, destroyed, or diverted), including:
  - specific list of items awaiting destruction
  - name of person authorizing destruction
  - date/time/place/method of destruction and identity of person who destroyed the evidence
  - identity of an independent witness to the destruction
- identity of person who moved the evidence to the pending destruction, auction, release, or diversion storage area with the date, time, and location
- detailed statistical reporting

Additional functions and capabilities to be considered are detailed in appendix A.

Electronic Evidence Management

The increase in the volume of evidence, the budget-imposed decreases in resources available to manage evidence tracking, and the need to track evidence from the crime scene to the courtroom and through final disposition has increased interest and demand for more efficient systems to track and manage evidence. The cost of automated evidence tracking and management software is continually decreasing. In addition, the relatively new introduction of "hosted" solutions (i.e., the evidence tracking and management system is hosted on the vendor's server rather than on a department's server) has enabled many agencies to acquire this level of automation. Thus, evidence tracking and management software is becoming a "must" for an improved evidence processing system.

Management system buyers should consider the following list, in consultation with relevant stakeholders, prior to buying an electronic management to match their process requirements:

- reporting capabilities (including statistics)
- tracking capabilities
- alert mechanisms ("tickler file")
- integration with existing systems
- security
- inventory management
- communication (enhancing data sharing with other criminal justice agencies)

- accessibility (web-based vs. server-based hosted solution)
- usability (ease of use)
- customization (creating a system to meet your needs)
- data conversion
- information technology and hardware support
- training
- appropriate capabilities for the size of agency
- electronic signature capabilities
- cost-benefit analysis for individual features considered (understand value added for each)

AUTOMATED IDENTIFICATION TECHNOLOGIES

Barcoding and radio frequency identification (RFID) are examples of automated systems that aid in the recordkeeping that supports proper chain of custody. Most evidence bagged and tagged at crime scenes is tracked manually by the responding personnel who fill out forms and hand-label the items collected. Many agencies (large and small) use barcode systems to increase the efficiency of tracking evidence, and a few are exploring using RFID technology. Automated systems can also be set up to send alerts to managers when highly sensitive evidence is moved. Some systems maintain photographs of evidence as well. The time-saving benefits and simplified process afforded by an RFID system may be a better value than a barcode system. An RFID system reads many tags simultaneously, whereas a barcode system reads each tag individually.

To obtain more information about the implementation of automated identification technologies, such as barcodes and RFID, the working group engaged a group of consultants to assess the capabilities and technologies available, to review the barriers to their use, and to suggest ways to leverage these systems to increase the forensic evidence visibility. These reports can be found at http://www.nist.gov/oles/.

Recommendation IV-6:
Overall, it is highly recommended that jurisdictions consider automated identification technologies to enhance chain-of-custody recordkeeping and tracking, to facilitate inventories, and to allow for efficient retrieval of evidence.

PROPERTY ROOM MANAGEMENT SOFTWARE

Many law enforcement agencies have purchased property room management software systems that coordinate the intake and storage of evidence in a property room but are not designed to track the return of evidence once it is signed out. This shortcoming can be corrected by using a "tickler" or "flagging" system that indicates when evidence has not been returned by a predetermined time.

LABORATORY INFORMATION MANAGEMENT SYSTEMS

Laboratory Information Management Systems (LIMS) that provide various capabilities for one or more forensic disciplines are available. Since the scope and cost of LIMS vary greatly, the agency or group of agencies implementing LIMS should involve all stakeholders to identify the minimum processes and abilities that will meet everyone's needs. Typically, LIMS cost hundreds of thousands of dollars and are designed to integrate with other systems to manage laboratory instruments and data.

KEY TRACKING SYSTEM CONSIDERATIONS

Level of Integration

There are very few integrated evidence tracking systems available today that will track evidence from the point of collection through storage, processing, and presentation in the courtroom. Many agencies use more than one system to track evidence at different points in the process. The technology is changing rapidly, so considerations of factors such as integration with other systems and methods of accessing data—including web-based platforms—can influence a purchase decision. Some systems can be customized to meet an agency's needs, such as tracking only certain types of data or recording data in a specific format.

Workflow

When choosing a tracking system, agencies must also consider their workflows. Important elements of forensic workflows include maintaining chain of custody, identifying all the data related to a case, and parent/child tracking (e.g., the extraction of a stain to obtain DNA). The systems available today have various capabilities and approaches to providing these capabilities.

Report generation

The final important consideration when selecting an evidence tracking and management system is its ability to generate management reports. A system must have the ability to search, run queries, and print and/or email the resulting data. For example, the ability to run an inventory report for each year in a 5-year span could provide trend analysis that otherwise might be missed. The ability of the end-user, the property room staff members, laboratory staff members, or information technology staff members to customize system reports is a benefit of the more robust and capable systems.

SUMMARY OF TRACKING OPTIONS

There are many evidence tracking systems available, but currently they are focused on specific parts of the process. When transferring from manual to electronic tracking, agencies should procure or develop a system that can manage the entire process—from crime scene to disposition—and not just a portion of the process. Many agencies currently use a manual tracking system for one or more parts of the forensic process and must determine what system is best for them when they consider a new, single system for the entire process using technologies such as barcodes or RFID chips.

As the cost of electronic tracking technologies drops and as integration between systems improves, many agencies that currently manage the forensic process manually will be able to justify purchasing more efficient electronic systems. Prior to procuring new systems, property and evidence custodians, along with other relevant stakeholders, should properly assess the agency's needs.

Recommendation IV-7:
Experienced property and evidence custodian personnel should be included in the procurement of any software and/or hardware that affects the tracking and management of evidence. Agencies need to review existing procedures, to conduct a needs assessment, to develop requirements, and to evaluate technology performance prior to procuring a system. Proper IT support should also be available.

Security

Any location used to retain or store evidence must be secured to prevent tampering, contamination, theft, or contact with unauthorized people. Space should be redesigned as required and security devices must be used.

Recommendation IV-8:
Access to the evidence holding facility should be limited to those who are authorized to remove and return the evidence and to those who are authorized to hand over the evidence to others authorized to receive it. Each evidence custodian should have an appropriate background check prior to employment or assignment to the unit.

When evidence is transferred from one entity to another, public or private, it should either be hand carried or sent via a carrier that maintains an internal, detailed chain of custody with confirmed delivery. Packaged evidence being transferred must be sealed to ensure its integrity. If evidence is opened for examination in a laboratory, during court proceedings, or for any other reason, it must be resealed prior to storing or transferring to another entity. Entities handling biological evidence should establish procedures that include steps to take if evidence is received unsealed. By establishing and following clear and concise procedures, the integrity of the evidence and the chain of custody will be kept intact.

Recommendation IV-9:
Each entity that can potentially hold biological evidence, including courts, should have (1) written procedures detailing the steps and documentation required when evidence is opened, resealed, and transferred; (2) secure, access-controlled locations to store the evidence; (3) trained and authorized personnel handling the evidence; and (4) written policies outlining chain-of-custody and storage requirements (length of retention, conditions, and disposition requirements) for biological evidence.

Courthouse Chain-of-Custody Procedures

There are thousands of courthouses and courtrooms in the United States, and their procedures for tracking and maintaining a chain of custody and storing evidence vary. Because of the need to retain evidence post-trial, it is critical that courts follow guidelines for the storage of evidence. Evidence relevant to a proceeding may be stored and brought to the courtroom from an outside facility, a central property room within the courthouse, or a location designated by a judge. The evidence can be returned to any of these locations when it is no longer needed in the courtroom or when the proceedings are over for the session (Hampikian, West, and Akselrod 2011; Goray, van Oorschot, and Mitchell 2012; Daly, Murphy, and McDermott 2012; Lee, Crouse, and Kline 2010).

