



# **Firearms Examination**

## **Test No. 20-5262 Summary Report**



Each sample set consisted of three known expended cartridge cases test-fired from a suspect weapon (Item 1) and four questioned expended cartridge cases (Items 2-5). Participants were requested to examine these items and report their findings. Data were returned from 279 participants and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

## **Manufacturer's Information**

Each sample set contained five items: Item 1 consisted of three cartridge cases fired in the suspect's firearm. Items 2, 3, 4 and 5 each consisted of one cartridge case recovered from the scene. PMC® Bronze 380 Auto 90 grain Full Metal Jacket (FMJ) was used for all five items. Participants were requested to determine which, if any, of the recovered questioned cartridge cases (Items 2-5) were fired from the same firearm as the known cartridge cases (Item 1).

The cartridge cases in Items 1, 2, 3, and 5 were fired in a Smith & Wesson M&P Bodyguard 380 (Serial Number KCZ6669). Item 4 was fired in a Glock 42 380 auto handgun (Serial Number AAYF559).

ITEMS 1, 2, 3, 5 (IDENTIFICATION): Multiple magazines were loaded with PMC® Bronze 380 ammunition for firing with the Smith & Wesson M&P Bodyguard 380 handgun. After the ammunition was expended, the cartridge cases were collected and packaged together as a batch. This process was repeated until the required number was produced. Out of each batch, the necessary number of cartridge cases was selected and inscribed with a "1" (three cartridge cases), "2" (one cartridge case), "3" (one cartridge case), or "5" (one cartridge case) and then sealed into their respective boxes.

ITEM 4 (ELIMINATION): Multiple magazines were loaded with PMC® Bronze 380 ammunition for firing with the Glock 42 380 handgun. After the ammunition was expended, the cartridge cases were collected. This process was repeated until the required number was produced. Out of each batch, the necessary number of cartridge cases was selected and inscribed with a "4" (one cartridge case) and then sealed into their respective boxes.

SAMPLE SET ASSEMBLY: For each sample set, elimination Item 4, along with Items 1, 2, 3, and 5 of the same association batch were placed in a sample pack box. This process was repeated until all of the sample sets were prepared. Once verification was completed, the sample packs were sealed with evidence tape and initialed "CTS."

VERIFICATION: During test production, 10% of the cartridge cases from each batch were selected and intercompared to confirm that markings were consistent. All three predistribution laboratories reported the expected responses.

## **Summary Comments**

This test was designed to allow participants to assess their proficiency in a comparison of expended cartridge cases. Participants were provided with four questioned expended PMC® Bronze 380 Auto 90 grain Full Metal Jacket (FMJ) cartridge cases (Items 2, 3, 4, and 5), which they were requested to compare with three known expended cartridge cases (Item 1) that were fired in the suspect's weapon, a Smith & Wesson M&P Bodyguard 380 handgun. For each sample set, the Item 2, 3, and 5 cartridge cases were fired in the same firearm that discharged the Item 1 cartridge cases. The Item 4 cartridge case was fired in a different firearm from that which discharged the Item 1 cartridge cases (Refer to Manufacturer's Information for preparation details).

In Table 1 Response Summary, 279 of 283 responding participants (99%) identified Items 2, 3, and 5 and eliminated Item 4 as having been fired from the same firearm as the Item 1 cartridge cases. Two participants identified Items 2 and 5 and eliminated Items 3 and 4 as having been fired from the same firearm as the Item 1 cartridge cases. One participant identified Item 5 and eliminated Items 2 through 4, and one participant identified Items 2 through 5 as having been fired from the same firearm as the Item 1 cartridge cases.

# Examination Results

*Were any of the questioned expended cartridge cases (Items 2-5) discharged from the same firearm as the known expended cartridge cases (Item 1)?*

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
26U8B9	Yes	Yes	No	Yes	3TRBKQ	Yes	Yes	No	Yes
28HJBE	Yes	Yes	No	Yes	3VZJRP	Yes	Yes	No	Yes
2CRWTC	Yes	Yes	No	Yes	3YGQFP	Yes	Yes	No	Yes
2EYETU	Yes	Yes	No	Yes	3YX3VA	Yes	Yes	No	Yes
2FQFQ6	Yes	Yes	Inc	Yes	43CXB7	Yes	Yes	No	Yes
2JCX9P	Yes	Yes	No	Yes	43FKQY	Yes	Yes	No	Yes
2K6TVX	Yes	Yes	No	Yes	468J6X	Yes	Yes	No	Yes
2N7WP7	Yes	Yes	No	Yes	4BAPJZ	Yes	Yes	No	Yes
2Q832Q	Yes	Yes	No	Yes	4C2NXY	Yes	Yes	No	Yes
2X8GPD	Yes	Yes	No	Yes	4EUGV3	Yes	Yes	No	Yes
3JM46Q	Yes	Yes	No	Yes	4NFL33	Yes	Yes	No	Yes
3LWBA6	Yes	Yes	No	Yes	4TBDBY	Yes	Yes	Inc	Yes
3M87VW	Yes	Yes	No	Yes	62YR93	Yes	Yes	Inc	Yes
3PVHV3	Yes	Yes	No	Yes	66YV3A	Yes	Yes	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
67VCDL	Yes	Yes	No	Yes	8H27M2	Yes	No	No	Yes
6H4YN4	Yes	Yes	No	Yes	8LYKAR	Yes	Yes	No	Yes
6NP8PA	Yes	Yes	No	Yes	8NNW9W	Yes	Yes	No	Yes
6W6Q99	Yes	Yes	No	Yes	8PYYW	Yes	Yes	No	Yes
6YWPM8	Yes	Yes	No	Yes	8TF4R6	Yes	Yes	No	Yes
7H3JU4	Yes	Yes	No	Yes	8VLLP2	Yes	Yes	No	Yes
7RR6Z3	Yes	Yes	No	Yes	8XAXP7	Yes	Yes	No	Yes
7V76WT	Yes	Yes	No	Yes	9279VQ	Yes	Yes	No	Yes
7WHJK3	Yes	Yes	Inc	Yes	929VD6	Yes	Yes	No	Yes
82PR64	Yes	Yes	No	Yes	94DN6H	Yes	Yes	No	Yes
86BAMP	Yes	Yes	No	Yes	96RQFW	Yes	Yes	No	Yes
88HPUV	Yes	Yes	No	Yes	9HD3R7	Yes	Yes	No	Yes
88YLLU	Yes	Yes	No	Yes	9JN6D6	Yes	Yes	No	Yes
8BHZPV	Yes	Yes	No	Yes	9LTX7H	Yes	Yes	No	Yes
8C977L	Yes	Yes	No	Yes	9Q7D22	Yes	Yes	No	Yes
8EFG3P	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
9VZ82N	Yes	Yes	No	Yes	BL8X6P	Yes	Yes	No	Yes
9XR9YY	Yes	Yes	No	Yes	BPM7TP	Yes	Yes	No	Yes
9ZDC9H	Yes	Yes	No	Yes	BQWFGF	Yes	Yes	No	Yes
AJ3QPR	Yes	Yes	No	Yes	BXWV7N	Yes	Yes	No	Yes
AM7L9V	Yes	Yes	No	Yes	C6CZGZ	Yes	Yes	No	Yes
AWRVQW	Yes	Yes	Inc	Yes	CD77A2	Yes	Yes	No	Yes
B3BDLK	Yes	Yes	No	Yes	CEL33Z	Yes	Yes	No	Yes
B6KKQX	Yes	Yes	No	Yes	CFW6NY	Yes	Yes	No	Yes
BACPK3	Yes	Yes	No	Yes	CJWFJY	Yes	Yes	No	Yes
BBLUXQ	Yes	Yes	No	Yes	CLHX2K	Yes	Yes	No	Yes
BCFK2J	Yes	Yes	No	Yes	CVBDN3	Yes	Yes	No	Yes
BDY83M	Yes	Yes	No	Yes	D27UEY	Yes	Yes	No	Yes
BGR92F	Yes	Yes	No	Yes	D2UVJQ	Yes	Yes	No	Yes
BH9KKL	Yes	Yes	No	Yes	D6TCWK	Yes	Yes	No	Yes
BKDCCY	Yes	Yes	No	Yes	D6TDFW	Yes	Yes	No	Yes
BKWWJR	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
DK6RYF	Yes	Yes	Inc	Yes	EVHCUW	Yes	Yes	No	Yes
DLGMJM	Yes	Yes	No	Yes	EWHABJ	Yes	Yes	No	Yes
DN64TU	Yes	Yes	No	Yes	EWXTVG	Yes	Yes	No	Yes
DQARCQ	Yes	Yes	No	Yes	EY2LMU	Yes	Yes	No	Yes
E4UQED	Yes	Yes	No	Yes	EYHHFU	Yes	Yes	No	Yes
EBDTLF	Yes	Yes	No	Yes	EZVEHD	Yes	Yes	No	Yes
ECL4HJ	Yes	Yes	No	Yes	F24JXM	Yes	Yes	No	Yes
EEWVNE	Yes	Yes	No	Yes	F48EGP	Yes	Yes	No	Yes
EF7T3W	Yes	Yes	No	Yes	F48JRR	Yes	Yes	Inc	Yes
EFAFGN	Yes	Yes	No	Yes	F8BBZT	Yes	Yes	No	Yes
EGZLXE	Yes	Yes	No	Yes	FAYLZX	Yes	Yes	No	Yes
EHV622	Yes	Yes	No	Yes	FJZARV	Yes	Yes	No	Yes
ELCMWR	Yes	Yes	No	Yes	FLQBXJ	Yes	Yes	No	Yes
EN2YVX	Yes	Yes	No	Yes	FNFHFU	Yes	Yes	No	Yes
EPB49L	Yes	Yes	No	Yes	FQMZEQ	Yes	Yes	No	Yes
EQ8GUT	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
FVGW3G	Yes	Yes	No	Yes	HUV3DQ	Yes	Yes	No	Yes
FVUQGW	Yes	Yes	No	Yes	HW3HLH	Yes	Yes	No	Yes
FVZPVE	Yes	Yes	No	Yes	HZX9TU	Yes	Yes	No	Yes
FYF8YG	Yes	Yes	No	Yes	JA67EC	Yes	Yes	No	Yes
G6W8PD	Yes	Yes	No	Yes	JAHYRR	Yes	Yes	No	Yes
G793AK	Yes	Yes	No	Yes	JD6GAC	Yes	Yes	No	Yes
GDEGDA	Yes	Yes	No	Yes	JFTT9H	Yes	Yes	No	Yes
GUFJVE	Yes	Yes	No	Yes	JPYXYD	Yes	Yes	No	Yes
GYU2BB	Yes	Yes	No	Yes	JQQXWN	Yes	Yes	Inc	Yes
H4KQBE	Yes	Yes	No	Yes	JUR4A9	Yes	Yes	No	Yes
H6WP6N	Yes	Yes	No	Yes	JXAWTN	Yes	Yes	No	Yes
HD8RQN	Yes	Yes	No	Yes	K278Z9	Yes	Yes	No	Yes
HDM9JW	Yes	Yes	No	Yes	K4VCWL	Yes	Yes	No	Yes
HJDHTU	Yes	Yes	No	Yes	K8UMTL	Yes	Yes	No	Yes
HL22UR	Yes	Yes	No	Yes	KDLUBU	Yes	Yes	No	Yes
HMZZBF	Yes	Yes	No	Yes					



TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
KGYXZB	Yes	Yes	No	Yes	MDB8H6	Yes	Yes	No	Yes
KJLG29	Yes	Yes	No	Yes	MLL947	Yes	Yes	No	Yes
KLFZ6V	Yes	Yes	No	Yes	MRE9L8	Yes	Yes	No	Yes
KLUN7M	Yes	Yes	No	Yes	MT7MQC	Yes	Yes	No	Yes
KYZMAM	No	No	No	Yes	MUXMNM	Yes	Yes	No	Yes
L8TCAN	Yes	Yes	No	Yes	MVEF6K	Yes	Yes	No	Yes
LAW8UQ	Yes	Yes	No	Yes	MXJ678	Yes	Yes	No	Yes
LF8YLD	Yes	Yes	No	Yes	N37ETB	Yes	Yes	No	Yes
LFMH4P	Yes	Yes	No	Yes	N3P3B7	Yes	Yes	Inc	Yes
LGCVL8	Yes	Yes	Inc	Yes	NCXTWG	Yes	Yes	No	Yes
LHAYLA	Yes	Yes	No	Yes	NDNYC8	Yes	Yes	No	Yes
LQ43ML	Yes	Yes	No	Yes	NFUGB4	Yes	Yes	No	Yes
LVWBP8	Yes	Yes	No	Yes	NMVT9L	Yes	Yes	No	Yes
LYWLK7	Yes	Yes	No	Yes	NTK7BA	Yes	Yes	No	Yes
M6E88J	Yes	Yes	No	Yes	NVAHAE	Yes	Yes	No	Yes
MCY76J	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
NXDDTH	Yes	Yes	No	Yes	R2K3KG	Yes	Yes	No	Yes
NZ69FQ	Yes	Yes	No	Yes	R4B2YE	Yes	Yes	No	Yes
NZH3U6	Yes	Yes	No	Yes	R8AEL4	Yes	Yes	No	Yes
P3MQBG	Yes	Yes	No	Yes	RAXQKA	Yes	Yes	No	Yes
P6RFB4	Yes	Yes	No	Yes	RCNX2Z	Yes	Yes	No	Yes
PBFYV8	Yes	Yes	No	Yes	RFN2V9	Yes	Yes	No	Yes
PF8BPH	Yes	Yes	No	Yes	RLCTZF	Yes	Yes	No	Yes
PHFKLL	Yes	Yes	No	Yes	RLPH28	Yes	Yes	No	Yes
PN46N2	Yes	Yes	No	Yes	RLT6HL	Yes	Yes	No	Yes
PX9C42	Yes	Yes	No	Yes	RNXP97	Yes	Yes	No	Yes
Q8UV28	Yes	Yes	No	Yes	RQL7HE	Yes	No	No	Yes
QBB2XG	Yes	Yes	No	Yes	RQM28C	Yes	Yes	No	Yes
QD4WKP	Yes	Yes	No	Yes	RTC8N3	Yes	Yes	No	Yes
QR3YZC	Yes	Yes	No	Yes	RUMACM	Yes	Yes	No	Yes
QVXP99	Yes	Yes	No	Yes	T4NX4J	Yes	Yes	No	Yes
QYGPJH	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
TFJ4Y3	Yes	Yes	No	Yes	VBX263	Yes	Yes	No	Yes
TFWZ3L	Yes	Yes	No	Yes	VBX3NF	Yes	Yes	No	Yes
TGB4WD	Yes	Yes	No	Yes	VC9824	Yes	Yes	No	Yes
TQ2KRA	Yes	Yes	No	Yes	VD7DM4	Yes	Yes	No	Yes
TRVBV3	Yes	Yes	No	Yes	VDP23D	Yes	Yes	No	Yes
TYUXM3	Yes	Yes	No	Yes	VFUPLA	Yes	Yes	No	Yes
TZ8PFJ	Yes	Yes	No	Yes	VGPCXD	Yes	Yes	No	Yes
U6XLHF	Yes	Yes	No	Yes	VHKV3Z	Yes	Yes	No	Yes
UD8N4G	Yes	Yes	No	Yes	VMV2H7	Yes	Yes	No	Yes
UGBLEA	Yes	Yes	No	Yes	VN3GPC	Yes	Yes	No	Yes
UWJDGE	Yes	Yes	No	Yes	VNL8XW	Yes	Yes	No	Yes
UZZ63Z	Yes	Yes	No	Yes	VNNUFB	Yes	Yes	No	Yes
V6AHKY	Yes	Yes	No	Yes	VTY67J	Yes	Yes	No	Yes
V7M8NC	Yes	Yes	No	Yes	WLMN6	Yes	Yes	No	Yes
V8ZG2J	Yes	Yes	No	Yes	VXA4XC	Yes	Yes	Inc	Yes
VA73Q4	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
VZGDUG	Yes	Yes	No	Yes	XLTVAB	Yes	Yes	Yes	Yes
W273R3	Yes	Yes	No	Yes	XU4CLH	Yes	Yes	No	Yes
W4EGY9	Yes	Yes	No	Yes	XX4NGH	Yes	Yes	No	Yes
W6QU36	Yes	Yes	No	Yes	Y7F22Y	Yes	Yes	No	Yes
W8UPM8	Yes	Yes	No	Yes	Y883YA	Yes	Yes	No	Yes
W8UUWA	Yes	Yes	No	Yes	YAAVYZ	Yes	Yes	No	Yes
W96NJ2	Yes	Yes	No	Yes	YCXC98	Yes	Yes	No	Yes
WAKV3X	Yes	Yes	No	Yes	YDX8X6	Yes	Yes	No	Yes
WLDCRY	Yes	Yes	No	Yes	YF279X	Yes	Yes	No	Yes
WMQ4M2	Yes	Yes	No	Yes	YG9KF4	Yes	Yes	No	Yes
WR4L2X	Yes	Yes	No	Yes	YKCFY8	Yes	Yes	No	Yes
WVYFYY	Yes	Yes	No	Yes	YN96FE	Yes	Yes	No	Yes
WYFZLE	Yes	Yes	Inc	Yes	YRUMXY	Yes	Yes	No	Yes
X4NNWU	Yes	Yes	No	Yes	YYVYUW	Yes	Yes	No	Yes
X8RJEC	Yes	Yes	No	Yes	ZEK9GY	Yes	Yes	No	Yes
XCJLN4	Yes	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
ZHKHK9	Yes	Yes	No	Yes					
ZLKTG9	Yes	Yes	No	Yes					
ZNQBF4	Yes	Yes	No	Yes					
ZPHAT3	Yes	Yes	No	Yes					
ZQU9NC	Yes	Yes	No	Yes					
ZVN3NX	Yes	Yes	No	Yes					
ZZ3L3U	Yes	Yes	No	Yes					

Response Summary					Participants: 283
<i>Were any of the questioned expended cartridge cases (Items 2-5) discharged from the same firearm as the known expended cartridge cases (Item 1)?</i>					
<b>Responses</b>		<u>Item 2</u>	<u>Item 3</u>	<u>Item 4</u>	<u>Item 5</u>
	Yes	<b>282 (99.6%)</b>	<b>280 (98.9%)</b>	<b>1 (0.4%)</b>	<b>283 (100.0%)</b>
	No	<b>1 (0.4%)</b>	<b>3 (1.1%)</b>	<b>270 (95.4%)</b>	<b>0 (0.0%)</b>
	Inc	<b>0 (0.0%)</b>	<b>0 (0.0%)</b>	<b>12 (4.2%)</b>	<b>0 (0.0%)</b>

# Conclusions

TABLE 2

WebCode	Conclusions
26U8B9	Three of the four cartridges presented at the examination (item nr.2, 3, 5) were discharged from the known weapon (the tube of which was presented as comparative material)
28HJBE	Cartridge cases labeled as ITEM2 (main entrance), ITEM 3 (main entrance), ITEM5 (floor near dressing room) were all discharged from the same firearm as the known cartridge cases ITEM 1 (suspect's weapon). Cartridge case labeled as ITEM 4 (floor near the cash register) was not discharged from the same firearm as the known cartridge cases ITEM 1 (suspect's weapon)
2CRWTC	In my opinion, items 2, 3 and 5 were discharged in the gun used to discharge the cartridge cases in item 1. In my opinion, item 4 was not discharged in the gun used to discharge the cartridge cases in item 1.
2EYETU	The examination of the recovered expended cases under a comparison microscope microscope, allows us to conclude that the items 2,3 and 5, were fired from the seized Smith & Wesson Bodyguard. The examination also showed that the item 4 was fired from a second firearm.
2FQFQ6	The ballistic comparison was made between the expended cartridges identified with item # 1 (known) obtained from the Smith & Wesson M&P Bodyguard 380 firearm, with the expended cartridges received identified with items # 2, # 3, # 4 and # 5 (questioned) found on stage, determining that the expended cartridge identified with items # 2, # 3 and # 5 present the equal characteristics of individualization in the percussion plane, impression of the percussion needle and impression in the extractor needle, therefore determines that these expended cartridges were hit by the same firearm and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.
2JCX9P	Item #1, 2, 3 and 5: The cartridge cases were microscopically identified as having been fired in the same firearm. Item #4: The cartridge case was not fired in the same firearm as Exhibits #1, 2, 3 and 5.
2K6TVX	A. Item 2, Item 3 and Item 5 (questioned) were fired in the same firearm which fired the fired cartridge cases received in Item 1 (known). B. Item 4 (questioned) was fired in a second firearm, other than that which fired the fired cartridge cases received in Item 1 (known).
2N7WP7	The fired .380 auto caliber cartridge cases in items #2, #3, #4, and #5 were microscopically compared to the reference materials in item #1 (fired in the Smith & Wesson M&P Bodyguard.380 caliber pistol) which yielded the following results: Items #2, #3, and #5 possessed the same class characteristics, as well as, sufficient reproducing individual characteristics to one another and to the reference materials in item #1 and were determined to have been fired in the the the same weapon as item #1 (Smith & Wesson M&P Bodyguard .380 auto caliber pistol). Item #4 possessed different class characteristics (firing pin impression) than items #2, #3, #5, and the reference materials in item #1 and was fired in a separate weapon.
2Q832Q	Cartridge Case Analysis: Methodology: Physical (Visual Examination) Microscopy (Comparison Microscope) Items 1, 2, 3, and 5, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. A reference from this group will be entered into NIBIN. Items 1, 2, 3, and 5, the cartridge cases, were not fired in the same firearm as Item 4, the cartridge case, based upon different class characteristics.
2X8GPD	a)The first and second expended cartridge cases recovered from the main entrance(Item 2, Item 3) and expended cartridge case recovered from the floor near the dressing room (Item 5),

TABLE 2

WebCode	Conclusions
	<p>were fired by the Smith &amp; Wesson M&amp;P Bodyguard 380 handgun from suspect's possession.</p> <p>b)The expended cartridge case recovered from the floor near the cash register (Item 4), was not fired by the Smith &amp; Wesson M&amp;P Bodyguard 380 handgun from suspect's possession.</p>
3JM46Q	<p>analyzed the vanillas of item No. 1 with vanillas item No. 2, No. 3, No. 4 and No. 5 microscopically the back room impressions and the firing needle impressions massifs it was determined that the vanillas of item No. 1, No. 2 No. 3, and No. 5 have class characteristics, his class and identity to be shot by the percussed firing needle the weapon. And the vanilla of item No. 4 were fired by the same weapon but different from that fired from item No. 1, No. 2, No. 3 and No. 5.</p>
3LWBA6	<p>GROUP 1.-items 2,3 AND 5 correspond to caliber .380 AUTO, they are IDENTIFIED as deflagrated in the firearm identified with trace number 1. GROUP 2.- item 4 corresponds to the caliber .380 AUTO, IS IDENTIFIED as deflagrated in a firearm.</p>
3M87VW	<p>Fired cartridge case Items 2, 3 and 5 were identified as having been fired in the same firearm as test fired cartridge cases within Item 1 based on agreement of class characteristics and sufficient agreement of individual characteristics within the breech face impression marks. Fired cartridge case Item 4 was eliminated from having been fired in the same firearm as test fired cartridge cases within Item 1 based on disagreement of class characteristics.</p>
3PVHV3	<p>Items 2, 3 and 5 were identified microscopically as having been fired in the same firearm that fired Items 1A - 1C, based on agreement of the combination of individual characteristics and all discernible class characteristics. Item 4 was microscopically eliminated as having been fired in the same firearm that fired Items 1A - 1C due to disagreement of discernible class characteristics. Visual and microscopic examination of Item 4 revealed that the class characteristics indicate that it could have been fired in a Glock brand of 380 Auto semi-automatic pistol. The list of possible firearms was generated using an in-house expanded version of the General Rifling Characteristics Database created by the Federal Bureau of Investigation. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm(s) of the appropriate caliber-class should be submitted for comparison; however, a complete list of the search results will be maintained in the case file. Item 4 and test fire Item 1A were imaged into the Integrated Ballistics Identification System (IBIS) / BrassTRAX database and any identification(s) made from these entries will be supplemented. Test fires are being retained by the Firearms Identification Laboratory; all other items of evidence are being returned.</p>
3TRBKQ	<p>Item 002, Item 003, and Item 005 were microscopically compared to Item 001 and were identified as having been fired in the same firearm as Item 001 due to the correspondence of all discernible class characteristics and sufficient agreement of individual characteristics. Item 004 was microscopically compared to Item 001 and was eliminated as having been fired in the same firearm as Item 001 due to the disagreement of discernible class characteristics.</p>
3VZJRP	<p>Microscopic assessment established that the four questioned cartridge cases, Items A2, A3, A4, and A5 contain discernible class characteristics and are suitable for microscopic comparison. Microscopic comparison of Item A1a (test-fired cartridge case from suspect firearm) to Item A2 revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that Item A2 was discharged in the suspect firearm. Microscopic comparison of Item A1a (test-fired cartridge case from suspect firearm) to Item A4 revealed that they have significantly different class characteristics; therefore, Item A4 was not discharged in the suspect firearm. Microscopic comparison of Item A2 to Item A3 and Item A5 revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that Item A3 and Item A5 were discharged in the suspect firearm.</p>

TABLE 2

WebCode	Conclusions
	In summary, two firearms are represented by the questioned discharged cartridge cases. Items A2, A3, and A5 were discharged in the suspect firearm. Item A4 was discharged in a second, unknown firearm. Any opinions, interpretations, or conclusions in this report are based upon the data in the associated laboratory case record.
3YGQFP	Item 2 and its cast was microscopically compared to Items 1-1, 1-2, 1-3, and their casts using a comparison microscope. Agreement of class and individual characteristics sufficient for identification were observed. Item 2 was fired in the Smith & Wesson pistol. Item 3 and its cast was microscopically compared to Items 1-1, 1-2, 1-3, and their casts using a comparison microscope. Agreement of class and individual characteristics sufficient for identification were observed. Item 3 was fired in the Smith & Wesson pistol. Item 4 was microscopically compared to Items 1-1, 1-2, and 1-3 using a comparison microscope. Significant differences in class characteristics (firing pin aperture shape) were observed to conclude Item 4 was not fired in the Smith & Wesson pistol. Item 5 and its cast was microscopically compared to Items 1-1, 1-2, 1-3, and their casts using a comparison microscope. Agreement of class and individual characteristics sufficient for identification were observed. Item 5 was fired in the Smith & Wesson pistol.
3YX3VA	Item Description, Comparison, Conclusion. #1 – test fires #2, #3, and #5 – Source from S&W pistol three (3) fired 380 Identification Auto cartridge cases #4 – one (1) fired 380 Source Auto cartridge case Exclusion #4 – one (1) fired 380 GRC Search Consistent with Auto cartridge case being fired by Glock Other possibilities may exist. Remarks: No fired cartridge cases were entered into the NIBIN database. All evidence will be returned to the submitting agency. Analytical Detail: Analytical findings offered above were determined using visual and microscopic examinations / comparisons [Participant provided a list that could not be reproduced in this report].
43CXB7	The first and second expended cartridge cases recovered from the main entrance, items 2 and 3, and the expended cartridge case recovered from the floor near the dressing room, item 5, were fired from the suspect's Smith &Wesson M&P Bodyguard 380 handgun used to fire the test fired cartridge cases, item 1 Item 4 the cartridge case recovered from the floor near the cash register was not fired in the Smith &Wesson M&P Bodyguard 380 handgun recovered from a suspect.
43FKQY	The cartridge cases in Items 2, 3 and 5 were fired from the same gun that fired the test fired cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge case in Item 4 was not fired from the same gun that fired the test fired cartridge cases in Item 1, based on differences observed in class characteristics.
468J6X	Examinations showed Items 2, 3, and 5 were discharged from the same firearm as Item 1. Examinations showed Item 4 was not discharged from the same firearm as Item 1.
4BAPJZ	Lab Item #1 (three PMC .380 Auto test-fired cartridge cases) and Lab Items #2 - #5 (four PMC .380 Auto fired cartridge cases) were examined and microscopically compared on 12/9/2020. Based on agreement of all discernible class characteristics and sufficient agreement of individual characteristics, Lab Items #2, #3, and #5 (three (3) PMC .380 Auto fired cartridge cases) were positively identified as having been fired in the same firearm as Lab Item #1 (three (3) PMC .380 Auto fired cartridge cases). No firearm was submitted. Base on disagreement of class and individual characteristics, Item #4 (one fired PMC .380 Auto fired cartridge case) was eliminated as having been fired in the same firearm as Items #1, 2, 3, and 5.
4C2NX Y	The 380 Auto cartridge cases (Items 2, 3, and 5) were fired in the same firearm as the test fired cartridge cases (Item 1). The single 380 Auto cartridge case (Item 4) was not fired in the same



TABLE 2

WebCode	Conclusions
	firearm as the above cartridge cases (Items 1, 2, 3, and 5) based on differences in class characteristics.
4EUGV3	1- In the comparison of the four cartridge cases from Item2, Item3, Item4 and Item5 numbered boxes, it was determined that they were divided into two groups(3-1) and fired with two different guns for their diameter. 2- The three cartridge cases that came out of the Item2, Item3 and Item5 boxes were fired with the gun stated(Item1) to be obtained from the suspect. 3- One cartridge case coming out of the box numbered Item4 was fired with a different weapon other than the one stated to be obtained from the suspect. Note: Google translate is used in the text.
4NFL33	A comparison of images of the Seven (7) 380Auto casings in box marked (Item 1), (Item 2) ,(Item 3) (Item 4) and (Item 5) was done, the results of the comparison analysis found Six (6) 380 Auto casings marked (Item 1), (Item 2) ,(Item 3) and (Item 5) has the same individual characteristic marks confirming Six (6) 380 Auto casings are fired from One (1) gun of the same 380Auto caliber and in this case there are Two (2) gun involved. The following is a group of firearms involved: Firearms 1- (Item 1), (Item 2) ,(Item 3) and (Item 5). Firearms 2- (Item 4)
4TBDBY	The test fires from Item 1 were examined and microscopically compared to Item 2-5. The result of the comparison for Item 2,3,5 was positive (identification). The result of the comparison for Item 4 was inconclusive.
62YR93	The items # 2, # 3 y # 5 they were hit and ejected by the firearm that fired items # 1, the result being positive. item # 4, has certain characteristics similar to the caps of item # 1, however, I find very few individualizing characteristics to be able to conclude that element as positive.
66YV3A	A. The cartridge cases described in items 1, 2, 3 and 5, are .380 Auto caliber and were fired by the same firearm (identification). B. The cartridge case described in item 4, is .380 Auto caliber and was fired by a firearm. C. The cartridge case described in item 4, is .380 Auto caliber and was not fired by the firearm used to fire the cartridge cases described in items 1, 2, 3 and 5.
67VCDL	Laboratory Items #001.B (agency item 2), 001.C (agency item 3) and 001.E (agency item 5), three spent 380 Auto cartridge cases are identified as being fired by the same firearm as Laboratory Item #001.A (agency item 1), three spent 380 Auto cartridge cases. Laboratory Item #001.D (agency item 4), one spent 380 Auto cartridge case is eliminated as being fired by the same firearm as Laboratory Item #001.A (agency item 1), three spent 380 Auto cartridge cases.
6H4YN4	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
6NP8PA	Items 2, 3 and 5 had been discharged from the same firearm as the known expended cartridge cases (Item 1). Item 4 had been discharged from a different firearm as the known expended cartridge cases (Item 1).
6W6Q99	Items 2, 3, and 5 were identified as having been fired in the item 1 pistol based upon sufficient

TABLE 2

WebCode	Conclusions
	agreement of individual characteristics. Item 4 was eliminated as having been fired in the item 1 pistol based upon differences in class characteristics.
6YWPM8	There is sufficient agreement of class and individual characteristics between the test fires, Item 1, and the questioned cartridge cases, Items 2, 3 and 5, to determine that they had been discharged in the same firearm. There is agreement of class characteristics but sufficient disagreement of individual characteristics between the test fires, Item 1, and the questioned cartridge case, Item 4, to determine that they had NOT been discharged in the same firearm.
7H3JU4	Items 2, Items 3 and 5 were fired in the same firearm as the Item 1 Known cartridge cases.
7RR6Z3	Submitted cartridge cases of item 2, item 3, item 4 and item 5 were fired from two (2) different weapons of the same caliber 380. Only three (3) cartridge cases of item 2, item 3 and item 5 were fired from the firearm that fired three (3) cartridge cases of item 1.
7V76WT	Visual and microscopic analyses of the Q1 through Q4 evidence cartridge cases (Item 2 through 5) and the K1 test fired cartridge cases (Item 1) were performed on December 14, 2020, and the results of the comparisons and evaluations are as follows: Based on agreement of discernible class characteristics and sufficient agreement of individual characteristics, Q1, Q2, and Q4 (Item 2, 3, and 5) were identified as having been fired with the K1 (Item 1) firearm. Based on a difference in class characteristics and significant disagreement of individual characteristics, Q3 (Item 4) was eliminated as having been fired with the K1 (Item 1) firearm. Q3 (Item 4) bears class characteristics most commonly produced by some Glock and Smith & Wesson M&P pistols. Q3 (Item 4) has limited marks of value and may be suitable for future microscopic comparisons. Should any other suspect firearms be recovered, please submit and reference the above CC #. SUFFICIENT AGREEMENT- "Sufficient agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility. Sufficient agreement is related to the significant duplication of random toolmarks as evidenced by a pattern or combination of patterns of surface contours.
7WHJK3	The ballistic comparison was made between the expended cartridges identified with item # 1 (known) obtained from the Smith & Wesson M&P Bodyguard 380 firearm, with the expended cartridges received identified with items # 2, # 3, # 4 and # 5 (questioned) found on stage, determining that the expended cartridge identified with items # 2, # 3 and # 5 present the equal characteristics of individualization in the percussion plane, impression of the percussion needle and impression in the extractor needle, therefore determines that these expended cartridges were hit by the same firearm and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.
82PR64	[No Conclusions Reported.]
86BAMP	Based on agreement of all discernible class characteristics with no significant differences and sufficient agreement of individual characteristics within the breech face marks, shear marks, firing pin impression and drag marks, the three cartridge cases marked "Item 2", "Item 3" and "Item 5" were fired in the same firearm that had fired the known cartridge cases marked "Item 1". Based on differences in breech face marks and the size of the firing pin impression, the cartridge case marked "Item 4" was not fired in the same firearm that had fired the known cartridge cases marked "Item 1".
88HPUV	The test shells marked #1 were examined and microscopically compared to the shells marked #2, #3, and #5 with positive (identification) results. The three shells marked #2, #3, and #5 were discharged in the same firearm as the test fires marked #1. The test shells marked #1