When evidence is moved to the courthouse from another location, the courthouse should follow basic chain-of-custody requirements. These guidelines would apply during and between evidence viewings, pre-trial consultations, court proceedings, jury deliberations, and appellate and post-conviction reviews (i.e., anytime an evidence package is opened).

Chain-of-custody records should include a detailed accounting of the following:

- all movements of the evidence package
- any changes to the evidence package, such as opening for a legal proceeding (this should be reflected in the court transcripts)
- the name of the person who has custody of the evidence
- the name of the person to whom the evidence was given
- the purpose of the delivery
- what happened when the evidence arrived at its destination
- the name of the person who returned the evidence to its storage location

After proceedings, including hearings, trial, and jury deliberations, evidence could be stored permanently at a courthouse; however, it is preferable to keep it there only temporarily until court proceedings are completed and then to return it to the submitting agency for disposition.

Guidance on Possible Scenarios
A record of how the evidence package is handled in the courtroom should be reflected in the court transcript. This would include any jury requests to see evidence that would result in changes to the packaging, such as unsealing and resealing. When possible and appropriate, exhibit numbers and case numbers should be cross-referenced in court proceedings.

It is important to have designated locations for evidence storage, whether it is one centralized site for all the judges in a courthouse or a specific area for each judge. A trained court clerk or bailiff for all the judges or separate clerks for individual judges should safeguard the evidence and keep records using uniform procedures and paperwork. The supervising officer should oversee a courthouse's internal chain-of-custody system.

Procedures vary and lines of responsibility are not always clear regarding the repackaging, storage, and preservation of biological evidence after a verdict is rendered or a plea is entered. In some jurisdictions, the evidence is returned to the party who introduced it, while in others, it is returned to a central property clerk's facility.

It is essential to carefully repackage and store evidence once trial court proceedings are completed, as the evidence may be requested again if there are appeals.

To ensure the preservation of evidence post-conviction, it should be properly repackaged and returned as soon as possible to a designated storage site. The documentation accompanying the evidence package should be updated to record the transport back to storage.

Hospital/Medical Facilities Chain of Custody Procedures
Biological evidence should be collected whenever there is the possibility that it may have bearing on a patient's case (e.g., sexual assault, domestic violence, or car accident involving drugs or alcohol) in accordance with state and local laws. Hospitals should develop policies regarding the storage of biological evidence because the hospital and the individual collecting the evidence are involved in the chain of custody. The individual who collects the evidence from the patient is responsible for initiating the chain of custody process. According to the hospital accrediting body, Joint Commission on Accreditation of Healthcare Organizations, hospital staff members who are trained to identify abused patients should also know the procedures for preserving evidence that will support any future legal action.

Recommendation IV-10:
The collection of evidence at the hospital or medical facility establishes the first link in the chain of custody. Biological evidence should be collected by a properly trained medical professional and an inventory of each item should be recorded.

Guidance on Possible Scenarios
If no law enforcement report is made at the time of the hospital/clinic visit, medical professionals should offer to collect evidence from a patient and to store the evidence until the patient or other appropriate person can decide if a police report will be filed. In many cases, there is no specified time period for

which the facility will store the evidence. It is recommended that hospitals establish a specified time period for storage of biological evidence in consultation with the local prosecutor and/or police jurisdiction.

If a law enforcement official does not request the evidence within the specified timeframe, the hospital should contact the patient and seek law enforcement agency authorization prior to destroying evidence. The disposition of the evidence should be documented in the patient file.

If the patient decides to file a report with a law enforcement representative, the medical facility may turn the evidence over directly to law enforcement. In this case, the law enforcement representative is required to sign the chain-of-custody form when taking custody of the evidence from a medical professional at the facility where the evidence was collected.

If the patient has made a report and a law enforcement representative is not available to take custody of evidence, the medical facility can continue to store it or contact the relevant law enforcement agency to request that they handle the storage.

When stored on hospital/clinic premises, dry evidence should be kept in a locked cabinet. It is neither necessary nor helpful to refrigerate dry evidence as stated in the guidance in section II. Wet evidence (e.g., whole blood and urine) should be stored in a locked refrigerator to which only a limited number of authorized persons have access. Those with access can include sexual assault nurse examiners, sexual assault forensic examiners, and the charge nurse or designated supervisor at the medical facility. Evidence should be stored in a secure location requiring a signature for access and removal.

It is not necessary for the same medical professional who collected the evidence to release it to law enforcement. The collector should document that he or she placed the evidence in a locked storage area. When a law enforcement representative comes to retrieve the evidence, the person at the medical facility who turns it over must indicate on the chain-of-custody form that he or she removed the evidence from storage and gave it to law enforcement. The law enforcement recipient also must sign for the evidence and note the time and date of the evidence transfer.

COMMUNICATION

Open, honest, and continuous communication must be maintained among all of the individuals involved in a chain of custody. Stakeholders should be informed of the following: the location of individual pieces of evidence, the status of each case as it pertains to the need for continued storage of evidence, and a consistent case identifier that all entities use and understand.

Recommendation IV-11:
Jurisdictions should work to assess and improve communications regarding forensic evidence by developing consistent procedures and packaging guidelines and by integrating evidence-tracking systems across locations.

OVERSIGHT

To ensure the integrity of recordkeeping and to satisfy chain-of-custody requirements for all biological evidence, jurisdictions should assign a custodian with responsibility for preventing loss, premature destruction, or preventable degradation. The custodian should regularly audit property rooms to ensure adequate security measures are in place, proper evidence-handling procedures are practiced, and proper recordkeeping procedures are followed.

Recommendation IV-12:
Agencies responsible for maintaining biological evidence should assign an appropriate custodian of the evidence to ensure compliance with the recommendations in this report.

V. BIOLOGICAL EVIDENCE DISPOSITION

PURPOSE

This section addresses the proper and efficient disposition of biological evidence and includes the following:

- best practices for the process of evidence disposition
- key elements to include in departmental manuals or polices regarding biological evidence disposition

WHAT IS DISPOSITION?

Disposition is the ongoing process of determining what to do with evidence in a case. The process may entail retention and disposal, destruction, auction, diversion to governmental agency use, or return to owner. Case disposition includes the determination that the legal process is concluded, any further case investigation is completed, statutes of limitation have run for open cases, or no charges will be filed. In some cases, this review process may be performed numerous times. A final evidence disposition is the permanent removal of evidence from inventory after the determination that the evidence is no longer required for any reason. The disposition process is accomplished by anyone responsible for the final determination of the need to retain evidence.

This section discusses general practical considerations for the destruction, auction, or return to owner of biological evidence once the final determination is made that the evidence is no longer needed for any further purpose.

Regardless of the age of the evidence, property and evidence custodians should follow these guidelines prior to the final disposition.

STATUTORY REQUIREMENTS

Most states have laws that provide guidance for the disposition process of biological evidence (see appendix B), but these laws vary widely. This process may include getting a court order, receiving district attorney approval, notifying the law enforcement agency, and/or notifying the defendant/defense attorney or attorneys of record. Before any disposition, it is important to comply with existing laws, policies, regulations, and procedures. Specific detailed guidelines may be available in the applicable jurisdiction or through local, state, and international property organizations.