TABLE 2

WebCode	Conclusions
	were examined and microscopically compared to the shell marked #4 with negative (Elimination) results. The shell marked #4 was not discharged in the same firearm as the test fires marked #1.
88YLLU	Item 2, Item 3, and Item 5 were fired in the same firearm as Item 1 (identification). This is also the opinion of Firearms Examiner _____. Item 4 was not fired in the same firearm as Item 1 (elimination). This is also the opinion of Firearms Examiner _____.
8BHZPV	Items 2, 3, and 5 were microscopically compared with the Item 1 test fired specimens, finding correspondence of class characteristics and individual distinguishing characteristics. It was concluded that Items 2, 3, and 5 were fired by the recovered Smith and Wesson Bodyguard pistol. Item 4 was microscopically compared with the Item 1 test fired specimens, finding class characteristic differences (FP shape and FPAS shape). It was concluded that Item 4 was not fired by the recovered Smith and Wesson Bodyguard pistol
8C977L	The fired cartridge cases, items 2, 3, and 5 were identified as having been fired in the Smith & Wesson pistol, item 1. The fired cartridge case, item 4, was fired in a second firearm.
8EFG3P	Items 2, 3, and 5 were fired in the same firearm as the item 1 test fires. Item 4 was fired in a second firearm.
8H27M2	The three (3) casings sent marked as indication one 1 (Known) and the casings sent marked as indication two 2 and five 5 (Unknown) if they were struck by the same firearm and with respect to the casings marked as indication three 3 and four 4 (Unknown) were not hit by the same firearm.
8LYKAR	Our findings section is in table format so it would read: Item #1 - Compared to Items #2,3,5 - Source Identification. Item #1 - Compared to Item #4 - Source Exclusion.
8NNW9W	Items 2, 3 and 5 were fired in the same firearm as the Item 1 test fires. Item 4 was fired in a second firearm.
8PYYVW	Items no 2, 3 and 5 has been shot with a same gun as cartridgecases no 1
8TF4R6	Items #2, 3 & 5 were fired by the same gun as item #1 based on an agreement of class and individual characteristics. Item #4 is excluded from being fired by the same gun as item #1 based on a difference in class and individual characteristics.
8VLLP2	The bushings described as items-2, 3, 5, are positive with the patterns, that is, they were percuted by the firearm, type gun, caliber 380, brand Smith & Wesson, M & P BODYGUARD. The bushing described as item-4, was not perceeded by the firearm, type pistol, caliber 380, SMITH & WESSON, MODEL M & P BODGYGUARD [English translation of comments was not obtained by the time of report publication].
8XAXP7	Items #2, #3 and #5 each exhibit sufficient matching microscopic information to determine they were fired from the the same gun that generated the samples labeled item #1. Item #4 was fired by a different firearm than represented in the set from #1.
9279VQ	The Item 2, 3 and 5 cartridge cases were identified, within the limits of practical certainty <sup>1</sup> , as having been fired in the same firearm that generated the Item 1 test fired cartridge cases. The Item 4 cartridge case was not fired in the firearm that generated the Item 1 test fired cartridge cases. Items 1 through 5 represent two (2) different firearms.
929VD6	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired 380 auto caliber cartridge cases, Laboratory Items 1, 2, 3 and 5, were identified as having been fired in the same firearm. Through macroscopic/microscopic examination and based on significant

TABLE 2

WebCode	Conclusions
	disagreement of class characteristics, the fired 380 auto caliber cartridge case, Laboratory Item 4, could not have been fired in the same firearm as the fired 380 auto caliber cartridge cases, Laboratory Items 1, 2, 3 and 5.
94DN6H	I compared the three test fired cartridge cases (Item 1) from the suspect firearm with each other and found reproducing marks. I found sufficient corresponding individual microscopic marks between Item 1 and items 2, 3 and 5 to conclude that the cartridge cases Items 2, 3 and 5 were fired by the suspect firearm that fired Item 1. Item 4 has different class marks to Items 1,2,3 and 5. The suspect firearm is excluded as having fired Item 4.
96RQFW	The Items 01-01, 01-02, 01-03, and 01-05 cartridge cases were identified as having been fired in the same firearm. The Item 01-04 cartridge case was eliminated as having been fired in the same firearm as the Items 01-01, 01-02, 01-03, and 01-05 cartridge cases. The Item 01-04 cartridge case was fired in an unknown firearm capable of chambering and firing a 380 Auto caliber cartridge.
9HD3R7	(1) Based on microscopic comparison, Item 2, 3, 5 expended cartridge cases were fired in the same firearm as the test fired cases from item 1. (2)Item 4 expended cartridge case was fired in a different firearm from Item 1.
9JN6D6	The three cartridge case marked #2, #3 and #5 were compared microscopically against the three cartridge cases and were identified as having been discharged in the same firearm. The cartridge case marked #4 was compared microscopically against the three test cartridge cases and eliminated as having been discharged in the same firearm due to differences in class and individual characteristics.
9LTX7H	Items 001-2 through 001-5 are four fired PMC brand 380 Auto caliber cartridge cases. I microscopically compared each of these cartridge cases to a test-fired cartridge case from Item 001-1. I observed agreement of all discernable class characteristics with sufficient agreement of the individual characteristics to conclude that Items 001-2, 001-3, and 001-5 were fired in the same firearm that produced the test fires, Item 001-1. I observed significant differences in the class characteristics to conclude that Item 001-4 was not fired in the firearm that produced the test fires, Item 001-1.
9Q7D22	[No Conclusions Reported.]
9VZ82N	Items 1-1-1, 1-1-2, and 1-1-3 (CTS Item 1) were determined to be 380 Auto caliber fired cartridge cases and are standard cartridge cases. They were determined to be suitable for microscopic comparison. Items 1-2-1 (CTS Item 2), 1-3-1 (CTS Item 3), 1-4-1 (CTS Item 4), and 1-5-1 (CTS Item 5) were determined to be 380 Auto caliber fired cartridge cases. They were determined to be suitable for microscopic comparison. Based on agreement of all discernible class characteristics, items 1-2-1 (CTS Item 2), 1-3-1 (CTS Item 3), and 1-5-1 (CTS Item 5) cartridge cases were microscopically compared to item 1-1-3 (CTS Item 1) standard cartridge case. Items 1-2-1 (CTS Item 2), 1-3-1 (CTS Item 3), and 1-5-1 (CTS Item 5) cartridge cases were identified as having been fired by the same firearm as item 1-1-3 (CTS Item 1) standard cartridge case, in the opinion of the laboratory. These identification conclusions were based on sufficient similarities in the patterns of microscopic markings observed among the compared items. Item 1-4-1 (CTS Item 4) cartridge case was eliminated as having been fired by the same firearm that fired item 1-1-3 (CTS Item 1) cartridge case. This elimination conclusion was based on differences in class characteristics.
9XR9YY	When conducting the micro-comparative study between the cartridge cases labeled as Item 2, Item 3 and Item 5, and the "witness" cartridge cases labeled as Item 1, it is determined that all of them were hit by the caliber firearm by designation three hundred and eighty auto (.380

TABLE 2

WebCode	Conclusions
	AUTO), made by the manufacturer SMITH & WESSON, model M&P Bodyguard 380, serial number not specified. When conducting the micro-comparative study between the cartridge case labeled Item 4, and the "witness" cartridge cases labeled Item 1, it is determined that they were not hit by the same firearm.
9ZDC9H	The four 380 Auto caliber cartridge cases recovered from the scene (Items 2, 3, 4, 5) were examined and found to have been fired by two firearms. I compared the test fired cartridge cases from the Smith & Wesson M & P pistol (Item 1) to the cartridge cases (Items 2, 3, & 5) and found the same class of firearm produced marks and sufficient corresponding individual microscopic marks. The Smith & Wesson pistol (Item 1) fired the cartridge cases (Items 2, 3, 5). Item 4 had different class marks than items 1, 2, 3, 5 and was fired by a different firearm.
AJ3QPR	1. Examinations showed Items 2, 3 and 5 were discharged within the same firearm as Item 1. 2. Examinations showed Item 4 was not discharged within the same firearm as Item 1.
AM7L9V	Items 2, 3, and 5 were fired in the same firearm as Item 1. Item 4 was not fired in the same firearm as Items 1 - 3 and 5.
AWRVQW	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a pistol-type firearm brand Smith and Wesson, M&P and when performing the microscopic comparison it was determined that the expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that it was if they were hit by the aforementioned firearm, and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.
B3BDLK	Exhibit 1 (test fires), Exhibit 2, Exhibit 3 and Exhibit 5 were fired with the same firearm based on sufficient agreement of individual characteristics present. Exhibit 4 was not fired with the same firearm that fired Exhibit 1, Exhibit 2, Exhibit 3, and Exhibit 5 due to the differences in class and individual characteristics. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of the submitted evidence, the possible firearms are Glock.
B6KKQX	item 4 was not fired by the firearm items 2, 3 and 5 yes, if they were shot by the same firearm
BACPK3	Items 1 (test fired cartridge cases), 2, 3, and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Items 2, 3, and 5 were identified as having been fired from the same firearm that fired Item 1 (Smith & Wesson Bodyguard handgun). Items 1 (test fired cartridge cases), 2, 3, 4, and 5 were microscopically examined. Based on observed disagreement of class characteristics, Item 4 was eliminated as having been fired in the same firearm that fired Items 1 (Smith & Wesson Bodyguard handgun) 2, 3, and 5.
BBLUXQ	Items 2, 3, and 5 (three 380 Auto caliber cartridge cases) were identified* as having been fired by the same firearm as Item 1 (three 380 Auto caliber cartridge cases said to be test fired from a "Smith & Wesson M&P Bodyguard 380"). Item 4 (a 380 Auto caliber cartridge case) was fired by a different firearm than Item 1. *Source identification is reached when the discernable class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
BCFK2J	1. Examination of Exhibit 1 disclosed three 380 Auto cartridge cases that are test standards from a Smith & Wesson M&P Bodyguard 380 Auto pistol. 2. Examination of Exhibits 2, 3, 4 and 5 disclosed four 380 Auto cartridge cases which were visually examined and microscopically compared to the Exhibit 1 test standards. a. Microscopic comparison disclosed

TABLE 2

WebCode	Conclusions
	sufficient agreement of class and individual characteristics to conclude that Exhibits 2, 3 and 5 were fired in the same firearm as the Exhibit 1 test standards. b. Microscopic comparison disclosed significant disagreement of class characteristics to conclude that Exhibit 4 was not fired in the same firearm as the Exhibit 1 test standards.
BDY83M	The Items 2 through 5 fired 380 Auto cartridge cases and the Item 1 test fired 380 Auto cartridge cases were examined and microscopically compared to each other with the following results: Items 2, 3 and 5 were identified as having been fired in the Item 1 pistol. Item 4 was eliminated from having been fired in the Item 1 pistol due to differences in class characteristics.
BGR92F	Items A-2, A-3, and A-5 (fired cartridge cases) Microscopic comparison of these cartridge cases to test-fired cartridge cases, from item A-1, revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude they were discharged in this Smith & Wesson pistol. Items A-4 (fired cartridge case) Microscopic comparison of this cartridge case to a test-fired cartridge case, item A-1b, revealed significant differences in class of firearm-produced marks. This cartridge case was not discharged in this Smith & Wesson pistol.
BH9KKL	Using the Bayesian approach in casework we view our findings under two hypotheses, namely: H1: The questioned cartridge case is fired by the submitted firearm. H2: The questioned cartridge case is fired by another firearm of the same caliber and with the same class characteristics as the submitted firearm. The likelihood of the findings under the two hypotheses is estimated. The likelihood ratio is expressed on a verbal scale:- Approximately equally probable (LR = 1-2) - Slightly more probable (LR = 2-10) - More probable (LR = 10-100) - Much more probable (LR = 100-10,000) - Very much more probable (LR = 10,000-1,000,000) - Extremely more probable (LR = >1,000,000) - Item 2: The findings are extremely more probable when H1 is true than when H2 is true. Item 3: The findings are extremely more probable when H1 is true than when H2 is true. Item 4: The class characteristics in Item 4 differ from those in Item 1. Due to this difference the cartridge case (Item 4) cannot have been fired by the same firearm as the test fired cartridge cases (Item 1). Item 5: The findings are extremely more probable when H1 is true than when H2 is true.
BKDCCY	Expended cartridge cases 2, 3, and 5 were identified as having been fired by the suspect's gun. Expended cartridge case 4 was eliminated as having been fired by the suspect's gun.
BKWWJR	Item 1 - Three test fired cartridge cases from suspect's weapon. Item 2 - One fired cartridge case. Item 3 - One fired cartridge case. Item 4 - One fired cartridge case. Item 5 - One fired cartridge case. The submitted specimens marked as Items 2 through 5 were examined and identified as four fired 380 Auto caliber cartridge cases bearing the PMC headstamp. Items 2 through 5 were microscopically inter-compared and also compared to Item 1 test fires. As a result, Items 2, 3, and 5 were identified as having been fired in the same firearm as Item 1 test fires. Item 4 was eliminated as having been fired in the same firearm as Items 1, 2, 3, and 5 due to differences in class characteristics.
BL8X6P	Items 2, 3, and 5 were fired in the same firearm as Item 1 (identification). This is also the opinion of Firearms Examiner NAME. Item 4 was not fired in the same firearm as Item 1 (elimination). This is also the opinion of Firearms Examiner NAME.
BPM7TP	The three cartridge cases item 1, known from the suspect's weapon show stable recurring systematic and individual characteristics. The cartridge cases item 2, item 3 and item 5 from the crime scene have the same matching systematic and individual characteristics like the cartridge cases item 1. It is certain that these cartridge cases come from cartridges that were fired from the seized weapon. cartridge case item 4: The form of the firing pin/striker mark and the slide bolt face marks differ from all other cartridge cases (item 1, item 2, item 3, item 5).

TABLE 2

WebCode	Conclusions
	Though, the position and the shape of weapon's systematic characteristics on the cartridge case item 4, such as the extractor marks, are the same. Individual characteristics matches cannot be determined. The strong, regular indentation on the primer around the firing pin/striker mark probably caused by the action of a part of a weapon, unless the cartridges were reloaded and a tool had left a mark on the primer cap. It is estimated here that the cartridge case item 4 doesn't come from a cartridge that was ignited in the suspect's weapon.
BQWFGF	ITEM 2, ITEM 3, AND ITEM 5, WERE IDENTIFIED AS HAVING BEEN FIRED IN THE SAME FIREARM AS ITEM 1 (.380 AUTO SMITH & WESSON M&P BODYGUARD). ITEM 4, WAS FIRED IN A SECOND .380 AUTO FIREARM BASED ON DIFFERENCES IN CLASS CHARACTERISTICS. SUSPECT WEAPONS INCLUDE .380 AUTO GLOCK PISTOLS; HOWEVER, ANY SUSPECT WEAPON SHOULD BE SUBMITTED FOR EXAMINATION.
BXWV7N	The below listed items were macroscopically and microscopically examined and compared with test fires (Lab Evidence# 001-A1-001) from the Smith & Wesson 380 auto pistol. It is my opinion that the below listed items were fired from this firearm (identification). Lab Evidence#; Item#; Item Description; 001-A1-002 2 Spent PMC 380 auto cartridge case. 001-A1-003 3 Spent PMC 380 auto cartridge case. 001-A1-005 5 Spent PMC 380 auto cartridge case. The below listed item was macroscopically and microscopically examined and compared with test fires (Lab Evidence# 001-A1-001) from the Smith & Wesson 380 auto pistol. It is my opinion that the below listed item was not fired from this firearm (elimination). Lab Evidence#; Item#; Item Description; 001-A1-004 4 Spent PMC 380 auto cartridge case.
C6CZGZ	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The three (3) fired 380 caliber cartridge cases in items 2, 3, and 5 were determined to have been fired in the same weapon as the three (3) fired 380 caliber cartridge cases in item 1. The fired 380 caliber cartridge case in item 4 was determined not to have been fired in the same weapon as the three (3) fired 380 caliber cartridge cases in item 1. Further analysis is pending submission of another weapon for additional comparison.
CD77A2	Based on the agreement of class characteristics, test fired cartridge cases, items 1 (A, B, C) from the Smith & Wesson 380 Auto pistol were microscopically compared to items 2, 3 and 5 fired cartridge cases. Items 2, 3 and 5 were identified as having been fired by the Smith & Wesson pistol based on the sufficient agreement of individual characteristics. Based on differences in class characteristics and individual characteristics, item 4 fired cartridge case can be eliminated as having been fired by the Smith & Wesson pistol, which was identified as having fired items 2, 3 and 5. An identification conclusion is made when there is agreement of all discernible class characteristics and sufficient agreement of a combination of individual characteristics where the extent of agreement exceeds that which can occur in the comparison of toolmarks made by different tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool. An elimination conclusion is made when there is significant disagreement of class characteristics and/or individual characteristics. The above interpretations of the results of analysis are the opinion of this laboratory.
CEL33Z	Item Description Comparison Conclusion Item #1 Items #2, #3, #5 Source Identification Three (3) fired .380 Auto Three (3) fired .380 Auto cartridge cases cartridge cases Item #4 N/A Consistent with being fired by Glock pistols. Other possibilities may exist. Remarks No fired cartridge cases were entered into the NIBIN database. All evidence will be returned to the submitting agency. Analytical Detail Analytical findings offered above were determined using visual and microscopic examinations/comparisons [Participant provided a list that could not be reproduced in this report].
CFW6NY	On analysis, I found the characteristic marks on Item 2, Item 3, Item 5 to match with the

TABLE 2

WebCode	Conclusions
	characteristic marks on Item 1. I also found the characteristic marks on Item 4 to not match with the characteristic marks on Item 1.
CJWFJY	Q-2-Q-5 were microscopically examined, inter-compared, and compared to the test fires, TF1 a-c from K1. In my opinion, Q2, Q3, and Q5 are identified as being fired from K-1.
CLHX2K	Items 2,3,and 5 fired cartridge cases were microscopically examined and identified as having been fired in the Item 1 firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Item 4 was eliminated as having been fired in the Item 1 firearm due to disagreement of discernible class characteristics.
CVBDN3	A. The cartridge cases described in Items; 1, 2, 3 and 5, are caliber .380 Auto, were fired by the same firearms (Identification). B. The cartridge case described in Item: 4, is caliber .380 Auto and was fired from a firearm. C. The cartridge case described in Item: 4, no was fired by the same firearm to fired the cartridge cases, described in the Items: 1, 2, 3, and 5.
D27UEY	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired 380 Auto caliber cartridge cases, Laboratory Items 1-3, and 5, were identified as having been fired in the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired 380 Auto caliber cartridge cases, Laboratory Items 1-3, and 5, could not have been fired in the same firearm as the fired 380 Auto caliber cartridge case, Laboratory Item 4.
D2UVJQ	Items – Description/Visual Examination. Item 1: Contained three (3) fired 380 Automatic caliber cartridge cases (1A, 1B, & 1C) reportedly recovered from a Smith & Wesson Bodyguard 380 semi-automatic pistol. Item 2: One (1) fired 380 Automatic caliber cartridge cases. Item 3: One (1) fired 380 Automatic caliber cartridge cases. Item 4: One (1) fired 380 Automatic caliber cartridge cases. Item 5: One (1) fired 380 Automatic caliber cartridge cases. Microscopic Comparison Conclusions. Identification: Items 2, 3, & 5 were fired in the same firearm as Items 1A, 1B, & 1C (Smith and Wesson Bodyguard). Elimination: Item 4 was not fired in the same firearm as Items 1A, 1B, & 1C (Smith and Wesson Bodyguard), due to differences in class characteristics.
D6TCWK	The fired cartridge cases, Item 2, 3 and 5, were microscopically examined and compared with the test fired cartridge cases, Item 1. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 2, 3 and 5 are identified as having been fired in the same firearm as the test fired cartridge cases, Item 1. The fired cartridge case, Item 4, was microscopically examined and compared with the test fired cartridge cases, Item 1. Based on the observed disagreement of the class characteristics of the firing pin impressions, Item 4 is eliminated as having been fired in the same firearm as Item 1.
D6TDFW	The Item 2, Item 3 and Item 5 are IDENTIFIED as having been discharged from the same firearm as the known expended cartridge cases (item 1) submitted in this case. The Item 4 is ELIMINATED from the known expended cartridge cases (Item 1) submitted in this case.
DK6RYF	The fired cartridge cases in Items 2, 3, 4, and 5 (questioned) were microscopically compared to the test fired cartridge cases in Item 1 (known). It was determined that the cartridge cases in Items 2, 3, and 5 (questioned) were all fired from the same firearm as the test fires in Item 1 (known). The fired cartridge case in Item 4 (questioned) has agreement of discernable class characteristics and disagreement of individual characteristics, but insufficient for elimination. Therefore it is inconclusive as to whether or not the cartridge case in Item 4 (questioned) was fired in the same firearm as the test fires in Item 1 (known).
DLGMJM	The visual and microscopic analysis of the evidence cartridge cases Q1 through Q4 and three



TABLE 2

WebCode	Conclusions
	.380 auto cartridge cases test-fired with S&W M&P Bodyguard pistol (K1) was initiated on December 17, 2020. The results of the comparisons and evaluations are as follows: Based on agreement of discernible class characteristics and sufficient agreement of individual characteristics, evidence cartridge cases Q1, Q2 and Q4 are identified as having been fired with K1. Based on significant disagreement of class and individual characteristics Q3 is eliminated as having been fired with K1. Q3 has marks of value and is suitable for future microscopic comparisons. Should an additional suspect firearm be recovered, please submit and reference the above CC#. The listed evidence will be retained in the Firearms Analysis Unit's Firearms Evidence Vault. SUFFICIENT AGREEMENT- "Sufficient Agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility. Sufficient agreement is related to the significant duplication of random toolmarks as evidenced by a pattern or combination of patterns of surface contours.
DN64TU	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
DQARCC	Items 2, 3, and 5 were fired in the same firearm as the item 1 test fires. Item 4 was fired in a second firearm.
E4UQED	Cartridge Case Analysis Methodology: Physical (Visual Examination), Microscopy (Comparison Microscope). Items 2, 3 and 5, the cartridge cases, were fired in the Smith & Wesson model M&P Bodyguard 380 pistol, based upon corresponding class and individual microscopic characteristics. Item 4, the cartridge case, was not fired in the Smith & Wesson model M&P Bodyguard 380 pistol, based upon different class characteristics.
EBDTLF	SEE REPORT [No report was attached by participant].
ECL4HJ	Item 2, item 3 and item 5 were discharged from the same pistol that item 1. Item 4 was discharged from different pistol than item 1.
EEWVNE	the vanillas of item 2, 3 and 5 were struck by the firearm that struck the vanillas of item No 1. (Smith & Wesson Body Guard caliber 380 auto.)
EF7T3W	Three of the submitted cartridge cases (items 2, 3, and 5) were identified as having been fired from the same firearm that fired the "known" cartridge cases (item 1). The identification of the cartridge cases is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two firearm-produced toolmarks means that the likelihood another firearm could have made the questioned mark is so remote as to be considered a practical impossibility. The submitted cartridge case (item 4) is eliminated as being fired in the same firearm that fired item 1.
EFAFGN	The cartridge cases in Items 2, 3 and 5 were fired in the same gun that fired the cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge case in Item 4 was not fired in the same gun that fired the cartridge cases in Item 1, based on differences observed in class characteristics.

TABLE 2

WebCode	Conclusions
EGZLXE	See attached report [No report was attached by participant].
EHV622	The three expended cartridge cases recovered from the main entrance (identified as Item 2 and Item 3) and from the floor near the dressing room (identified as Item 5) were discharged from the same firearm as the known expended cartridge cases identified as Item 1 (Smith & Wesson M&P Bodyguard 380 handgun). The expended cartridge case recovered from the floor near the cash register (identified as Item 4) wasn't discharged from the same firearm as the known expended cartridge cases identified as Item 1 (Smith & Wesson M&P Bodyguard 380 handgun).
ELCMWR	1-In the comparison of the four cartridge cases from Item 2, Item 3, Item 4 and Item 5 numbered boxes, it was determined that they were divided into two groups (3-1) and fired with two different guns suitable for their diameter. 2- The three cartridge cases that came out of the Item 2, Item 3 and Item 5 boxes were fired with the gun stated to be obtained from the suspect. 3- One cartridge case coming out of the box numbered Item 4 was fired with a different weapon other than the one stated to be obtained from the suspect. NOTE: 1- The cartridge cases 9x17 mm. (380 Auto) diameter and type and are 380 Auto PMC inscription. 2- Google translation is used in the text.
EN2YVX	1. The cartridge case marked E-1 to E-3, describes en item 1, the cartridge case described in item 2 marked E-4, the cartridge case described in item 3 marked E-5 and the cartridge case described item 5 marked E-7, are .380 Auto caliber and were fired by the same firearm (Identification). 2. The cartridge case described in item 4 marked E-6, is caliber .380 Auto and was fired by a firearm. 3. The cartridge case described in item 4 marked E-6, is caliber .380 Auto and was not fired by the firearm used to fired the cartridge case marked E-1 to E-3, describes en item 1, the cartridge case described in item 2 marked E-4, the cartridge case described in item 3 marked E-5 and the cartridge case described item 5 marked E-7.
EPB49L	Examinations showed that Item 2, Item 3 and Item 5, were discharged within the same firearm as Item 1. Examinations showed that Item 4, was not discharged within the same firearm as Item 1.
EQ8GUT	The test fired cartridge cases from the Smith and Wesson pistol, specimen #1, were microscopically compared to the .380 auto caliber fired cartridge cases, specimens #2 through #5. It was determined that specimens #2 through #5 were fired in two separate weapons, due to differences in the aperture striations and the markings from the breech faces. Further examination revealed the following: Specimens #2, #3, and #5 were fired in the same weapon as the test fires from the Smith and Wesson pistol, specimen #1. Specimen #4 was fired in a second weapon.
EVHCUW	The cartridge cases in Items 2, 3 and 5 were discharged in the same firearm as the cartridge cases in Item 1. The cartridge case in Item 4 was not discharged in the same firearm as the cartridge cases in Item 1.
EWHABJ	Before examination, the cartridge cases recovered after a shooting in a department store were marked TH1 (Item 2), TH2 (Item 3), TH3 (Item 4) and TH4 (Item 5). The cartridge cases, that were collected during test firing the suspect's handgun, were marked VH1, VH2 and VH3. These cartridge cases were compared using a Leica FSC comparison Microscope. The cartridge cases bear appropriate marks that make them suitable for comparative analysis. Identification of the firearm used, based on these marks, appears to be possible. Based on the observed similarities in the individual characteristics of TH1, TH2, and TH4 compared to VH1, VH2 and VH3 it is concluded, that these questioned cartridge cases were fired in the suspect's firearm. The cartridge case marked TH3 was not fired in the suspect's firearm.

TABLE 2

WebCode	Conclusions
EWXTVG	Items 2, 3 and 5 have been fired in the weapon that fired items 1. Another weapon has been used to fire the item 4.
EY2LMU	Cartridge case 2, 3 and 5 were struck by the Smith & Wesson M&P Bodyguard 380 caliber auto short gun, meaning THERE IS IDENTITY. The Item 4 cartridge case was not strike by the Smith & Wesson M&P 380 caliber weapon, which means NO IDENTITY.
EYHHFU	Items 2, 3 and 5 were identified as having been fired by Smith & Wesson 380 handgun that was used to fire the three expended cartridge cases marked item 1. Item 4 was fired by a different firearm.
EZVEHD	The three (3) expended cartridge cases (0001-AA / Item 1) were reported as being fired from the same firearm. The three (3) expended cartridge cases (0001-AB / Item 2, 0001-AC / Item 3 and 0001-AE / Item 5) were microscopically compared to the three (3) expended cartridge cases (0001-AA / Item 1) with POSITIVE RESULTS. The 0001-AB, 0001-AC and 0001-AE expended cartridge cases were fired from the same firearm as the three (3) 0001-AA expended cartridge cases. The expended cartridge case (0001-AD / Item 4) was microscopically compared the three (3) expended cartridge cases (0001-AA / Item 1) with NEGATIVE RESULTS. Due to class characteristics differences, the 0001-AD expended cartridge case was not fired from the same firearm as the three (3) 0001-AA expended cartridge cases.
F24JXM	Item 1 - Three (3) 380 Auto caliber fired cartridge cases bearing the PMC headstamp (discharged from suspect's weapon) (1). Item 2 - One (1) fired cartridge case (2). Item 3 - One (1) fired cartridge case (3). Item 4 - One (1) fired cartridge case (4). Item 5 - One (1) fired cartridge case (5). The submitted specimens marked as Items 2 through 5 were examined and identified as four (4) fired 380 Auto caliber cartridge cases bearing the PMC headstamp. Items 1 through 5 were microscopically intercompared. As a result of microscopic comparison, it was concluded that Items 2, 3, and 5 were identified as having been fired in the same firearm that fired Item 1. Item 4 was eliminated as having been fired in the same firearm that fired Items 1, 2, 3, and 5 due to differences in class characteristics.
F48EGP	EVIDENCE SUBMITTED: Lab Item #; Agency Item #; Description; 1, F2; One (1) cardboard box containing: 1.1, F2; Testfires from one (1) Smith and Wesson model M&P Bodyguard 380, .380 Auto caliber pistol. 1.2, F2; One (1) fired PMC brand, .380 Auto caliber cartridge case. 1.3, F2; One (1) fired PMC brand, .380 Auto caliber cartridge case. 1.4, F2; One (1) fired PMC brand, .380 Auto caliber cartridge case. 1.5, F2; One (1) fired PMC brand, .380 Auto caliber cartridge case. CONCLUSIONS OF ANALYSIS: The fired cartridge case, item 1.4, was eliminated as having been fired in the Smith and Wesson pistol, item 1.1, based on a difference in class characteristics (aperture shape). The three (3) fired cartridge cases, items 1.2, 1.3, and 1.5, were each identified as having been fired in the Smith and Wesson pistol, item 1.1. Note: Identifications are based on the agreement of all discernable class characteristics and agreement of corresponding individual microscopic markings.
F48JRR	The ballistic comparison was made between the expended cartridges identified with item # 1 (known) obtained from the Smith & Wesson M&P Bodyguard 380 firearm, with the expended cartridges received identified with items # 2, # 3, # 4 and # 5 (questioned) found on stage, determining that the expended cartridge identified with items # 2, # 3 and # 5 present the equal characteristics of individualization in the percussion plane, impression of the percussion needle and impression in the extractor needle, therefore determines that these expended cartridges were hit by the same firearm and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.

TABLE 2

WebCode	Conclusions
F8BBZT	Item 1 through 5 consists of seven (7) .380 Auto caliber cartridge cases bearing the headstamp of PMC ammunition. The Item 2, 3, and 5 cartridge cases were identified as having been fired in the same firearm as the Item 1 cartridge cases. The Item 4 cartridge case was excluded as having been fired in the same firearm as the Item 1, 2, 3, and 5 cartridge cases.
FAYLZX	The three (3) fired cartridge cases, items 2, 3, and 5, were each identified as having been fired from the same firearm as the three (3) fired cartridge cases, item 1, based on agreement of class and individual characteristics. The one (1) fired cartridge case, item 4, was eliminated as having been fired in the same firearm as the six (6) fired cartridge cases, items 1, 2, 3, and 5, based on a difference of class characteristics.
FJZARV	There was sufficient firing detail present in fired cartridges 2, 3 and 5 to indicate they had been fired in the same weapon as the fired cartridge cases 1. The firing detail present on the fired cartridge case 4 indicated it had not been fired in the weapon used to create item 1 but had been discharged in a second weapon.
FLQBXJ	Item #1 test fires from Smith & Wesson pistol microscopically compared to the Items #2-3 and #5 cartridge cases, source identification. Item #1 test fires from Smith & Wesson pistol microscopically compared to the Item #4 cartridge case, source exclusion.
FNFHFU	K1-K3: 3 expended cartridge cases from suspect's gun (item 1). Q1: 1st main entrance cartridge case (item 2). Q2: 2nd main entrance cartridge case (item 3). Q3: cash register cartridge case (item 4). Q4: dressing room cartridge case (item 5). Conclusions: Examination of K1 through K3 disclosed K1 through K3 to have been fired by the same firearm. Examination of Q1 through Q4 disclosed Q1, Q2, and Q4 to have been fired by the same firearm as K1 through K3. Examination of Q3 disclosed Q3 to have not been fired by the same firearm as K1 through K3, Q1, Q2, and Q4.
FQMZEQ	2.1) Three expended cartridge cases in box labelled item 1, one expended cartridge cases in box labelled item 2, one expended cartridge cases in box labelled item 3, one expended cartridge cases in box labelled item 4 and one expended cartridge cases in box labelled item 5 are calibre 380 AUTO. 2.2) The results of analysis and comparison of (1) expended cartridge cases in box labelled item 2, (1) expended cartridge cases in box labelled item 3, (1) expended cartridge cases in box labelled item 4 and (1) expended cartridge cases in box labelled item 5 found that it has two characteristics individual features. 2.3) The results of analysis and comparison of (1) expended cartridge cases in box marked item 2, (1) expended cartridge cases in box marked item 3 and (1) expended cartridge cases in box marked item 5 found that it has same characteristics individual features. Therefore my conclusion and finding it was fired from one weapon/gun.
FVGW3G	1. PISTOL SMITH&WESSON MP BODYGUARD CALIBER 9X17MM (380 AUTO)SERIAL NUMBER ????? FIRED CC'S THAT INSCRIBED ITEM#2, ITEM#3 AND ITEM#5. 2. PISTOL SMITH&WESSON MP BODYGUARD CALIBER 9X17MM (380 AUTO)SERIAL NUMBER ????? DID NOT FIRED CC THAT INSCRIBED ITEM#4.
FVUQGW	Findings- Item 1: Test fires from Smith & Wesson pistol. Items 2, 3, and 5: Three (3) fired 380 Auto cartridge cases - Source Identification (to item 1). Item 4: One (1) fired 380 Auto cartridge case - Source Exclusion (to item 1) - consistent with Glock model 42 pistols. Other possibilities may exist. Remarks No fired cartridge cases were entered into the NIBIN database. All evidence will be returned to the submitting agency. Analytical Detail: Analytical findings offered above were determined using visual and microscopic examinations / comparisons.
FVZPVE	A- Items 2, 3 and 5 were fired from the same firearm. B-Items 2 and 3 and 5 were fired from the evidence firearm. C-Items 4 was fired from the other firearm.