BEGINNING THE PROCESS

The disposition process can begin in several ways: (1) following adjudication, when the evidence custodian or investigator confirms that all judicial proceedings in the case are completed, (2) when an inventory check identifies evidence that may be appropriate for disposition, and/or (3) when a notification of destruction is sent per statutory requirements.

Some evidence in the possession of a property and evidence custodian will pre-date a labeling system that mirrors the guidance in this handbook. The determination of what contains biological evidence in these circumstances should be made on a case-by-case basis and in accordance with the state policy/statute. Property and evidence custodians are responsible for locating this evidence if further identification is needed.

A release-of-liability document should accompany the release of evidence to the lawful owner. This not only alerts the person receiving the evidence that there is biological material present, but it also may

mitigate the risk of liability. Each agency's legal counsel can provide further guidance. This disclaimer can be included on the property receipt.

Each agency should develop a method to routinely review property for disposition. Department policies and procedures need to address the elements of disposition of evidence.

NOTIFICATION MECHANISMS

When possible, every effort should be made to notify all relevant parties during the disposition process. Almost all states that have evidence retention statutes also have mechanisms that authorize destruction prior to the regularly scheduled timeframe. (See guidance for establishing evidence retention requirements in section 1, table 1-2.) These provisions bring all parties' attention to the existence of the evidence and the question of the continued need to retain the evidence. These laws usually require that the holding agency provide advance notice to the court and all relevant parties (i.e., the prosecutor, the defense attorney, and the defendant) and afford an opportunity for the parties to request continued retention of the evidence or to consent to the early disposition of the evidence.

CONFIRMING CASE STATUS

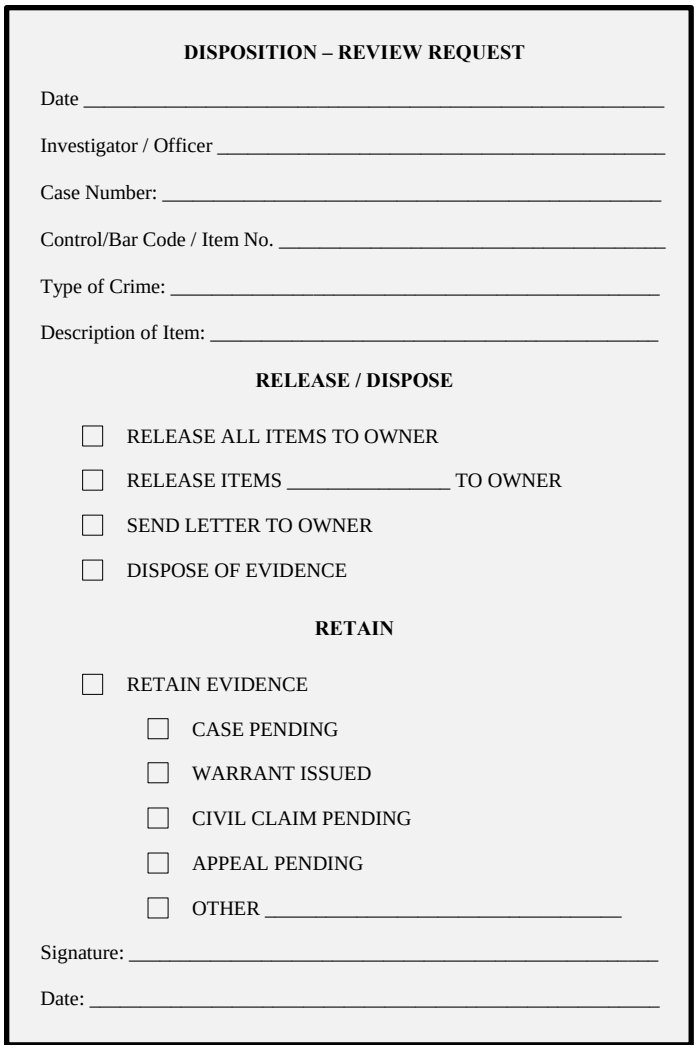
Once it is determined that evidence is no longer needed for any further prosecution or post-conviction proceeding, each agency must act in accordance with its state's preservation of evidence statutes. Some agencies can obtain criminal justice information electronically following the court process. Other holding agencies manually investigate to facilitate the flow of information to begin the disposition process. It is critical that the holding agency determine the status of the case and the requirements of the local evidence retention law prior to the disposition of evidence. Property custodians/evidence personnel may receive notification and authorization for release or destruction in any of the following ways:

- The district attorney's office forwards a case disposition to close, suspend, or reject a case or to return property.
- The court sends disposition on completed cases.
- The property owner inquires about the disposition of his or her property.
- The investigating officer authorizes release or disposal by making a note to that effect on the appropriate property form(s).
- A court order is received ordering release of the property.
- The property, or an accumulation of property, poses a storage problem or hazard, and disposal is ordered by the agency head.
- Department policy allows for property custodians to disposition old items according to the statute of limitations in the Penal Code.

Recommendation V-1:
Case status reviews should be conducted at least once a year to determine eligibility for disposition of evidence containing biological evidence.

GETTING FINAL SIGN OFF

The agency's investigations unit and/or the prosecuting agency should be the primary decision maker(s) to determine that evidence is no longer needed in accordance with relevant state laws. Sound internal controls should always include the investigating officer's input into this decision. Figure V-1 is an example of a form that can be used to determine method of evidence disposition.



DISPOSITION – REVIEW REQUEST

Date _____

Investigator / Officer _____

Case Number: _____

Control/Bar Code / Item No. _____

Type of Crime: _____

Description of Item: _____

RELEASE / DISPOSE

☐ RELEASE ALL ITEMS TO OWNER

☐ RELEASE ITEMS _____ TO OWNER

☐ SEND LETTER TO OWNER

☐ DISPOSE OF EVIDENCE

RETAIN

☐ RETAIN EVIDENCE

- ☐ CASE PENDING
- ☐ WARRANT ISSUED
- ☐ CIVIL CLAIM PENDING
- ☐ APPEAL PENDING
- ☐ OTHER _____

Signature: _____

Date: _____

Figure V-1: Example of a final disposition review request form (Latta and Bowers 2011).

Recommendation V-2:
Each agency should designate those authorized to sign off on the disposition of biological evidence within a jurisdiction.

FINAL DISPOSITION OF BIOLOGICAL EVIDENCE

Each agency must safeguard and eventually destroy or determine the final placement of all property that comes into its possession. Evidence should undergo final disposition when it is no longer needed; otherwise, property rooms will become overcrowded. Final disposition decisions include diverting, auctioning, physically destroying, or returning the evidence to its rightful owner. When evidence has been seized by a search warrant, a court order may be required prior to final disposition. The final disposition process should document when and how evidence is handled so that any future questions can be answered. Section I offers more detailed guidance on evidence retention rules.

Recommendation V-3:
Timely and proper disposition of evidence is of critical importance in the duties of the property custodian. All property in the care of an agency should be returned to its rightful owner or dispositioned according to law or agency policy.

The checklist below is specific to property and evidence custodians.