TABLE 2

WebCode	Conclusions
FYF8YG	Items 2, 3, and 5 were fired in the same firearm as the item 1 test fires. Item 4 was fired in a second firearm.
G6W8PD	Exhibits 1.2, 1.3 and 1.5 were fired from the same firearm as Exhibit 1.1 based on sufficient agreement of individual characteristics observed. Exhibit 1.4 was eliminated from having been fired from the same firearm which fired Exhibit 1.1 based on differences in class characteristics. Suspect weapons for Exhibit 1.4 include .380 Auto Glock model 42 pistols; however, any suspect weapon should be submitted to the laboratory for examination.
G793AK	Items 2, 3, and 5 (three 380 Auto caliber cartridge cases) were identified* as having been fired by the same firearm as Item 1 (three 380 Auto caliber cartridge cases said to have been fired by a Smith & Wesson Model M&P Bodyguard 380 Auto caliber pistol). Item 1 and Item 4 (a 380 Auto caliber cartridge case) were not fired by the same firearm. *Source identification is reached when the discernible class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
GDEGDA	The reported test-fired cartridge cases, item 1, were compared to the discharged cartridge cases in items 2, 3, and 5, using a comparison microscope. In my opinion, all three discharged cartridge cases were fired in that gun, due to agreement of class characteristics and significant agreement of individual characteristics (assuming that there are no sub-class characteristics concerns). The reported test-fired cartridge cases in item 1 were compared to the discharged cartridge case, item 4, using a comparison microscope. In my opinion, that cartridge case was not fired in the same firearm that discharged the cartridge cases in item 1 due to significant differences in class characteristics. In my opinion, based on this examination two firearms were involved in this incident.
GUFJVE	The Item number 1-1 test fires were microscopically compared to Item numbers 1-2, 1-3, and 1-5 and found to have areas of corresponding individual characteristics. These three cartridge cases were identified as having been fired in the test fired pistol. The Item number 1-1 test fires were microscopically compared to Item number 1-4 and found to have different class characteristics. Item number 1-4 was eliminated as having been fired in the test fired pistol. Firearms that are known to produce markings similar to those found on Item number 1-4 are manufactured by Glock and Smith & Wesson. It should be noted this is not an all-inclusive list and any suspect .380 Auto caliber firearm may be submitted along with Item number 1-4 for further examination.
GYU2BB	The Item 2, 3 and 5 cartridge cases were Identified to the Item 1 cartridge cases. The Item 4 cartridge case was Eliminated from the Item 1, 2, 3 and 5 cartridge cases based on difference in class characteristics. The Item 4 cartridge case displays class characteristics consistent with pistols by Glock (model 42).
H4KQBE	#2, #3, & #5- These fired cartridge cases were compared microscopically to the test fired cartridge cases from Item #1. Based on the agreement of all discernible class characteristics and sufficient agreement of corresponding individual characteristics, Items #2, #3, & #5 have all been identified as having been fired in the same firearm that fired Item #1 tests. #4- Based on differences in class characteristics, this cartridge case is eliminated as having been fired in the same firearm as the known test fires from Item #1.
H6WP6N	Marked with item 2, item 3 and item 5 cartidges are discharged from item 1 (suspect's weapon). Marked with item 4 cartidge is not discharged from item 1.
HD8RQN	As a result of examinations, Three expended cartridge cases (Item 2, Item 3 and Item 5) discharged from suspects weapon (Smith Wesson MP Bodyguard 380 handgun). And the

TABLE 2

WebCode	Conclusions
	remaining expended cartridge case (Item 4) discharged with another unknown weapon.
HDM9JW	Item 1 contains three (3) fired 9mm Luger caliber cartridge cases, PMC brand. Items 2, 3, and 5 are three (3) fired 9mm Luger caliber cartridge cases, PMC brand. Based on the agreement of class characteristics, these cartridge cases were microscopically compared. The cartridge cases from Items 1, 2, 3, and 5 were identified as having been fired from the same firearm. Item 4 is one (1) fired 9mm Luger caliber cartridge case, PMC brand. Based on the agreement of caliber, this cartridge case was microscopically compared to a cartridge case from Item 1. Item 4 could not have been fired from the same firearm as the cartridge case from Item 1 based on the significant disagreement of class characteristics.
HJDHTU	There are two (2) firearms represented by the evidence cartridge cases. Through microscopic examination and comparison, it was determined that: Items 2, 3 and 5 were fired in the same firearm as Item 1. Item 4 was fired in a second firearm.
HL22UR	The cartridge cases item 2, 3 and 5 are IDENTIFIED with the cartridge cases of item 1 that were obtained from the firearm brand SMITH & WESSON M & P bodyguard 380.
HMZZBF	The fired cartridge cases of items #2, 3, and 5 were microscopically identified as having been fired in the Smith & Wesson pistol of item #1. The fired cartridge case of item #4 was microscopically eliminated from having been fired in the Smith & Wesson pistol of item #1.
HUV3DQ	item 4 was not fired by the firearm items 2, 3 and 5 if they were shot by the same firearm
HW3HLH	Items #2, #3, and #5 were microscopically examined and compared to Item #1 (test fire). Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #2, #3, and #5 are identified as having been from in the same firearm as Item #1 (test fire). Item #4 and Item #1 (test fire) were microscopically examined and compared. Based on the observed disagreement of class and individual characteristics, Item #4 and Item #1 (test fire) are eliminated as having been fired in the same firearm.
HZX9TU	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The three (3) fired 380 caliber cartridge cases in items 2, 3, and 5 were determined to have been fired in the same weapon as the three (3) known fired 380 caliber cartridge cases in item 1. The fired 380 caliber cartridge case in item 4 was determined not to have been fired in the same weapon as the three (3) known fired 380 caliber cartridge cases in item 1. Further analysis of the fired 380 caliber cartridge case in item 4 is pending submission of a weapon for additional comparisons.
JA67EC	The cartridge case from item 4 has been fired from an other firearm which could be an semi-automatic pistol Glock 42.
JAHYRR	The questioned expended cartridge cases(item 2,3 & 5) were discharged from the suspect's firearm as the known expended cartridge cases(item 1). The questioned expended cartridge case(item 4) was not discharged from the suspect's firearm.
JD6GAC	The comparisons between the cartridge cases under items 2, 3, 4 and 5, recovered from the crime scene, and the cases recovered from the firing tess of the Smith & Wesson 380 Bodyguard pistol seized from the suspect lead us to the following conclusions: the cases from items 2, 3 and 5 were fired in this pistol. the case from item 4 was not. It was very likely fired in a Glock 42 pistol.
JFTT9H	Item 1 consists of three (3) fired .380 Auto caliber cartridge cases, PMC brand that were submitted as known. Items 2, 3, and 5 are three (3) fired .380 Auto caliber cartridge cases, PMC brand that were microscopically compared to the Item 1 (known) cartridge case and

TABLE 2

WebCode	Conclusions
	identified as having been fired in the Item 1 (known) firearm. Item 4 is one (1) fired .380 Auto caliber cartridge case, PMC brand that was microscopically compared to the Items 2, 3, 5 and Item 1 (known) cartridge case and was eliminated as having been fired in the Item 1 (known) firearm due to differences in class characteristics.
JPYXYD	Items 1,2,3, and 5 were compared microscopically with each other. there is agreement of all discernible class characteristics and sufficient agreement of individual characteristics for identification. They were fired in the same firearm. Item 1 and 4 are eliminated as having been fired in the same firearm due to differing class characteristics. Item 4 is suitable for microscopic comparison.
JQQXWN	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a pistol-type firearm brand Smith and Wesson, M&P and when performing the microscopic comparison it was determined that the expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that it was if they were hit by the aforementioned firearm, and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.
JUR4A9	Realizado EL estudio comparativo de los casquillo incriminados con los de referencia se establece que: con el arma de fuego corta marca SMITH And Wesson Bodyguard calibre .380 auto, fueron percutidos los casquillos correspondientes a los ítem 2, 3 y 5 [English translation of comments was not obtained by the time of report publication].
JXAWTN	Microscopic comparison made between recovered Cartridge Cases Items 2, 3, 4 & 5 with the following results: Items 2, 3 & 5 were POSITIVE to each other and discharged from the same (one) Firearm. Item 4 was fired from a different (second) Firearm. Microscopic comparison was made between Test Shot Cartridge Cases from Smith & Wesson M&P Bodyguard 380 (Item 1) and submitted discharged Cartridge Cases Items 2, 3 & 5 with POSITIVE results. Items 2, 3 & 5 were discharged from the submitted Firearm.
K278Z9	Through the use of microscopic comparisons, it was determined that the three cartridge cases (Items 2, 3, and 5) WERE FIRED from the Smith & Wesson pistol (Item 1). Through the use of microscopic comparisons, it was determined that one cartridge case (Item 4) WAS FIRED from a different firearm than the other Items – Firearm #2.
K4VCWL	From the sample that had been received, it can be concluded that three expended cartridge (item 2, 3 & 5) that had been recovered from the crime scene have same characteristics as three expended cartridge (item 1) that had been discharged from the firearm (Smith & Wesson M&P Bodyguard 380) which had been seized from the suspect. Meanwhile, one expended cartridge (item 4) did not have same characteristics as three expended cartridge (item 1). Therefore, from the comparison and finding, it can be conclude that 2 firearm are been used in the crime scene including the suspect firearm that had been seized.
K8UMTL	The Item 2, 3, and 5 cartridge cases were microscopically compared with the Item 1 test fired cartridge cases and determined to have similar class characteristics and sufficient agreement of individual characteristics for an identification. Therefore, Items 2, 3, and 5 were fired in the same firearm which fired the Item 1 test fired cartridge cases. The Item 4 cartridge case was microscopically compared with the Item 1 test fired cartridge cases and determined to have disagreement of some class characteristics. Therefore, Item 4 was not fired in the same firearm which fired the Item 1 test fired cartridge cases.
KDLUBU	In my opinion, a microscopic comparison of firing marks has shown that there is sufficient

TABLE 2

WebCode	Conclusions
	agreement of class and individual characteristic markings to conclusively determine that the cartridge case items 2, 3 and 5 have been discharged in the same firearm (Gun 1). In my opinion, there is some agreement of class characteristic markings, but significant disagreement of individual characteristic markings, therefore item 4 was discharged in a different firearm (Gun 2). The test fired items (Item 1) have been microscopically compared against items 2, 3, 4 and 5. In my opinion, items 2, 3 and 5 (Gun 1) were discharged from the same firearm as the known discharged cartridge cases (Item 1). In my opinion, item 4 (Gun 2) was discharged in a different gun (outstanding).
KGYXZB	The firearm that fired tests item 1 is identified as having fired items 2, 3 and 5. The firearm that fired tests item 1 is eliminated from having fired item 4.
KJLG29	See attached report [No report was attached by participant].
KLFZ6V	The cartridge cases identified "Item 2", "Item 3" and "Item 5" were discharged from the same firearm as the known bullets (Item 1). The cartridge case identified "Item 4" were not discharged from the same firearm as the known bullets (Item 1).
KLUN7M	The test fired cartridge cases from the Smith and Wesson pistol, specimen #1, were microscopically compared to the .380 auto caliber fired cartridge cases, specimens #2 through #5. It was determined that specimens #2 through #5 were fired in two separate weapons, due to differences in the aperture striations and breech face markings. Further examination revealed the following: Specimens #2, #3, and #5 were fired in the same weapon as the test fired cartridge cases, specimen #1. Specimen #4 was fired in a second weapon.
KYZMAM	1. The (item 5) cartridge case was discharge by the same known firearm that discharge the (item 1) cartridge cases. 2. The (item 2) cartridge case was discharged by the same unknown (1) firearm that discharge the (item 3) cartridge case. 3. The (item 4) cartridge case was discharged by unknown (2) firearm.
L8TCAN	Se procedió a realizar el procedimiento de cotejo microscópico entre las tres vainillas patrón calibre .380 auto, recibidas para estudio, identificadas como Ítem 1 y las vainillas incriminadas identificadas como Ítem 2, Ítem 3, Ítem 4 y Ítem 5, encontrando dos grupos de vainillas conformados así: Grupo uno: Conformado por las vainillas identificadas como Ítem 2, Ítem 3 y Ítem 5, se determina que presentan características microscópicas de identidad entre sí, es decir que fueron percutidas por una misma arma de fuego. Grupo dos: Conformado por la vainilla marcada como ítem 4, la cual presenta características de identidad, pero diferentes a la del grupo número uno, por lo cual se determina que fue percutida por un arma de fuego diferente [English translation of comments can be found in Table 3 - Additional Comments].
LAW8UQ	Items 1 (test fired cartridge cases), 2, 3, and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Items 2, 3, and 5 were identified as having been fired in the same firearm that fired Item 1 (Smith & Wesson pistol). Items 1 (test fired cartridge cases) and 4 were microscopically examined and compared. Based on observed disagreement of class and individual characteristics, Item 4 was eliminated as having been fired in the same firearm that fired Item 1 (Smith & Wesson pistol).
LF8YLD	[No Conclusions Reported.]
LFMH4P	Items 1, 2, 3, and 5 cartridge cases were all fired by the same firearm. The firearm that fired Items 1, 2, 3, and 5 cartridge cases did not fire Item 4 cartridge case. Item 4 is consistent with



TABLE 2

WebCode	Conclusions
LGCVL8	<p>having been fired in a 380 Auto caliber firearm. Class characteristics present are consistent with cartridge cases fired from Glock Model "42" 380 Auto caliber pistols; other firearm makes and models should be considered.</p>
LHAYLA	<p>Forensic Analysis Report: Microscopic examination of (Item 1) known test fired casings produced by M&amp;P Bodyguard 380 handgun (unknown serial number) was inter-compared and determined to have sufficient microscopic detail for a comparison. It was determined that (Item 1) known test fired casings was identified as being fired out of the same M&amp;P Bodyguard 380 handgun (unknown serial number). Microscopic examination of (Item 1) known test fired casing were inter-compared to the questioned casings in (Item 2), (Item 3), (Item 4), and (Item 5). It was determined that the casings in (Item 2), (Item 3), (Item 4), and (Item 5) were the same class ammunition. However, (Item 2), (Item 3), and (Item 5) were fired in the same firearm as (Item 1) known test fired casing. Further examination disclosed that (Item 4) lack sufficient detail for an identification.</p>
LQ43ML	<p>The items 2, 3 and 5 cartridge cases are identified as being fired in the same firearm that fired the item 1 cartridge cases. The Item 4 cartridge case is eliminated as being fired in the same firearm that fired the item 1 cartridge cases.</p>
LVWBP8	<p>1) all items (2,3,4,5) are calibrated 380 ammunition. 2) microscopic test cartridge case: a) three cartridge case items(2,3,5) were fired from the same firearm. b) one cartridge case item (4) was fired from different firearm. 3) by performing microscopic comparison test (using FSC comparison microscope) between three cartridge case items (2,3,5) and test fired cartridge case item (1) we found that there are matched. 4) but cartridge case item (4) was not matched with test fired cartridge case item (1) and it was fired from another firearm</p>
LYWLK7	<p>The test fired cartridge cases in Item 1 were microscopically examined in conjunction with the cartridge cases in Items 2-5 (4 total). Based on these comparative examinations and observed class and individual characteristics, it was determined that: A) The cartridge cases in Items 2, 3, and 5 (3 total) had all been fired in the same firearm as the test fired cartridge cases in Item 1. B) The cartridge case in Item 4 bears no marks to link it to the same firearm as the test fired cartridge cases in Item 1.</p>
M6E88J	<p>Accomplished the comparing the four cartridge case with the standard samples obtained from the Smith and Wesson M&amp;P Bodyguard 380 firearm, it was established that items 2, 3 and 5 were discharge by the recovered weapon, item 4 was struck by another weapon, compatible with its caliber.</p>
MCY76J	<p>A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&amp;P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.</p>
MCY76J	<p>Conclusion from the Item 1 are using handgun Smith &amp; Wesson three rounds of PMC @ Bronze 380 ammunition which the result are same as Item 2 ,Item 3 and Item 5 except Item 4 are different because the individual characteristic are not same 7 casing marked AJ1,AJ2,AJ3,AJ4,AJ5,AJ6 and AJ7 is done. AJ1, AJ2,AJ3,AJ4,AJ5,AJ7 are fired from one (1) gun of the same 380 auto calliber and in this case they are 2 gun involved. Firearms 1: ITEM 1,ITEM 2,ITEM 3,ITEM 5. Firearms 2: ITEM 4</p>