Property Custodian Checklist for the Final Disposition of Biological Evidence

- ✓ Review cases on a regular basis using a "tickler" system, evidence case tracking system, or any of the notification/authorization mechanisms discussed previously that may initiate the disposition process.
- ✓ Contact the investigator or court to determine case status. The investigator or district attorney should review the case status and determine if evidence is no longer required. Ideally, case investigators should initiate contact with property custodians who have conviction or case information after consulting with the prosecution or district attorney's office.
- ✓ Get final sign-off from the designated authority to disposition evidence. This authority is determined by the agency's policies and procedures.
- ✓ Ensure compliance with any statutes, policies, and procedures that may require court orders or notifications before disposal.
    - Private property organizations and state property organizations can offer assistance in preparing policies and can provide information on current legal requirements for property personnel.
    - Be aware of cases with special circumstances that may extend the holding period, including civil lawsuits, death-penalty cases, and fatal accidents.
    - Consult applicable post-conviction DNA testing statutes.
- ✓ Ensure that final disposition is compliant with state and Federal health and safety laws.
    - If a victim elects to have property returned, return it once it is no longer required by the agency.
    - Verify identification of the owner before releasing property. Adhere to agency policies related to determining ownership.
    - Auction or divert for department use according to law any abandoned or unclaimed items that are of value.
    - If necessary, update or remove from pertinent state or national database systems following disposition any serialized property (items that have individual serial numbers, such as guns, computers, cellular telephones, and vehicles).

Figure V-2 describes steps that agencies should include in evidence disposition, including proper notification, location, and updating of evidence management system records.

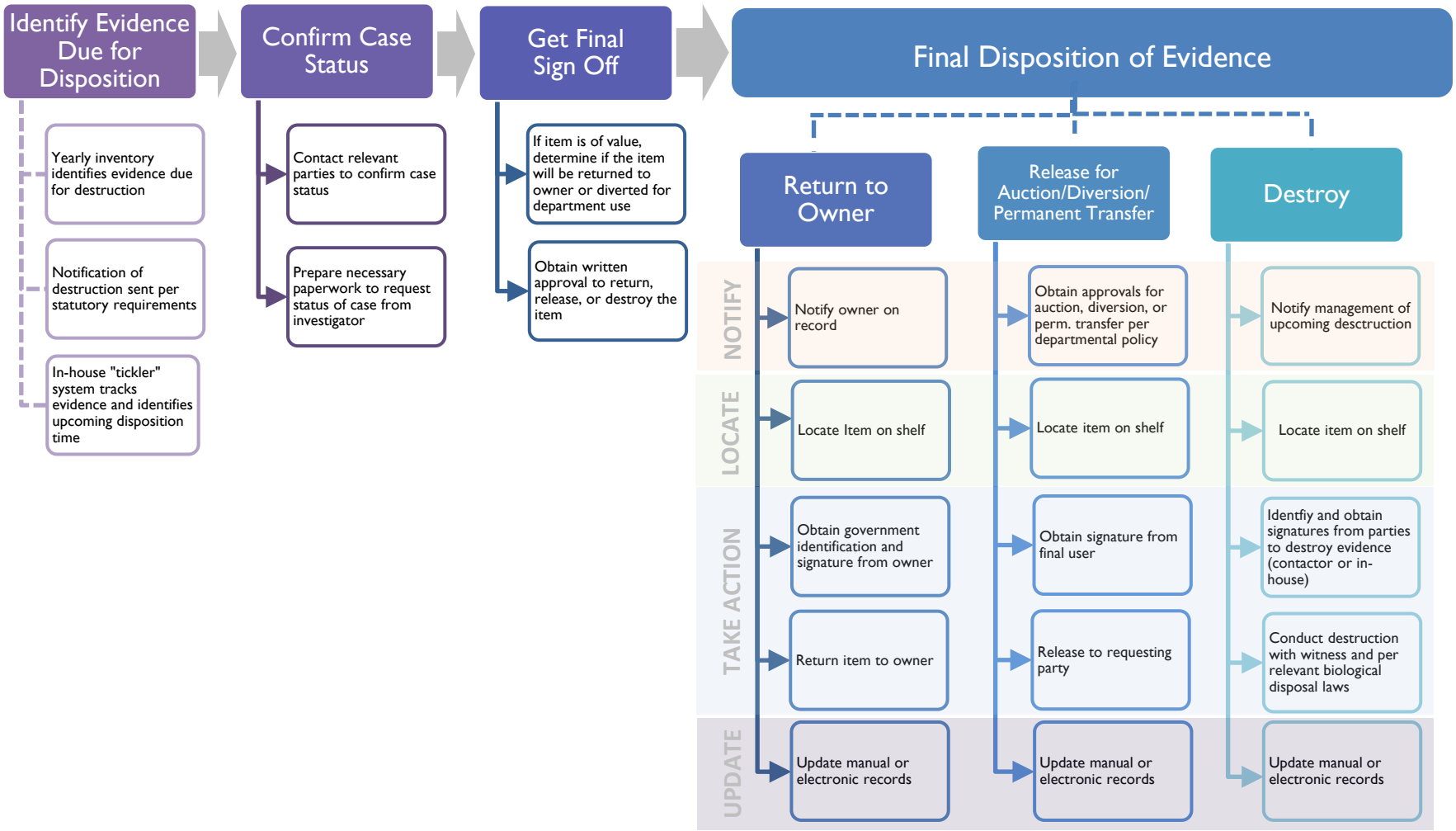


Figure V-2: Summary of process steps involved in biological evidence disposition.

SAFE DISPOSAL OF BIOHAZARDS

Biological evidence poses a hazard for health and safety in the property workplace. Proper handling and disposal methods are vital to maintaining a safe environment. Figure V-3 shows an example of a biohazard disposal bag. Items to be dispositioned must be removed from the active inventory and staged in an area for "bio items" that are scheduled for "destruction" and appropriate disposal. Some states and localities have requirements for biological material disposal. Check with the local crime laboratory for further information. Section II offers more information on biohazard destruction.

Figure V-3: Biohazard disposal bag.

POLICIES/PROCEDURES

The most important task associated with the disposition of biological evidence is to have comprehensive policies and procedures in place to manage evidence disposition.

Table V-1: Recommendation for Property Manual Standard Operating Procedures
(Latta and Bowers 2011)

Recommendations for Property Manual Standard Operating Procedures	
Responsibilities	• Define the property custodian's task and responsibilities in the disposition process • Define the investigator's task and responsibilities in the disposition process • Define other persons in the process, such as a court liaison officer
Research	• Define who is responsible for researching the status of the case • Define the investigator's role in the review and disposition process • Define the prosecutor's role in the review and disposition process
Sign-Off Process	• Define who has authority to sign off property for disposal
Special Requirements	• Define any special handling requirements for cases with firearms, currency, or controlled substances
Time Limits for Review	• Define the time for the review, such as statute of limitations, court disposition sheets, and accelerated reviews
Notification Methods to Investigator	• Define the methods to be used to notify investigator, such as email or formal disposition request forms
Time Limits for Return	• Define the amount of time the investigator has to return the review forms • Define the role supervisors have in the return process
Retention Guidelines	• Define reasons an investigator would need to retain evidence (e.g., warrant issued, case pending, civil case pending, appeal, or statutory requirements)

Recommendation V-4:
An evidence disposition process should be part of each agency's policy and procedures.

SUMMARY OF RECOMMENDATIONS

SECTION I: RETAINING BIOLOGICAL EVIDENCE

Recommendation I-1: All persons who have responsibility for the intake and/or storage and disposition of biological evidence should take online, in-classroom, or other forms of training on evidence management.

Recommendation I-2: Prior to a property and evidence custodian accepting biological evidence, it should be clearly marked and labeled by the submitter as biological evidence, allowing it to be tracked within the evidence management system and stored appropriately from intake through disposition.