TABLE 2

WebCode	Conclusions
MDB8H6	After comparing the cartridge cases identified as item 2, 3 and 5, it is concluded that these were fired by the suspicious weapon (ITEM 1), the cartridge case identified as item 4 was fired by another weapon. It is concluded that two firearms were used in the events.
MLL947	Examined and compared microscopically of the cartridges case item 1 (obtained from the suspect weapon) and the four cartridges case items 2, 3, 4 and 5, based on the micro-scratch present on the bottom of the cartridges, due to the anterior face of the locking block, firing pin, the ejector and extractor of the firearm, it was established that the cartridges case items 2, 3 and 5 were fired from the suspect weapon.
MRE9L8	See attached report [No report was attached by participant].
MT7MQC	The items 2, 3 and 5 were fired by the suspect's weapon (item 1) ; item 4 was fired by another unknown weapon
MUXMNM	GROUP 1 (ITEMS: 1.1, 1.2, 1.3), CORRESPOND TO CALIBER 380 AUTO. AND THEY ARE IDENTIFIED AS WITNESS CAPS, OBTAINED FROM THE PROBLEM FIREARM: SMITH & WESSON BRAND PISTOL, M&P BODYGUARD MODEL, CALIBER 380. GROUP 2 (ITEMS: 2, 3, 5), CORRESPOND TO CALIBER 380 AUTO. THEY ARE IDENTIFIED AS PROBLEM CAPS, DEFLAGRATED BY THE SAME FIREARM (THE PROBLEM WEAPON DESCRIBED: SMITH & WESSON PISTOL, MODEL M&P BODYGUARD, CALIBER 380). GROUP 3 (ITEM: 4), CORRESPONDS TO CALIBER 380 AUTO. IT IS IDENTIFIED AS A PROBLEM CAP, DEFLAGRATED BY ANOTHER FIREARM, DIFFERENT FROM THE PROBLEM WEAPON.
MVEF6K	[No Conclusions Reported.]
MXJ678	Exhibits 1.2, 1.3, and 1.5 were fired from the firearm that discharged Exhibit 1.1 based on sufficient agreement of individual characteristics. Exhibit 1.4 was not fired from the firearm that discharged Exhibit 1.1 based on differences in class characteristics.
N37ETB	Cartridge Case Analysis: Methodology (Comparison Microscopy) Items 1, 2, 3, and 5, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Item 4, the cartridge case, was not fired in the same firearm as Items 1, 2, 3, and 5, the cartridge cases, based upon different class characteristics.
N3P3B7	A microscopic comparison was made of the cartridges of the weapon and those recovered in the place, observing the following: Samples numbered 2,3 and 5 present the same characteristics of percussion, chamber closure and extractor, for which it is concluded that they were used by the recovered weapon. Sample numbered 4 presents a larger percussion footprint but similar individualizing characteristics are observed in the chamber closure, extractor and somewhat partially in the drag footprint and percussion plane in general, which suggest that it is also positive but does not allow observing its continuity
NCXTWG	Six of the cartridge cases (Items 1, 2, 3, and 5) were fired by the same firearm. One of the cartridge cases (Item 4) was fired by a different firearm than six of the cartridge cases (Items 1, 2, 3, and 5).
NDNYC8	SUBMISSIONS 2, 3, and 5: The cartridge cases were identified to the submission 1 firearm. SUBMISSION 4: The cartridge case was eliminated from the submission 1 firearm. NOTES: 1. Only those items discussed above were examined for this report. 2. All items of evidence submitted for analysis will be returned to the Palm Beach County Sheriff's Office Evidence Unit, unless otherwise noted. 3. All firearms were visually examined and test fired unless otherwise noted. 4. The method of testing for ammunition components included visual examination and microscopic comparisons. 5. The test results for the above listed items fall into one of the four

TABLE 2

WebCode	Conclusions
	<p>conclusions listed below: a. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. b. Inconclusive: Could not be Identified or Eliminated. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition, cartridge cases and projectiles fired in the same firearm are sometimes not identifiable as such. c. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from that same firearm. d. No Value/Unsuitable for Microscopic comparison: The item lacks individual characteristics for microscopic comparison. This might also include items that did not come from ammunition or ammunition components.</p> <p>6. When applicable, all NIBIN correlations and leads were viewed and/or generated by the ATF correlation center.</p>
NFUGB4	<p>Comparison microscope examinations were conducted and the findings of this examiner are as follows: Casings M, N and P (Items 2, 3 and 5) were identified as being fired in the submitted .380 Auto Smith &amp; Wesson pistol, model M&amp;P Bodyguard, serial number unknown (Item 1). Casing O (Item 4) was fired in a second .380 Auto pistol. Suspect weapons include Smith &amp; Wesson pistols; however, any suspect weapon should be submitted to the laboratory for analysis.</p>
NMVT9L	<p>The questioned cartridge cases collected from the crime scene (Item 2, Item 3 and Item 5) are fired with the suspect firearm The questioned cartridge case collected from the crime scene (Item 4) is not fired with the suspect firearm</p>
NTK7BA	<p>Items 1, 2, 3 and 5 were microscopically compared to each other based on the agreement of class characteristics. The 380 Auto caliber fired cartridge cases were identified as having been fired by the same firearm due to sufficient agreement of individual characteristics. Based on differences in class characteristics, the Item 4 380 Auto caliber fired cartridge case was eliminated as being fired from the same firearm as Items 1, 2, 3 and 5. The class characteristics are consistent with those known to be produced by Glock Gen5 and Smith &amp; Wesson M&amp;P series pistols. The significance of these identifications is made to the practical, not absolute, exclusion of all other firearms.</p>
NVAHAE	<p>The following results are the opinion of this examiner: The 380 Auto cartridge cases (Items 1, 2, 3 and 5) were all fired in the same firearm. The remaining 380 Auto cartridge case (Item 4) was fired in a second firearm.</p>
NXDDTH	<p>Items 001-02 through 001-05 were examined and microscopically compared to the Item 001-01 fired cartridge cases with the following results: Items 001-02, 001-03 and 001-05 were identified as having been fired in the same firearm as the Item 001-01 cartridge cases. Item 001-04 was eliminated as having been fired in the same firearm as the 001-01 fired cartridge cases.</p>
NZ69FQ	<p>All the 3 Known cartridges of ITEM 1 were compared and visualize in the Comparison microscope, and one of them is chosen as Control. All the questioned cartridges (ITEM: 2, 3, 4 and 5) were compared against the control (ITEM 1) in the comparison microscope. After comparing in the microscope it can be said that the Item 2, Item 3 and Item 5 are discharged from the same firearm as the known expended cartridge case (ITEM 1), whereas ITEM 4 is fired from different firearm.</p>
NZH3U6	<p>Exhibits 1 through 5 consist of seven (7) caliber .380 Auto fired cartridge cases bearing the PMC headstamp. Based on agreement of all discernible class characteristics and sufficient correspondence of individual characteristics, the Exhibit 1, 2, 3, and 5 cartridge cases were identified as having been fired in the same firearm. An identification conclusion indicates the</p>

TABLE 2

WebCode	Conclusions
	probability that Exhibits 1, 2, 3, and 5 were fired in a different firearm is so small that it is negligible. The Exhibit 4 cartridge case was excluded as having been fired in the same firearm as Exhibits 1, 2, 3, and 5 based on differences in class characteristics.
P3MQBG	The first cartridge case "from the main entrance" (Item 01-02), second cartridge case "from the main entrance" (Item 01-03) and the cartridge case "from the floor near the dressing room" (Item 01-05) were fired by the "Smith & Wesson M&P Bodyguard 380". The remaining cartridge case "from the floor near the cash register" (Item 01-04) was eliminated from the "Smith & Wesson M&P Bodyguard 380" due to differences in class characteristics. Firearms with similar class characteristics as those on the cartridge case (Item 01-04) include but are not limited to Glock pistols and Smith & Wesson model M&P Shield pistols.
P6RFB4	The expended cartridge cases contained in laboratory evidence items 1 and 4 were microscopically compared to each other with the following results. Laboratory evidence items 1 and 4 were all excluded as having been fired from the same firearm. The expended cartridge cases contained in laboratory evidence items 1, 2, 3 and 5 were microscopically compared to each other with the following results. Laboratory evidence items 1, 2, 3 and 5 were all identified as having been fired from the same firearm.
PBFYV8	It was determined by stereomicroscopic examination that the fired 380 Auto caliber cartridge cases in Items 2 through 5 each exhibit sufficient toolmark information for comparison. Items 2, 3, and 5 were microscopically compared to the test fired cartridge cases in Item 1. It was determined that Items 2, 3, and 5 were fired in the same firearm as the Item 1 test fires. Item 4 was microscopically compared to the test fired cartridge cases in Item 1 and it was determined that Item 4 was not fired in the same firearm as the Item 1 test fires.
PF8BPH	The three cartridge cases in Item #1 were microscopically inter-compared and used for comparison purposes. The Item #2, 3 and 5 cartridge cases were identified as having been fired in the same firearm that fired the Item #1 cartridge cases. The item #4 cartridge case was excluded as having been fired in the same firearm that fired the Item #1 cartridge cases.
PHFKLL	Items(#2, #3, #4, #5) were microscopically examined to each other. Based on these comparative examinations and observed class and individual characteristics, it was determined that; Item #2, #3, and #5 were discharged from the same firearm as the known expended cartridge cases(Item #1).
PN46N2	Items 2, 3, and 5 were microscopically identified as having been fired in the same firearm as Item 1. Item 4 was eliminated as having been fired in the same firearm as Item 1.
PX9C42	Items 001-2 through 001-5 are PMC brand 380 Auto caliber fired cartridge cases. I microscopically compared the four fired cartridge cases to one of the cartridge cases (Item 001-1A) reportedly test fired from the Smith & Wesson brand, model M&P Bodyguard, 380 Auto caliber pistol. I observed agreement of all discernable class characteristics with sufficient agreement of individual characteristics to conclude Items 001-2, 001-3, and 001-5 were fired from the Smith & Wesson pistol. Due to significant disagreement of class characteristics, I concluded Item 001-4 was not fired from the Smith & Wesson pistol.
Q8UV28	The cartridge cases identified above as Items 2 through 5 were microscopically compared to the test fired cartridge cases contained in Item 1. The comparisons disclosed that Items 2, 3, and 5 were fired in the same firearm that generated the test fired cartridge cases contained in Item 1 based on agreement of all discernable class characteristics and agreement of individual detail. The firearm that generated the test fired cartridge cases contained in Item 1 was eliminated as a possible firing source of Item 4 based on distinct class characteristic differences.

TABLE 2

WebCode	Conclusions
QBB2XG	The Smith and Wesson pistol, specimen #1, was test fired using material from the laboratory collection and was found to be operable. The reference fired cartridge cases obtained were compared to the fired .380 auto caliber cartridge cases, specimens #2 through #5. The following was determined: Specimens #2, #3 and #5 possessed the same class characteristics as well as sufficient agreement of individual markings to the test fired material to determine that they were fired in specimen #1. Specimen #4 possessed different class characteristics from specimens #1, #2, #3 and #5 and was fired in a second weapon.
QD4WKP	1-Cartridge cases identified as item 2, item 3, and item 5, have been fired by the Smith&Wesson M&P Bodyguard .380 AUTO caliber firearm. 2-Cartridge case identified as item 4 have not been fired by the Smith &Wesson M&P Bodyguard .380 AUTO caliber firearm.
QR3YZC	Comparisons: The evidence cartridge cases were examined and microscopically compared to the test fired cartridge cases that were reportedly test fired in a Smith & Wesson M&P Bodyguard 380 Auto pistol with the following results: Three cartridge cases (Lab Items 2, 3, and 5) were identified as having been fired in the Smith & Wesson pistol due to sufficient agreement of class and individual characteristics. One cartridge case (Lab Item 4) was eliminated as having been fired in the Smith & Wesson pistol due to differences in class characteristics.
QVXP99	Microscopic comparison examinations were conducted between QC-1, QC-2, QC-3, QC-4 and test cartridges fired in K-1, resulting in the conclusions: QC-1, QC-2 and QC-4 were fired in K-1. This conclusion was based on sufficient agreement of individual characteristics. QC-3 was not fired in K-1. This conclusion was based on a difference in class characteristics.
QYGPJH	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
R2K3KG	Item 1 includes three (3) cartridges cases reportedly fired from a .380 Auto caliber Smith & Wesson pistol, Model M&P Bodyguard 380. Item 2 through Item 5 are four (4) .380 Auto caliber cartridge cases that bear the headstamp of PMC ammunition. The Item 2, Item 3, and Item 5 cartridge cases were identified as having been fired in the same firearm as the Item 1 cartridge cases. The Item 4 cartridge case was excluded as having been fired in the same firearm as the Item 1 cartridge cases.
R4B2YE	In relation to the microscopic study between the discharged unknown cartridge cases (item 2, item 3, item 4 and item 5) and the known cartridge case (item 1): FIRST CONCLUSION: Based on the results of the study, we concluded that the discharged cartridge cases (item 2, item 3 and item 5) have been discharged by the same pistol,Smith & Wesson Body Guard 380 (SCALE CONCLUSION:IDENTIFICATION). A IN OUR SCALE SECOND CONCLUSION: Based on the same study, we concluded that the discharged cartridge case (item 4) has not been discharged by the pistol Smith & Wesson Body Guard 380 (SCALE CONCLUSION:EXCLUSION). E IN OUR SCALE.
R8AEL4	Comparative examinations of Item 1 (three 380 Auto caliber cartridge cases said to be from suspect firearm; a Smith & Wesson M&P Bodyguard) to Items 2, 3 and 5 (three 380 Auto caliber cartridge cases) showed the presence of matching features. *This means that Items 2, 3

TABLE 2

WebCode	Conclusions
	and 5 are consistent with having been fired in the same firearm as Item 1. Comparative examination of Item 1 to Item 4 (380 Auto caliber cartridge case) showed the presence of different class characteristics. This means that Item 4 was not fired in the same firearm as Item 1. *Source identification is reached when the discernable class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
RAXQKA	Items 2, 3, and 5 were discharged within the same firearm as the cartridge cases contained in Item 1. Item 4 was not discharged within the same firearm as the cartridge cases contained in Item 1.
RCNX2Z	Submissions 001-2 through and 001-5 fired cartridge cases were microscopically compared. Based on agreement in class characteristics and sufficient agreement in individual characteristics submissions 001-2, 001-3 and 001-5 fired cartridge cases were identified as having been fired in the same firearm. Based on disagreement in individual characteristics submission 001-4 was eliminated as having been fired in the same firearm as submissions 001-2, 001-3 and 001-5. Submissions 001-2 and 001-3 fired cartridge cases were microscopically compared to submissions 001-1a through 001-1c test fired cartridge cases. Based on agreement in class characteristics and sufficient agreement in individual characteristics submissions 001-2, 001-3 and 001-5 fired cartridge cases were identified as having been fired in the same firearm as submissions 001-1a through 001-1c fired cartridge cases (reported as having been test fired in a Smith & Wesson M&P Bodyguard 380 handgun). The submitted evidence is being returned to your agency.
RFN2V9	The fired cartridge cases, Item 2, Item 3 and Item 5, were identified as having been fired in the same firearm as the test fired cartridge cases, within Item 1, based on agreement of class characteristics and sufficient agreement of individual characteristics within the breech face impression marks and aperture shearing. The fired cartridge case, Item 4, was eliminated from having been fired in the same firearm as the test fired cartridge cases, within Item 1, based on disagreement of class characteristics.
RLCTZF	The comparison of the ballistic identification prints of the reference casing with those incriminated, with the support of the comparison microscope and the IBIS system, allowed us the following conclusions: 1/ the incriminated cartridges cases 2.3.5, were fired by the Bodyguard pistol smith&wesson M&P, of caliber 380. 2/the cartridge case 4 ,wasn't fired by same pistol.
RLPH28	The results speaks extremely strong that Item2, Item3 and Item 5 has been fired in the same weapon as Item 1. The results speaks extremely strong that Item4 has NOT been fired in the same weapon as Item 1.
RLT6HL	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired 380 Auto caliber cartridge cases, Laboratory Items 1-3 and 5, were identified as having been fired in the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired 380 Auto caliber cartridge case, Laboratory Item 4, could not have been fired in the same firearm as the fired 380 Auto caliber cartridge cases, Laboratory Items 1-3 and 5.
RNXP97	The three (3) 380 Auto fired cartridge cases, items #2, #3 and #5, were microscopically compared with the three (3) 380 Auto fired cartridge cases reported as having been test fired by a Smith & Wesson pistol, item #1. These comparisons revealed matching individual breech face characteristics, confirming that items #2, #3 and #5 were fired by the same firearm as item #1. The one (1) 380 Auto fired cartridge case, item #4, was microscopically compared

TABLE 2

WebCode	Conclusions
	with the three (3) 380 Auto fired cartridge cases reported as having been test fired by a Smith & Wesson pistol, item #1. These comparisons revealed different class characteristics (firing pin aperture shape) excluding item #4 as having been fired by the same firearm as item #1. Based on the class characteristics observed (teardrop shaped aperture mark) the one (1) 380 Auto fired cartridge case, item #4, is consistent with having been fired by a Glock model 42 pistol. Other possibilities may exist.
RQL7HE	A ballistic comparison was made with the expended cartridges of items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson pistol-type firearm, M&P, and when making the comparison Microscopically, it was determined that the expended cartridges identified in items 2 and 5 present the same class and individualization characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the spent cartridges of item No. 1, concluding that if they were hit by the aforementioned weapon, and the expended cartridges of items No. 3 and 4 do not present the same class characteristics and individualization characteristics, therefore it is determined that these expended cartridges were not struck by the aforementioned weapon.
RQM28C	Items 1B, 1C and 1E were identified to Item 1A, based on the agreement of class characteristics, and individual characteristics observed in the breechface impression marks. Item 1D was eliminated to Item 1A based on differences in class characteristics. The differences being the firing pin shape, firing pin aperture shape and ejector position.
RTC8N3	See attached report [No report was attached by participant].
RUMACM	There was significant detailed agreement in the firing marks on items 1, 2, 3 and 5. In my opinion the 3 cartridge cases in items 2, 3 and 5 had been fired in the recovered gun, responsible for the test fired cases in item 1. There were significant differences in the firing marks on item 4. In my opinion this cartridge case had not been fired in the recovered gun but instead had been fired in a different gun. In my opinion the gun used to fire the cartridge case item 4 was most likely a Glock self loading pistol (Gen 5).
T4NX4J	1. The Item 2, 3, and 5 cartridge cases were fired in the same firearm as the Item 1 known cartridge cases. 2. The Item 4 cartridge case was fired in a different firearm from that which discharged the Item 1, 2, 3, and 5 cartridge cases.
TFJ4Y3	The questioned expended cartridge cases (Items 2, 3 and 5) were discharged from the same firearm as the known expended cartridge cases (Item 1). The questioned expended cartridge case (Item 4) was discharge from another firearm than the suspect firearm that produced the known expended cartridge cases (Item 1).
TFWZ3L	- The three questioned expended cartridge cases recovered from the main entrance (identified as Item 2 and Item 3) and recovered from the floor near the dressing room (identified as Item 5), were discharged from the Smith & Wesson M&P Bodyguard 380 handgun (know expended cartridge identified as Item 1) - The questioned expended cartridge case recovered from the cash register (identified as Item 4), was not discharged from the Smith & Wesson M&P Bodyguard 380 handgun (know expended cartridge identified as Item 1)
TGB4WD	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing

TABLE 2

WebCode	Conclusions
	characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
TQ2KRA	The submitted specimens marked as Items 2 through 5 were examined and identified as four (4) fired .380 Auto caliber cartridge cases bearing the PMC headstamp. Items 2 through 5 were microscopically inter-compared and compared to Item 1 sample cartridge cases. As a result of microscopic comparison, it was concluded that Items 2, 3, and 5 were identified as having been fired in the same firearm that fired Item 1 sample cartridge cases. As a result of microscopic comparison, it was concluded that Item 4 was eliminated as having been fired in the same firearm that fired Item 1 sample cartridge cases due to differences in class characteristics.
TRVBV3	ITEM 2, 3, and 5: The cartridge cases were identified to the firearm that fired the item 1 cartridge cases, based on the correspondence of individual characteristics. ITEM 4: The cartridge case was eliminated from the item 1, 2, 3, and 5 cartridge cases based on differences in class characteristics..
TYUXM3	1. Examination of Exhibit 1 disclosed it to be three fired .380 Auto caliber cartridge cases bearing the PMC brand headstamp. The submitted documentation states that these items were test fired from the suspect's firearm. Exhibit 1 was found to be sufficient for microscopic comparison. 2. Examination of Exhibits 2 through 5 disclosed them to be four fired .380 Auto caliber cartridge cases bearing the PMC brand headstamp. 3. Due to a disagreement of class characteristics, Exhibit 4 was eliminated as having been fired in the same firearm as Exhibits 1, 2, 3, and 5. 4. Exhibits 1, 2, 3, and 5 were microscopically compared to one another. As a result of an agreement of class characteristics and a sufficient agreement of individual characteristics observed, it was concluded that Exhibits 2, 3 and 5 were fired in the same firearm as Exhibit 1.
TZ8PFJ	Items 1 to 5 were fired cartridge cases in .380" Auto calibre. Microscopic examination showed that Item 1, 2, 3 and 5 were fired in the same firearm, while, Item 4 was fired in another firearm.
U6XLHF	CONCLUSIONES EN INGLÉS 1) Witness material that was obtained from the firearm. It consists of three casings caliber 9x17mm or .380 AUTO, identified as Item 1, which have the same characteristics of class and identity with the three casings of analog caliber identified as Item 2, item 3, Item 5; so it is contributed that the firearm was used to fire the aforementioned casings. 2) The casing caliber 9x17mm or AUTO, identified as Item 4, has different identity characteristics, with respect to the casings of the previous items, so it is concluded that it was fired by a second firearm. CONCLUSIONES ESPAÑOL 1) El material testigo, consistente en tres casquillos calibre 9x17mm o .380 Auto, identificados como ítem 1, presentan iguales características de clase y de identidad con los tres casquillos de análogo calibre identificados como ítem 2, ítem 3, ítem 5; por lo que se concluye que dicha arma de fuego fue utilizada para percutir los casquillos antes mencionados. 2) El casquillo calibre 9x17mm o .380 Auto, identificado como ítem 4, presenta diferentes características de identidad, con respecto a los casquillos del numeral anterior, por lo que se concluye que fue percutido por una segunda arma de fuego.
UD8N4G	Items 2, 3 and 5 were identified as having been fired in Item 1. Item 4 was eliminated as having been fired in Item 1.
UGBLEA	Items A1-2, A1-3 and A1-5 were compared to item A1-1. Items A1-2, A1-3, A1-5, and A1-1, each a 380 Auto caliber cartridge case were compared microscopically and identified as having been fired in the same firearm. No firearm was submitted. Identifications are based on sufficient agreement of the individual characteristics of tool marks. Sufficient agreement, in



TABLE 2

WebCode	Conclusions
	part, means that the likelihood of another tool producing the same marks is so remote that it is considered a practical impossibility. Item A1-4 was compared to item A1-1. Items A1-4 and A1-1 exhibit similar class characteristics; however, microscopic examination revealed sufficient dissimilarities in individual characteristics to eliminate Items A1-4 and A1-1 as having been fired in the same firearm. No firearm was submitted.
UWJDGE	1. The expended cartridge cases identify as items 2, 3 and 5 where discharged from the same firearm as the known expended cartridge cases of item 1. 2. The expended cartridge case identify as item 4 was discharged from a different firearm that expended cartridge cases of item 1.
UZZ63Z	1. Exhibit 1 consists of three .380 Auto fired cartridge cases from the suspects weapon (test fires). 2. Exhibits 2 through 5 each consist of one .380 Auto fired cartridge case manufactured by Precision Made Cartridges (PMC). 3. Exhibit 1 was microscopically compared to Exhibits 2 through 5. a. Exhibits 2, 3, and 5 were fired in the same firearm as Exhibit 1, test fires, based on agreement of class characteristics and sufficient agreement of individual characteristics. b. Exhibit 4 was not fired in the same firearm as Exhibit 1, test fires, based on a disagreement of class characteristics.
V6AHKY	Casing M, N, and P (Items 2, 3, and 5) were identified as having been fired in the same firearm as the known casings (Item 1). Casing O (Item 4) was fired in a second .380 Auto firearm, based on differences in class characteristics. Suspect weapons include .380 Auto Glock and Smith & Wesson M&P series pistols; however, any suspect weapon should be submitted for examination.
V7M8NC	The three cartridge cases marked #2, #3, and #5 were microscopically compared against test fire cartridge cases (marked #1) from the 380 Auto caliber Smith & Wesson semiautomatic pistol serial number XXXX and identified as having been discharged in the submitted pistol. The cartridge case marked #4 was microscopically compared against test fire cartridge cases (marked #1) from the 380 Auto caliber Smith & Wesson semiautomatic pistol serial number XXXX and eliminated as having been discharged in the submitted pistol.
V8ZG2J	[No Conclusions Reported.]
VA73Q4	Control (Item 1) discharged in same firearm as items 2, 3 and 5. Item 4 showed areas of similarity, however lacked fine detail. Therefore discharged in a separate firearm.
VBX263	Upon request, a test fired cartridge case from Item 1 was microscopically examined and compared with recovered fired cartridge cases, Items 2, 3 and 5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 2, 3 and 5 are identified as having been fired in the same firearm as Item 1. Upon request, a test fired cartridge case from Item 1 was microscopically examined and compared with a recovered fired cartridge case, Item 4. Based on the observed disagreement of their class characteristics, Item 4 is eliminated as having been fired in the same firearm as Item 1.
VBX3NF	Items 2, 3, and 5 were fired in the same firearm as Item 1, identified as test fires from a S&W pistol, based on similar discernible class and individual microscopic characteristics. Item 4 was not fired in the same firearm as Item 1, identified as test fires from a S&W pistol, based on different class and individual microscopic characteristics.
VC9824	1. The test fired cartridge cases are producing sufficient significant individual characteristics that enable an examiner to make a reliable identification. 2. The exhibit item listed as items 2, 3, and 5 were identified within the limits of practical certainty as having been fired in the same firearm as the test fired cartridge cases Item 1, that were fired in the suspects firearm. 3. The

TABLE 2

WebCode	Conclusions
	exhibit item listed as Item 4 was eliminated as having been fired using the suspects firearm.
VD7DM4	The hypothesis that expended cartridge cases item 1, item 2, item 3 and item 5 were discharged from the same firearm is very strongly supported. The hypothesis that expended cartridge case item 4 was discharged from an other firearm is very strongly supported.
VDP23D	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
VFUPLA	The Items 01-01, 01-02, 01-03, and 01-05 cartridge cases were identified as having been fired in the same firearm, which is reportedly a Smith & Wesson pistol, Model M&P Bodyguard 380, serial number unknown. The Item 01-04 cartridge case was eliminated as having been fired in the same firearm as the Items 01-01, 01-02, 01-03, or 01-05 cartridge cases.
VGPCXD	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
VHKV3Z	Item 002, 003, 005 - The cartridge cases were identified to the Item 001 pistol. Item 004 - The cartridge case was eliminated from the Item 001 pistol.
VMV2H7	Exhibits 2, 3, 4 and 5 were .380 Auto caliber cartridge cases. Exhibits 2, 3 and 5 were microscopically compared with the cartridge cases of Exhibit 1. Based on agreement of class characteristics and sufficient agreement of individual characteristics, Exhibits 2, 3 and 5 were identified as having been fired in the same firearm that fired the Exhibit 1 cartridge cases. An identification conclusion indicates the probability that these cartridge cases were fired in a different firearm is so small that it is negligible. Based on a difference in class characteristics, Exhibit 4 was excluded as having been fired in the firearm that fired the Exhibit 1 cartridge cases.
VN3GPC	Item 1 consists of three test fired cartridge cases reported to have been fired in a .380 Auto caliber Smith & Wesson pistol, Model M&P Bodyguard. Items 2 through Item 5 are .380 Auto caliber cartridge cases that bear the headstamp of PMC ammunition. The Item 2, Item 3, and Item 5 cartridge cases were identified as having been fired in the Item 1 pistol. The Item 4 cartridge case was excluded as having been fired in the Item 4 pistol due to a difference in class characteristics.
VNL8XW	<b>RESULTS AND CONCLUSIONS:</b> The following results and conclusions are based upon direct analysis, measurements, and examination by the reporting scientist and reviewed by the scientist performing the technical and administrative review. Cartridge Case Analysis: Methodology: Physical (Visual Examination), Microscopy (Comparison Microscope). Items 2, 3,

TABLE 2

WebCode	Conclusions
	and 5, the cartridge cases, were fired in Item 1, the Smith & Wesson pistol, based upon corresponding class and individual microscopic characteristics. Item 4, the cartridge case, was not fired in Item 1, the Smith & Wesson pistol, based upon different class characteristics. Digital photographs/digital video imaging of identifications and/or exclusions of comparisons can be made available upon request for judicial proceedings. Evidence in this case will be returned to the investigative agency.
VNNUFB	The cartridge-cases in Item 2,3 and 5 were fired by the same gun that fired the cartridge-cases in Item 1. The cartridge-case in Item 4 was not fired by the same gun that fired the cartridge-cases in Item 1.
VTY67J	The questioned cartridge cases Item 2, Item 3 and Item 5 were discharged by the same firearm that expended the cartridge cases Item 1. The questioned cartridge case Item 4 were NOT discharged by the same firearm that expended the cartridge cases Item 1.
WLMN6	VISUAL INSPECTION AND MICROSCOPIC COMPARISON ANALYSES OF EVIDENCE CARTRIDGE CASES Q1 THROUGH Q4 (ITEMS 2 THROUGH 5) AGAINST EACH OTHER AND TEST FIRED CARTRIDGE CASES FROM SUSPECT FIREARM K1 (ITEM 1) REVEAL THAT THERE IS SUFFICIENT AGREEMENT OF MICROSCOPIC MARKINGS PRESENT TO IDENTIFY Q1, Q2, AND Q4 (ITEMS 2, 3, AND 5) AS HAVING BEEN FIRED WITH K1 SUSPECT FIREARM (ITEM 1). Q3 (ITEM 4) CAN BE ELIMINATED AS HAVING BEEN FIRED WITH K1 SUSPECT FIREARM (ITEM 1) DUE TO DIFFERENCES IN INDIVIDUAL MARKINGS PRESENT. SHOULD ANOTHER SUSPECTED FIREARM BE RECOVERED PLEASE SUBMIT IT IN REFERENCE TO THE ABOVE CC#.
VXA4XC	The ballistic comparison was made between the expended cartridges identified with item # 1 (known) obtained from the Smith & Wesson M&P Bodyguard 380 firearm, with the expended cartridges received identified with items # 2, # 3, # 4 and # 5 (questioned) found on stage, determining that the expended cartridge identified with items # 2, # 3 and # 5 present the equal characteristics of individualization in the percussion plane, impression of the percussion needle and impression in the extractor needle, therefore determines that these expended cartridges were hit by the same firearm and the expended cartridge of item No. 4 does not present sufficient conclusive characteristics to allow determining that it was hit by the aforementioned firearm.
VZGDUG	1. The cartridge cases marked E-1 to E-3, corresponding in Item 1, the cartridge case marked E-4, corresponding in Item 2, the cartridge case marked E-5, corresponding in Item 3 and the cartridge case marked E-7, corresponding in item 5, are .380 Auto caliber and were fired by the same firearm (Identification). 2. The cartridge case marked E-6, corresponding in Item 4, is .380 Auto caliber and was fired from a firearm. 3. The cartridge case marked E-6, corresponding in Item 4, is caliber .380 Auto and was not fired by the firearm used to fire the cartridge cases marked E-1 to E-3, corresponding in Item 1, the cartridge case marked E-4 corresponding in Item 2, the cartridge case marked E-5, corresponding in Item 3 and the cartridge case marked E-7, corresponding in Item 5.
W273R3	The three (3) 380 Auto fired cartridge cases, item #2, #3, and #5, were microscopically compared with cartridge cases reported as having been previously test fired by the Smith & Wesson pistol, item #1. These comparisons revealed matching individual breech face characteristics. This confirms that item #2, #3, and #5, were fired by the same firearm as item #1. (Source Identification). The one (1) 380 Auto fired cartridge case, item #4, was microscopically compared with cartridge cases reported as having been previously test fired by the Smith & Wesson pistol, item #1. These comparisons revealed different class characteristics (firing pin aperture shape). This excludes item #4 as having been fired by the same firearm as

TABLE 2

WebCode	Conclusions
	item #1. (Source Exclusion). Based on the class characteristics observed (teardrop shaped aperture mark) the one (1) 380 Auto fired cartridge case, item #4, is consistent with having been fired by a Glock model 42 pistol; however, other possibilities may exist.
W4EGY9	Items 2, 3, and 5, each a PMC caliber 380 Auto cartridge case, were microscopically examined. Based on corresponding class and individual characteristics, Items 2, 3, and 5 were identified as having been fired in the firearm represented by Item 1. Item 4 was microscopically examined and exhibits markings suitable for identification with the firearm in which it was fired. Due to differences in class characteristics, Item 4 was eliminated as having been fired in the firearm represented by Item 1. Firearms that produce class characteristics like those present on Item 4 include Glock caliber 380 Auto pistols. This is not all encompassing; it may be possible another brand of firearm produced class characteristics like those present and is not listed due to the content of the database searched.
W6QU36	Item 1 consists of three (3) fired .380 Auto caliber cartridge cases, PMC brand, that were microscopically compared for reproducibility, and they were identified as having been fired in the same known firearm. Items 2, 3, 4 and 5 are four (4) fired .380 Auto caliber cartridge cases, PMC brand, that were microscopically compared to each other and to Item 1. Items 2, 3, and 5 were identified as having been fired in Item 1 known firearm. Item 4 was not fired in the same firearm as Items 1, 2, 3, and 5 due to disagreement of class and individual characteristics.
W8UPM8	The cartridge cases in Items 2, 3 and 5 were fired in the gun that fired the cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge case in Item 4 was not fired in the gun that fired the cartridge cases in Item 1, based on differences observed in class characteristics.
W8UUWA	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
W96NJ2	Item #1 compared to Items #2, 3 and 5 - Source Identification. Item #1 compared to Item #4 - Source Elimination.
WAKV3X	See attached report [No report was attached by participant].
WLDCRY	1. Examination revealed the cartridge cases in Exhibits 1 thru 5 are .380 Auto caliber marketed by PMC. 2. Exhibit 1 consisted of three test fired cartridge cases provided by submitting agency. 3. Microscopic comparison revealed the cartridge cases in Exhibits 2, 3, and 5 were fired in the same firearm as Exhibit 1, based on an agreement of class and individual characteristics. 4. Microscopic comparison revealed the cartridge case in Exhibit 4 was not fired in the same firearm as Exhibit 1 based on an agreement of class characteristics and a sufficient disagreement of individual characteristics. Observing this amount of disagreement from the same source is considered extremely remote.
WMQ4M2	Items 2,3,4,5 were compared microscopically with Item 1 with these results: Items 2,3,5 are an Identification due to the sufficient quantity and quality of corresponding Individual Characteristics in the breech face striations. Thus, it is the opinion of this Examiner that Items