Recommendation I-3: Property and evidence custodians should consult with investigators, laboratory analysts, and, when appropriate, prosecutors to determine whether only representative sample(s) should be retained in situations in which samples are too large or too costly to store. Property and evidence custodians, investigators, laboratory analysts, and prosecutors should discuss situations in which prosecutors should be consulted. These decisions should not be made exclusively by property and evidence custodians.

Recommendation I-4: Biological evidence that is collected in the course of an open investigation should be retained indefinitely for homicides and, at a minimum, for the length of the statute of limitations for all other offenses.

Recommendation I-5: A communications link should be established between investigators, prosecutors, and the responsible custodial agency to be able to determine if charges are filed.

Recommendation I-6: Biological evidence should be preserved through, at a minimum, the period of incarceration in the following crime categories, as defined in NIBRS, regardless of whether or not a plea was obtained: homicides, sexual assault offenses, assaults, kidnapping/abductions, and robberies. For all other Group A and B offenses, biological evidence may be disposed of upon receipt of authorizations.

Recommendation I-7: After it is determined that charges will not be sought or filed, evidence, including any biological evidence, need not be retained unless destruction is prohibited by statute.

SECTION III: PACKAGING AND STORING BIOLOGICAL EVIDENCE

Recommendation III-1: In tandem with state or local legislatures, managers in law enforcement and relevant stakeholders should advocate for additional resources and funding to ensure the integrity of biological evidence through prioritizing the packaging, storage, maintenance, and security of the evidence in their jurisdictions.

Recommendation III-2: To optimize a sterile environment without commingling items of evidence, property and evidence management should establish a policy or procedure requiring documentation of who is responsible for cleaning the drying area, how the area is to be cleaned and decontaminated, how the decontamination process is documented, and how long the documentation is to be retained.

Recommendation III-3: Each law enforcement agency should develop a protocol for standardizing evidence packaging materials and customizing shelving to allow for more efficient retrieval of evidence stored in property rooms.

Recommendation III-4: For the safety of employees, agencies should always attempt to segregate types of biohazardous evidence, such as liquid evidence, tissue samples, and extracted DNA, in one centralized location for easy identification and safe storage.

Recommendation III-5: Each law enforcement agency should have a policy and procedure for the storage of biological evidence.

SECTION IV: TRACKING BIOLOGICAL EVIDENCE CHAIN OF CUSTODY

Recommendation IV-1: Personnel who handle evidence should be notified during their training that they might be required to testify about the chain of custody.

Recommendation IV-2: Whatever system an agency uses, it should be able to account for the following:

- Chain of custody
  - date/time/identity of individual who collected evidence
  - any person(s) in possession of the evidence at scene and during transport
  - date/time/identity of person who submitted the evidence
  - date/time/identity of property/evidence custodian who accepted/received the evidence
  - date/time/identity of any person to whom the evidence was released and who returned it
- Unique item identification
  - description of item
  - unique number identifier
- Location of item in property/evidence storage room or other external location(s), such as court, a crime laboratory, or another investigative agency
  - location (e.g., shelf number or bin) where evidence is stored
  - date/time/identity of person who stored the evidence

Recommendation IV-3: Yearly inventories should be conducted to verify that the evidence in the property room is present and in its specified location.

Recommendation IV-4: A quality property management system should include a means to identify overdue items or evidence that has not been returned according to the agency's policy.

Recommendation IV-5: Each agency must develop an identification system so that each item of evidence has a unique identifier. Evidence items created from analysis or separated from the original evidence item should be documented to show the linkage between it and its parent.

Recommendation IV-6: Overall, it is highly recommended that jurisdictions consider automated identification technologies to enhance chain-of-custody recordkeeping and tracking, to facilitate inventories, and to allow for efficient retrieval of evidence.

Recommendation IV-7: Experienced property and evidence custodian personnel should be included in the procurement of any software and/or hardware that affects the tracking and management of evidence. Agencies need to review existing procedures, to conduct a needs assessment, to develop requirements, and to evaluate technology performance prior to procuring a system. Proper IT support should also be available.

Recommendation IV-8: Access to the evidence holding facility should be limited to those who are authorized to remove and return the evidence and to those who are authorized to hand over the evidence to others authorized to receive it. Each evidence custodian should have an applicable background check prior to employment or assignment to the unit.

Recommendation IV-9: Each entity that can potentially hold biological evidence, including courts, should have (1) written procedures detailing the steps and documentation required when evidence is opened, resealed, and transferred; (2) secure, access-controlled locations to store the evidence; (3) trained and authorized personnel handling the evidence; and (4) written policies outlining chain-of-custody and storage requirements (length of retention, conditions, and disposition requirements) for biological evidence.

Recommendation IV-10: The collection of evidence at the hospital or medical facility establishes the first link in the chain of custody. Biological evidence should be collected by a properly trained medical professional and an inventory of each item should be recorded.

Recommendation IV-11: Jurisdictions should work to assess and improve communications regarding forensic evidence by developing consistent procedures and packaging guidelines and by integrating evidence-tracking systems across locations.

Recommendation IV-12: Agencies responsible for maintaining biological evidence should assign an appropriate custodian of the evidence to ensure compliance with the recommendations in this report.

SECTION V: BIOLOGICAL EVIDENCE DISPOSITION

Recommendation V-1: Case status reviews should be conducted at least once a year to determine eligibility for disposition of evidence containing biological evidence.

Recommendation V-2: Each agency should designate those authorized to sign off on the disposition of biological evidence within a jurisdiction.

Recommendation V-3: Timely and proper disposition of evidence is of critical importance in the duties of the property custodian. All property in the care of an agency should be returned to its rightful owner or dispositioned according to law or agency policy.

Recommendation V-4: An evidence disposition process should be part of each agency's policy and procedures.

APPENDIX A: EVIDENCE TRACKING AND MANAGEMENT SYSTEMS: FUNCTIONS, CAPABILITIES, AND REPORTS TO BE CONSIDERED WHEN ACQUIRING A NEW SYSTEM

The table below is adapted from *Property and Evidence by the Book* (Latta and Bowers 2011).

EVIDENCE TRACKING AND MANAGEMENT SYSTEMS Functions, Capabilities, Reports, etc. To be considered when acquiring a new system		
Item #	**Item**	**Comment**
1	**HARDWARE/OPERATING SYSTEM**	
1.1	Browser-based system	Does the operating system use standard browsers?
1.2	Export features	Does the system provide easy export of data?
1.3	Maximum number of items	Are there an unlimited number of items that can be entered and tracked by the system?
1.4	Number of users	How many users does the system permit (e.g., an unlimited number of users)?
1.5	Type of server used by the provider	What type of server does the system provider use (e.g., SQL, Oracle)?
1.6	Server—robust and crash resistant	What is the history of the type of server that is being used by the system provider?
1.7	Data backup	Is the data from your system automatically backed up? If not, is backup a simple task?
1.8	Default event process for crashes	What is the default function if the system crashes?
1.9	User friendliness of the system	Is the functionality, such as report generation, user friendly for the property and evidence custodian, property manager, etc.?
2.0	**INSTALLATION AND INTEGRATION**	
2.1	Company history	How many years has the system provider been offering this type of system?
2.2	Number of clients	How many law enforcement agencies are currently using this system for property and evidence tracking and management?
2.3	Implementation: modular or entire system	When the system is being implemented, is it done one module at a time, or is the entire system implemented simultaneously?

2.4	Commercial Off the Shelf (COTS) system	Is this available as a COTS system?
2.5	INTEGRATIONS	
2.5.1	Integration with Laboratory Information Management System (LIMS)	Can this system be integrated with LIMS?
2.5.2	History of integration with LIMS	How many agencies have integrated the provider's system with LIMS?
2.5.3	Integration with a Records Management System (RMS)	Can this system be integrated with an RMS?
2.5.4	History of integration with RMS	How many agencies have integrated the provider's system with an RMS?
2.5.5	Microsoft Word and Excel integration	Does the system integrate with both Microsoft Word and Excel for report generation, correspondence, etc.?
3.0	**REPORTING FUNCTIONALITY**	
3.1	Standard and user-customized reports	Can the system produce standard and user-customized reports for both internal management and external reporting purposes?
3.1.1	Chain-of-custody reports	
3.1.2	Auction reports	
3.1.3	Letters to owners of property	
3.1.4	Inventory reports	
3.1.5	Firearms staged for destruction	Awaiting destruction
3.1.5.1	Firearms destruction list	After the actual destruction
3.1.6	Narcotics staged for destruction	Awaiting destruction
3.1.6.1	Narcotics destruction list	After the actual destruction
3.1.9	Currency ready for transfer	Awaiting transfer to bank or other financial institution
3.1.9.1	Currency transfer list	After the actual transfer
3.2	Crystal reports	Is the system capable of producing crystal reports?
3.3	Disposition notices	Can the system produce disposition notices (i.e., documents sent to an investigator who is authorized to dispose)?
3.3.1	Disposition notices—user-configurable queries	Can the disposition notices be generated based on user-configurable queries?
3.4	TICKLER FILES—Customizable	Can the system create user-customizable tickler files?

3.4.1	Items pending destruction reports	
3.4.2	Items pending auction reports	
3.4.3	Currency pending transfer to bank or other financial institution	
3.4.4	Property awaiting owner pick-up	
3.4.5	Items out to the crime laboratory	
3.4.6	Items out to court	
3.4.7	Items out to investigator/officer	
3.4.8	Items out to other agency	
3.5	OTHER REPORTS	
3.5.1	National Crime Information Center (NCIC) searches	Can the system conduct NCIC searches and maintain an audit trail of all searches?
3.5.2	Currency accounting ledger	Will the system record currency accounting actions, such as intake, current balance, and transfer?
3.5.3	Inventory history	Will the system maintain an inventory history, including the date, conducted by, total items, total firearms, total narcotics, total currency on hand, and "exception" (also known as "discrepancy") reports?
3.5.4	User-definable and editable fields	Does the system enable users to define and/or edit fields, such as creating a storage location of "guns ready for destruction," "narcotics ready for destruction," and "currency ready for transfer"? Does the system enable the user to customize by including crime code numbers so that the entry of a number will automatically convert it to the name of the crime category? (For example, a department in California enters "187" and the system automatically converts that to read "homicide" for the category field.)
4.0	**TRACKING**	
4.1	Create a "hold" for an item	Can the user place a "hold" on an item based on a pending appeal process and/or the request of an investigator or prosecutor?
4.2	Link item to other cases	Can the user link a single item of evidence to multiple cases to ensure that it is not disposed of until all related cases are closed and disposition is received?

4.3	Attach digital image	Can the system attach digital images and/or electronic reports (photos, reports, signature captures, Government ID scans, etc.) to the record for the item?
4.4	Global move (batch move)	Can multiple items be moved within the system from one location to another location (e.g., from the "pending destruction" location to the final location of "destroyed")?
5.0	**INVENTORIES AND AUDITS**	
5.1	Use of portable barcode scanners	Does the system enable an inventory to be conducted using barcodes and barcode scanners?
5.2	Use of Radio Frequency Identification Devices (RFID)	Does the system enable an inventory to be conducted using RFID technology?
5.3	Exception reports	Are "exception" (also known as "discrepancy") reports generated based on the barcode or RFID scan of the inventory in individual and/or multiple storage locations?
5.4	Inventory lists by location	Can the user create and print inventory lists of items by individual storage locations within the property room/warehouse?
5.5	Audit lists	Can the system generate a list of randomly selected items for an audit?
6.0	**SECURITY**	
6.1	Access control to tracking system	Can the user customize security access and/or functions to individuals (e.g., "read only" access, "restricted access to certain fields of data," or "full access to system")?
6.2	Encryption	If the service provider is a hosted solution (i.e., the provider maintains all of the data on its servers), is there Secure Socket Layer (SSL) encryption and security?
7.0	**BARCODES, RFID, RELATED ITEMS**	
7.1	Use of barcodes—tracking	Does the system use barcodes for tracking?
7.1.1	Use of barcodes—inventory	Does the system use barcodes for inventory?
7.1.2	Use of barcodes—audits	Does the system use barcodes for audits?
7.2	Customized item labels with barcodes	Can the user create customized packaging labels that contain desired information about the item as well as a barcode?
7.3	Thermal printers	Does the system provider offer thermal printers for the customized packaging labels?

	Barcode scanners	Does the system provide wired and/or portable wireless barcode scanners?
7.4	Use of RFID—tracking	Does the system use RFID for tracking?
7.4.1	Use of RFID—inventory	Does the system use RFID for inventory?
7.4.2	Use of RFID—audits	Does the system use RFID for audits?
8.0	**TRAINING**	
8.1	Onsite training	Does the system provider offer onsite training on the system?
8.2	Refresher training	Does the system provider offer refresher training on the system?
8.2.1	Web-based training	Is training offered online and on demand by specific system components, capabilities, functions, etc.?
8.3	New employee training	What training is available from the system provider for newly hired/transferred property and evidence custodians (e.g., training on what the system does and how to use it)?

APPENDIX B: LIST OF EVIDENCE RETENTION LAWS

State	*Statute/Case Law*	*Effective Year; Amend-ments*	*Crime Categories*
ALABAMA	Ala. Code 1975 § 15-18-200	2009	capital offense
ALASKA	A.S. § 12.36.200	2010	murder, manslaughter, criminally negligent homicide, first degree sexual assault, first degree sexual abuse of a minor
ARIZONA	A.R.S. § 13-4221	2009	homicide or felony sexual offense
ARKANSAS	A.C.A. § 12-12-104	2001; 2011	sex offense, violent offense, felony for which the state may take the defendant's DNA for the state's database
CALIFORNIA	Penal Code § 1417.9	2000; 2001, 2002	all criminal cases
COLORADO	C.R.S.A. § 18-1-1101, et seq.	2009	any felony or sex offense
CONNECTICUT	C.G.S.A. § 54-102jj	2003	capital felony and any crime where a person was convicted at trial, or upon order of the court for good cause shown
DELAWARE	None	n/a	n/a
DISTRICT OF COLUMBIA	DC ST § 22-4134	2002	crime of violence
FLORIDA	F.S.A. § 925.11	2001; 2004; 2006	Felony
GEORGIA	Ga. Code Ann. § 17-5-56	2003; 2008; 2011	criminal case
HAWAII	HRS § 844D-126	2005	case in which there has been a judgment of conviction
IDAHO	None	n/a	n/a
ILLINOIS	725 ILCS 5/116-4	2001; 2010	homicide, sexual offenses (aggravated criminal sexual assault, criminal sexual assault, predatory sexual assault on a child, aggravated criminal sexual abuse, criminal sexual abuse), attempts, any felony for which genetic profile may be added to database
INDIANA	Ind. Code. Ann. 35-38-7-14	2001	murder and class A, B, and C felonies
IOWA	I.C.A. § 81.10	2005	criminal actions
KANSAS	K.S.A. § 21-2512	2001	murder and rape

KENTUCKY	Ky. Rev. Stat. Ann. § 524.140	2002; 2007	capital crimes, all class A, B, C felonies, certain D felonies (sexual offenses) cf. "the appropriate governmental entity shall retain any biological material secured in connection with a criminal case for the period of time that any person remains incarcerated in connection with that case."
LOUISIANA	La. Code Crim. Proc. Ann. art. 926.1; HB 116 (2011)	2001; 2003; 2006; 2008; 2011	felonies; convictions after trial or Alford plea for homicide, rape, armed robbery are subject to moratorium on destruction (in HB 116)
MAINE	15 M.R.S.A. § 2138	2001, 2005, 2006	any crime carrying the potential punishment of at least one year imprisonment (felonies)
MARYLAND	MD Code of Crim. Proc. § 8-201	2001; 2002; 2003; 2004; 2008; 2014	murder (1st and 2nd degree); manslaughter; rape (1st and 2nd degree); sexual offense (1st and 2nd degree)
MASSACHUSETTS	2012 Mass. Legis. Serv. Ch. 38 (S.B. 1987) (WEST)	2011	Criminal offense
MICHIGAN	Mich. Comp. Laws Ann. § 770.16	2001; 2005; 2009	felony
MINNESOTA	M.S.A. § 590.10	2005	criminal case
MISSISSIPPI	Miss. Code Ann. § 99-49-1	2009	Crime
MISSOURI	V.A.M.S. 650.056	2001; 2006	felony for which defendant's DNA may be collected for entry into the state database (effect is all felonies)
MONTANA	Mont. Code Ann. §46-21-111	2003; 2009	Felony
NEBRASKA	Neb.Rev.St. § 29-4125	2001; 2003; 2007	criminal case
NEVADA	Nev. Rev. Stat. § 176.0912	2009	category A or B felony
NEW HAMPSHIRE	N.H. Rev. Stat. § 651-D:3	2004	a criminal or delinquency investigation or prosecution
NEW JERSEY	None	n/a	n/a
NEW MEXICO	N.M. Stat. Ann. §31-1A-2	2003; 2005	Felony
NEW YORK	None	n/a	n/a

NORTH CAROLINA	N.C.G.S.A. § 15A-268	2001; 2008; 2009	class A – E felonies (death sentences, violent offenses, offense requiring sex offender registration, all other felonies) – "Notwithstanding any other provision of law and subject to subsection (b) of this section, a custodial agency shall preserve any physical evidence that is reasonably likely to contain any biological evidence collected in the course of a criminal investigation or prosecution."
NORTH DAKOTA	None	n/a	n/a
OHIO	Ohio Rev. Code Annot. § 2933.82	2010	aggravated murder, murder, voluntary manslaughter, first or second degree involuntary manslaughter, first or second degree vehicular manslaughter, rape, attempted rape, sexual battery, gross sexual imposition of a person under 13
OKLAHOMA	22 Okl. St. Ann. § 1372	2001	violent felony offense
OREGON	OR SB 731	2011	aggravated murder, murder, rape in the first degree, sodomy in the first degree, unlawful sexual penetration in the first degree, aggravated vehicular homicide, manslaughter in the first degree or manslaughter in the second degree
PENNSYLVANIA	Pa. Stat. Ann. 42 § 9543.1	2002	criminal offense
RHODE ISLAND	RI ST § 10-9.1-11	2002	any crime

SOUTH CAROLINA	SC Code 1976 § 17-28-310, et seq.	2009	murder; killing by poison; killing by stabbing or thrusting; voluntary manslaughter; homicide by child abuse; aiding and abetting a homicide by child abuse; lynching; killing in a dual; spousal sexual battery; criminal sexual conduct in the first second or third degree; criminal sexual conduct with a minor; arson in the first degree; burglary or armed robbery in first degree carrying a sentence of more than 10 years; abuse or neglect of a vulnerable adult resulting in death; sexual misconduct with an inmate, patient or offender; unlawful removing or damage of an airport facility resulting in death; interference with traffic control devices or railroad signs or signals resulting in death; driving a motor vehicle under the influence of drugs or alcohol resulting in death; obstruction of a railroad resulting in death; or accessory before the fact in any of the enumerated offenses.
SOUTH DAKOTA	SDCL § 23-5B-5	2009	Felony
TENNESSEE	Tenn. Code Ann. § 40-30-309	2001	first degree murder, second degree murder, aggravated rape, rape, aggravated sexual battery or rape of a child, attempt
TEXAS	Texas C.C.P. Art. 38.43	2001; 2009; 2011	Felony
UTAH	U.C.A. 1953 § 78B-9-301	2008; 2011	Felony
VERMONT	None	n/a	n/a
VIRGINIA	Va. Code Ann. § 19.2-270.4:1	2001; 2002; 2005	Felony
WASHINGTON	West's RCWA 10.73.170	2000; 2001; 2003; 2005	Felony
WEST VIRGINIA	None	n/a	n/a
WISCONSIN	W.S.A. §§ 165.81, 757.54, 968.205, 978.08	2001; 2005	crime
WYOMING	W.S.1977 § 7-12-304	2008	Crime

APPENDIX C: SAMPLE CHAIN-OF-CUSTODY REPORT

Property Record Number:
_____

Anywhere Police Department

EVIDENCE CHAIN OF CUSTODY TRACKING FORM

Case Number: _____ Offense: _____
Submitting Officer: (Name/ID#) _____
Victim: _____
Suspect: _____
Date/Time Seized: _____Location of Seizure: _____

Description of Evidence		
Item #	**Quantity**	**Description of Item** (Model, Serial #, Condition, Marks, Scratches)

Chain of Custody				
Item #	**Date/Time**	**Released by** (Signature & ID#)	**Received by** (Signature & ID#)	**Comments/Location**

EVIDENCE CHAIN-OF-CUSTODY TRACKING FORM
(Continued)

Chain of Custody				
Item #	**Date/Time**	**Released by** (Signature & ID#)	**Received by** (Signature & ID#)	**Comments/Location**

Final Disposal Authority

Authorization for Disposal

Item(s) #: _____ on this document pertaining to (suspect): _____
is(are) no longer needed as evidence and is/are authorized for disposal by (check appropriate disposal method)
☐ Return to Owner ☐ Auction/Destroy/Divert
Name & ID# of Authorizing Officer: _____ Signature: _____Date: _____

Witness to Destruction of Evidence

Item(s) #: _____ on this document were destroyed by Evidence Custodian _____ID#:_____ in my presence on (date) _____.
Name & ID# of Witness to destruction: _____ Signature: _____Date: _____

Release to Lawful Owner

Item(s) #: _____ on this document was/were released by Evidence Custodian _____ID#:_____ to
Name _____
Address: _____ City: _____State: _____ Zip Code: _____
Telephone Number: (_____) _____
Under penalty of law, I certify that I am the lawful owner of the above item(s).

Signature: _____ Date: _____

Copy of Government-issued photo identification is attached. ☐ Yes ☐ No

This Evidence Chain-of-Custody form is to be retained as a permanent record by the Anywhere Police Department.

GLOSSARY

This glossary provides a guide in the interpretation and understanding of the document. When possible, definitions were selected from existing references. Certain definitions were specifically crafted to elucidate the intent of the document.

Biohazards: Materials that contain blood or other potentially infectious materials. These materials include many of those found in biological evidence, including semen, vaginal secretions, or any bodily fluid that is visibly contaminated with blood, and all bodily fluids in situations in which it is difficult or impossible to differentiate between bodily fluids as well as any unfixed tissue or organ from a human (living or dead) that can be collected at a crime scene and stored (OSHA 2012).

Biological Evidence: Samples of biological material—such as hair, tissue, bones, teeth, blood, semen, or other bodily fluids—or evidence items containing biological material (DNA Initiative 2012).

Bloodborne Pathogens: Microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus and human immunodeficiency virus (OSHA 2012).

Chain of Custody: Identification of the person or agency having custody of evidence and the place where that evidence is kept, in chronological order from the time evidence is collected to its destruction. A formal, written process that records the persons having custody of evidence from initial point of receipt or custody by a representative of a law enforcement agency to its final disposition by the agency. The record also reflects the dates and reasons evidence is transferred from one location or person to another. A chain-of-custody record could also be included in a court transcript.

Exceptionally Cleared: A case status where an offender is not arrested and formally charged due to some element beyond law enforcement control. Examples of exceptional clearances include, but are not limited to, the death of the offender (e.g., suicide or justifiably killed by police or citizen); the victim's refusal to cooperate with the prosecution after the offender has been identified; or the denial of extradition because the offender committed a crime in another jurisdiction and is being prosecuted for that offense (Federal Bureau of Investigation, 2013).

Contamination: The unwanted transfer of material from another source to a piece of physical evidence (National Institute of Justice "Crime Scene Investigation: A Guide for Law Enforcement" 2000).

Crime Laboratory: A facility (Government or private) that analyzes physical evidence.

Crime Scene: A location in which (or a person upon who) a crime may have occurred.

Degradation: The transition from a higher to a lower level of quality.

Desiccant: A substance used as a drying agent.

DNA: The genetic material; a double helix composed of two complementary chains of paired bases (nucleotides) (National Institute of Justice "The Future of Forensic DNA Testing: Predictions of the Research and Development Working Group" 2000); deoxyribonucleic acid (DNA), often referred to as the "blueprint of life," it is the genetic material present in the nuclei of cells that is inherited, half from each biological parent. DNA is a chemical substance contained in cells that determines each person's individual characteristics. An individual's DNA is unique, except in cases of identical twins.

Dried Down: Evidence that has been fully dried so that no liquid (e.g., blood, semen) can drip from the object.

Evidence: Property that may be related to a crime and/or that may implicate a person in or clear a person of a crime.

Evidence Collector: The person who initially took ownership of an item for evidentiary purposes.

Evidence Custodian: The person who is responsible for evidence processing in a given location (e.g., property and evidence room, hospital, court, crime laboratory). This person can be an evidence collector or handler as well.

Evidence Handler: Any person who has had evidence in his or her possession at any given time. A record of this handler must be kept in the chain-of-custody record.

Evidence Packaging: The manner in which items with potential evidentiary value are wrapped, bagged, or boxed to be preserved, documented, and labeled (Latta and Bowers 2011).

Extracted DNA: Genomic DNA extracted from biological evidence; DNA in its raw form.

First Responder: The initial responding law enforcement officer(s) and/or other public safety official(s) or service provider(s) arriving at the scene before the arrival of the investigator(s) in charge (National Institute of Justice "Crime Scene Investigation: A Guide for Law Enforcement" 2000).

Frozen: A storage condition in which the temperature is maintained thermostatically at or below –10°C (14°F).

Hepatitis B: A viral disease that causes inflammation of the liver and is primarily spread through exposure to infectious blood or bodily fluids, such as semen and vaginal secretion.

Hepatitis C: A viral disease that causes inflammation of the liver and is primarily spread through blood-to-blood contact.

High-Efficiency Particulate Air (HEPA) Filter: A filter that satisfies U.S. Department of Energy standards of efficiency and removes 99.97% of all particles greater than 0.3 micrometer from the air that passes through.

Human Immunodeficiency Virus (HIV): A virus that causes a condition in humans that leads to the progressive failure of the immune system and can be spread by the transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk.

Integrated Software Systems: A collection of computer programs designed to work together to handle an application, either by passing data from one to another or as components of a single system. Integrated systems may include Computer Aided Dispatch, Records Management System, Laboratory Information Management System, and Property Evidence Module.

Law Enforcement Agency: Any agency that enforces the law. This may be local or state police or Federal agencies, such as the Federal Bureau of Investigation or the Drug Enforcement Administration.

Long-Term Storage: A location that is designated to secure evidence or property items in the custody of an agency until the items are diverted, sold, released, or destroyed. For the purposes of this handbook, long term storage refers to any location where evidence may be stored for more than 72 hours.

Nonporous Container: Packaging through which liquids or vapors cannot pass (e.g., glass jars, metal cans, and plastic bags) (National Institute of Justice "Crime Scene Investigation: A Guide for Law Enforcement" 2000).

Packaging: Container used to house individual items of evidence.

Parent/Child Tracking: A tracking system capability that maintains information about an original evidence sample (or parent) and the resulting samples (or children) that have been devised or extracted to obtain testing results.

Personal Protective Equipment (PPE): Items used to prevent an individual's direct contact with bloodborne pathogens. PPE includes disposable gloves, disposable overalls, disposable shoe covers, laboratory coats, masks, and eye protection.

Porous Container: Packaging through which liquids or vapors may pass (e.g., paper bags and cloth bags) (National Institute of Justice "Crime Scene Investigation: A Guide for Law Enforcement" 2000).

Property Officer: A worker responsible for the intake, submission, and/or retrieval of evidence in a property room.

Property Room: A location dedicated to housing evidence for criminal investigations. This location can be in a law enforcement office, a crime laboratory, a hospital, or a court.

Property Room Manager/Supervisor: A worker responsible for managing the property and/or the personnel who handles the intake, submission, and/or retrieval of evidence in a property room.

Refrigerated: A storage condition in which the temperature is maintained thermostatically between 2°C and 8°C (36°F and 46°F) with less than 25% humidity.

Refrigerator: Equipment used to keep an item or group of items cooler than room temperature.

Room Temperature: A storage condition in which the temperature is equal to the ambient temperature of its surroundings; storage area may lack temperature and humidity control methods.

Sexual Assault Kit: A collection of items used by medical personnel to collect and preserve physical sexual assault evidence that can be used in a criminal investigation.

Stabilizing Solution: A compound that is added to biological material designed to enable the storage and transportation of DNA samples without freezing (Swinfield et al. 2009).

Standard Operating Procedure (SOP): A set of guidelines that can also be equated to general orders, policies and procedures, and rules and regulations.

Temperature Controlled: A storage condition in which temperature is maintained thermostatically between 15.5°C and 24°C (60°F - 75°F) with less than 60% humidity.

Temporary Storage/Short-Term Storage: Storage of evidence from the time collected to reception by property room personnel. For the purpose of this handbook, temporary or short-term storage refers to any location that can hold evidence for up to 72 hours.

Tickler File: A file that serves as a reminder and is arranged to bring matters to timely attention; can be manual (e.g., folders into which copies of property records are placed when an item is temporarily signed out to the laboratory, court, investigation, etc.), or can be automated as part of a computer application that sets a reminder date that triggers a notification that an action is overdue (e.g., an item has not been returned from court).

Touch DNA: DNA contained in shed skin cells that transfer to surfaces that humans touch (Daly, Murphy, and McDermott 2012).

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