TABLE 2

WebCode	Conclusions
	2,3,5 were fired in the seized firearm (reportedly a "Smith & Wesson M&P Bodyguard 380 handgun"). Item 4 is an Elimination due to the sufficient quantity and quality of differing Class and Individual Characteristics in the breech face and firing pin impressions/striations. Thus, it is the opinion of this Examiner that Item 4 was NOT fired in the seized firearm.
WR4L2X	The fired cartridge cases, Lab Items 1, 2, 3 and 5, were fired in the same unknown firearm, based on microscopic comparison and agreement of discernible class characteristics and sufficient matching individual detail. The fired cartridge case, Lab Item 4, was not fired in the same firearm as Lab Items 1, 2, 3 and 5 based on microscopic comparison and significant disagreement of class characteristics.
WVYFY	1. Casings M, N and P (Items 2, 3 and 5) were identified as having been fired in the same firearm as the known fired casings, Item 1. 2. Casing O (Item 4) was fired in a second .380 Auto firearm. Suspect weapons include .380 Auto Glock Gen 5 pistols; however, any suspect weapon should be submitted to the laboratory for examination.
WYFZLE	The casings from Items 2, 3 and 5 were compared to the test fired casings from Item 1. Based on macroscopic and microscopic characteristics it was determined that Items 2, 3 and 5 were fired in Item 1. (Identification) The casing from Item 4 was compared to the test fired casings from Item 1. It was determined that Item 4 is the same caliber as the test fired casings from Item 1, but did not have sufficient corresponding individual microscopic marks to allow an identification with each other. Therefore, no conclusion could be reached as to whether or not they were fired in the same firearm. (Inconclusive)
X4NNWU	Cartridge Case Analysis: Methodology: Physical (Visual Examination), Microscopy (Comparison Microscope). Item 4, the .380 Auto cartridge case, was not fired in the same firearm as Items 1A, 1B and 1C, the .380 Auto cartridge cases identified to be test fires from Smith & Wesson Bodyguard seized from suspect, based upon different class characteristics. Items 2, 3 and 5, the .380 Auto cartridge cases, were fired in the same firearm as Items 1A, 1B, and 1C, the .380 Auto cartridge cases identified to be test fires from Smith & Wesson Bodyguard seized from suspect, based upon corresponding class and individual microscopic characteristics. A reference from this group will be entered into NIBIN. NIBIN: Item 4, the cartridge case, will be entered into NIBIN. The results of NIBIN entries and searches will be the subject of a separate report.
X8RJEC	Items 2, 3, and 5 are consistent with the suspect's weapon. (Identification). Item 4 are not consistent with the suspect's weapon. (Elimination).
XCJLN4	Examinations showed Items 2, 3 and 5 were discharged within the same firearm as Item 1. Examinations showed Item 4 was not discharged within the same firearm as Item 1.
XLTVAB	The four expended cartridge recurred as signs identified as items 2,3,4 and 5 correspond to the caliber: .380auto / 9x17mm and these present the same ballistic characteristics, both class and individualizing observed microscopically, the same as those observed in the standard expended cartridge identified as item 1 obtained from the firearm type: pistol brand: smith & wesson caliber: .380 auto received as evidence in this respective case therefore it is concluded that the weapon type: pistol brand: smith & wesson caliber: .380 auto if it struck the items 2, 3, 4 and 5 received as an indication on the basis that their ballistic characteristics are the same.
XU4CLH	The items 2, 3, 5 were discharged by the same firearm as item 1. The item 4 was not discharged by the same firearm as item 1.
XX4NGH	The three questioned expended cartridge cases identified as ITEM 2 and ITEM 3 recovered from the main entrance, and the questioned expended cartridge case identified as ITEM 5 recovered from the floor near the dressing room were fired by the handgun Smith & Wesson

TABLE 2

WebCode	Conclusions
Y7F22Y	M&P Bodyguard 380 seized from the suspect. The questioned expended cartridge case identified as ITEM 4 recovered from the floor near the cash register was not fired by the handgun Smith & Wesson M&P Bodyguard 380 seized from the suspect.
Y883YA	The Items 1 through 5 fired 380 Auto caliber cartridge cases were examined and microscopically compared to each other with the following results: Items 2, 3 and 5 were identified as having been fired in the same firearm as the Item 1 test fires. Item 4 was eliminated from having been fired in the same firearm as Items 1, 2, 3 and 5 based on differences in class characteristics. Remarks: Identification- The opinion of a qualified examiner that there is sufficient agreement of features and detail to conclude that two or more toolmarks originated from the same source. Elimination- The opinion of a qualified examiner that there is sufficient disagreement of features and detail to conclude that two or more toolmarks did not originate from the same source.
YAAVYZ	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
YCXC98	Item #1 compared with Items #2, 3, and 5 -- Source Identification. Item #1 compared with Item #4 -- Source Exclusion.
YDX8X6	A ballistic comparison was made with items No. 1, 2, 3, 4 and 5, determining that they correspond to caliber 380 ACP, of a Smith and Wesson, M&P pistol-type firearm, and when performing the microscopic comparison it was determined that The expended cartridge identified in items 2, 3 and 5 present the same class and individualizing characteristics, such as the impression of the firing pin, percussion plane and ejector equal to those observed in the expended cartridge of item No. 1, concluding that they were struck by the aforementioned firearm, and the casing of item No. 4 does not present the same class and individualizing characteristics, so it is determined that this expended cartridge was not struck by the aforementioned firearm.
YF279X	Items 2, 3 and 5 were fired in the same firearm a the item 1 test fires. Item 4 was fired in a second firearm.
YG9KF4	Items 2 through 5 were examined and compared microscopically with the test fired cartridge cases Item 1. Based on the observed agreement of their class characteristics and sufficient agreement of individual characteristics, Item 2, 3 and 5 are identified as having been fired in the same firearm as the tests, Item 1. Based on a difference of class characteristics Item 4 was not fired in the same firearm as the tests, Item 1.
	Items – Description/Visual Examination Item 1: (3) fired 380 Automatic caliber cartridge cases, reportedly test fired from suspect’s firearm. Items 2-5: (4) fired 380 Automatic caliber cartridge cases, reportedly collected form the crime scene. MICROSCOPIC COMPARISON CONCLUSIONS- Identification: Based upon the reproducibility of class characteristics and microscopic individual characteristics, the following identifications were made: Lab Item #; Evidence Type; Conclusion. 2, 3 & 5 Fired cartridge cases Fired in the suspect firearm (Item 1 TF’s) Elimination: Based upon the difference in class characteristics, the following eliminations were made: Lab Item #; Evidence; Type; Conclusion. 4 Fired cartridge case Not fired in the

TABLE 2

WebCode	Conclusions
	suspect firearm (Item 1 TF's)
YKCFY8	The suspect's weapon (Smith & Wesson M&P bodyguard 38) has fired three cartridge cases recovered from the scene (Item 2, 3 and 5). The remaining cartridge case named as Item 4 has been fired by a different arm.
YN96FE	The findings provide very strong support for the proposition that the cartridge cases 2, 3 and 5 were fired in the same gun as the cartridge cases in item 1 (recovered pistol). Based on the significantly different firing marks, despite the same ammunition type, the cartridge case 4 was fired in a different gun than the cartridge cases in item 1.
YRUMXY	I microscopically compared Items 2, 3, and 5 to Items 1A, 1B, and 1C. I identified Items 2, 3, and 5 as being fired in the same firearm as Items 1A, 1B, and 1C based on sufficient agreement of individual characteristics within the breech face marks, firing pin aperture shear, and ejector marks. I microscopically compared Item 4 to Items 1A, 1B, and 1C. Item 4 can be eliminated from being fired in the same firearm as Items 1A, 1B, and 1C based on different class characteristics.
YYVYUW	The fired cartridge cases (Item 1 TF2 and TF3) and (Items 2, 3 and 5) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics the fired cartridge cases (Items 2, 3 and 5) are identified as having been fired in the Smith and Wesson pistol. The fired cartridge cases (Item 1) and (Item 4) were microscopically examined and compared. Based on the observed disagreement of their class characteristics, the fired cartridge case (Item 4) is eliminated as having been fired in the Smith and Wesson pistol.
ZEK9GY	The Items 1, 2, 3, and 5 cartridge cases were identified as having been fired in the same firearm, as a result of the sufficient agreement of individual characteristics. The Item 4 cartridge case was fired in a different firearm than the Items 1, 2, 3, and 5 cartridge cases due to difference in class characteristics.
ZHKHK9	Item 1 consists of three (3) .380 Auto caliber cartridge cases that bear the headstamp of PMC ammunition and are indicated as coming from a Smith & Wesson pistol, Model Bodyguard 380. Item 2 through Item 5 consist of a single .380 Auto caliber cartridge case each, all bear the headstamp of PMC ammunition. The Item 2, Item 3, and Item 5 cartridge cases were identified as having been fired in the pistol that fired the Item 1 cartridge cases. The Item 4 cartridge case was excluded as having been fired in the pistol that fired the Item 1 cartridge cases, due to a difference in class characteristics.
ZLKTG9	Item 1 consists of three cartridge cases bearing the headstamp of PMC ammunition. Item 2 through Item 5 consists of four cartridge cases bearing the headstamp of PMC ammunition. The Item 2, Item 3 and Item 5 cartridge cases were identified as having been fired in the same pistol as the Item 1 cartridge cases. The Item 4 cartridge case was excluded as having been fired in the same pistol as the Item 1 cartridge cases.
ZNQBF4	The submitted cartridge cases, Items 01-01, 01-02, 01-03 and 01-05, were fired in the same firearm. The submitted cartridge case, Item 01-04, was not fired in the same firearm as Items 01-01, 01-02, 01-03 and 01-05. A list of possible firearms in which Item 01-04 could have been fired in would include, but not be limited to some Glock and Smith and Wesson pistols.
ZPHAT3	Item 1.1 consists of three fired PMC brand 380 Auto cartridge cases stated to have been fired by a Smith & Wesson M&P Bodyguard 380 Auto pistol. Items 1.2, 1.3, 1.4 and 1.5 consist of four fired PMC brand 380 Auto cartridge cases. They were microscopically compared to Item 1.1 and to each other. Based on agreement of all discernible class characteristics and corresponding individual detail in the breech face marks, Items 1.2, 1.3 and 1.5 were

TABLE 2

WebCode	Conclusions
	<p>identified as having been fired by the same firearm that fired the cartridge cases from Item 1.1. Based on class characteristic differences in the firing pin aperture, Item 1.4 can be eliminated as having been fired by the same firearm that fired Items 1.1, 1.2, 1.3 and 1.5. Comments: The identification of a cartridge(s) and/or bullet(s) is made to a practical, not absolute, exclusion of all other firearms. It is not possible to examine all firearms which is a prerequisite for absolute certainty. Sufficient agreement for an identification exists between firearm produced toolmarks when the likelihood another firearm could have fired the cartridge case(s) and or bullet(s) is so remote as to be considered a practical impossibility.</p>
ZQU9NC	Item 2, 3, and 5 have been fired from the same weapon as the material from Item 1.
ZVN3NX	Item #1 microscopically compared to Items #2, 3 & 5 - Source Identification. Item #1 microscopically compared to Item #4 - Source Exclusion.
ZZ3L3U	Exhibits 1 through 5 consists of (7) fired caliber .380 Auto cartridge cases, bearing the PMC headstamp. A macroscopic examination and microscopic comparison were conducted between Exhibits 2 through 5 and the reported Exhibit 1 test fires. There exists agreement of all discernible class characteristics and sufficient agreement of individual characteristics to identify Exhibits 2, 3 and 5 as having been fired in the same firearm as the reported Exhibit 1 test fired cartridge cases. Due to a difference in class characteristics, Exhibit 4 was excluded as having been fired in the same firearm as the reported Exhibit 1 test fired cartridge cases.



# Additional Comments

TABLE 3

WebCode	Additional Comments
26U8B9	Equipment: Comparative microscope Projectina Vision X, automatically system "POISC",
2FQFQ6	The expended cartridges identified with item # 4, present equal characteristics in the percussion plane, although this is not enough to determine whether or not it was struck by the firearm found at the scene.
3JM46Q	In the facts participated two weapons: Weapins 1 (item 1, item 2, item 3, and Item 5), Weapons 2 (Item 4)
3LWBA6	Group 2 presents G.R.C of a pistol-type firearm, Glock, Model 42
3YX3VA	Laboratory utilizes reports in a table format that does not copy over correctly
4TBDBY	Item 4 was inconclusive because it marked significantly different then the items identified, but not enough to eliminate.
66YV3A	A. Identification: Based on the agreement of the individuals characteristics observed through the microscopic comparison examination.
6NP8PA	The quality of the samples was good. The difficulty of the test was appropriate.
7H3JU4	Test is good as-is.
7WHJK3	The expended cartridges identified with item # 4, present equal characteristics in the percussion plane, although this is not enough to determine whether or not it was struck by the firearm found at the scene.
88YLLU	During the performance of this proficiency test, the examiner assigned this laboratory's item numbers to the CTS items. They were as follows: CTS Number 1 = Lab Item 001-01. CTS Number 2 = Lab Item 001-02. CTS Number 3 = Lab Item 001-03. CTS Number 4 = Lab Item 001-04. CTS Number 5 = Lab Item 001-05.
8LYKAR	A conclusion scale is also attached at the end of our reports that break down what each conclusion means.
9279VQ	LIMITATIONS: 1 Practical Certainty: Since it is not possible to collect and examine samples of all firearms, it is not possible to make an identification with absolute certainty. However all scientific research and testing to date and the continuous inability to disprove the principles of toolmark analysis have demonstrated that firearms produce unique, identifiable characteristics which allow examiners to reliably make identifications. Firearms/Toolmark Identification is an empirical science that relies on objective observations and a subjective interpretation of microscopic marks of value. NOTES/REMARKS: Information received indicates that the Item 1 test fired cartridge cases were fired in a .380 Auto calibre Smith & Wesson model M&P Bodyguard semi-automatic pistol.
AWRVQW	The expended cartridges identified with item # 4, present equal characteristics in the percussion plane, although this is not enough to determine whether or not it was struck by the firearm found at the scene.
BCFK2J	TECHNICAL NOTES Class characteristics are defined as measurable features of a firearm/tool which indicate a restricted group source. They result from design features and are

TABLE 3

WebCode	Additional Comments
	determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examine all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
BH9KKL	The class characteristics in Item 4 are expected when fired with a semi-automatic firearm of the Glock brand, model 42, caliber 9mm Browning Short (.380 Auto).
BKDCCY	I have assumed that the possibility of subclass influence was eliminated by the makers of this proficiency.
CEL33Z	[Laboratory] uses a table format for reports that does not populate correctly within the space provided.
E4UQED	NIBIN: Test fired cartridge cases from the Smith & Wesson model M&P Bodyguard 380 pistol, will be entered into NIBIN. Item 4, the cartridge case, will be entered into NIBIN. The results of NIBIN entries and searches will be the subject of a separate report.
ECL4HJ	The test was entered very late due to problems with customs.
EN2YVX	1. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison examination.
F48JRR	The expended cartridges identified with item # 4, present equal characteristics in the percussion plane, although this is not enough to determine whether or not it was struck by the firearm found at the scene.
F8BBZT	Methods: Cartridge/Shotshell Case: Two cartridge cases, either two evidence items or one evidence item and one cartridge case test fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using light and/or virtual comparison microscopy. A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two cartridge cases did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two cartridge cases can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two cartridge cases originated from the same source. Conditions for a source identification include the degree of similarity, between two samples, being greater than the Examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms; and the degree of similarity is equivalent to that normally observed in cartridge cases known to have been fired in the same firearm. The basis for a source identification conclusion is an Examiner's decision that the observed class

TABLE 3

WebCode	Additional Comments
	<p>characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two cartridge cases as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. Limitations: Cartridge/Shotshell Cases: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases.</p>
FLQBXJ	We would usually attach a table that explains each of our conclusions.
FQMZEQ	3.1) Therefore my opinion and confirm it was from two weapons in the crime scene. 3.2) The results of analysis and comparison between (1) expended cartridge cases in box marked item 2, (1) expended cartridge cases in box marked item 3 and (1) expended cartridge cases in box marked item 5 with (3) expended cartridge cases in box labelled item 1 found that it has same characteristics individual features. Therefore my conclusion and finding, it was fired from one weapon namely a Smith & Wesson M&P Bodyguard 380 handgun.
FVUQGW	lab reports use a table format for the findings that does not copy correctly into the above field.
GYU2BB	<p>The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm.</p>
HL22UR	The cartridge case item 4 are ELIMNATED with the cartridge cases of item 1 that were obtained from the firearm brand SMITH & WESSON M & P bodyguard 380.
JQQXWN	When analyzing the expended cartridge that came in item # 4, it is determined that it presents similarity in the impression of the percussion plane and ejector but differences in the

TABLE 3

WebCode	Additional Comments
	impression of the firing pin, such as very weak characteristics in the closure block, once compared microscopically with the expended cartridge of item # 1 (known), so it is determined that it does not present conclusive characteristics for a positive or negative identity.
JUR4A9	el estudio comparativo se realiza mediante la utilización de un macroscopio de comparación marca LEICA modelo FCS [English translation of comments was not obtained by the time of report publication].
L8TCAN	The microscopic comparison procedure was carried out between the three standard .380 auto caliber vanillas, received for study, identified as Item 1 and the incriminated vanillas identified as Item 2, Item 3, Item 4 and Item 5, finding two groups of vanillas shaped like this: Group one: Made up of the vanillas identified as Item 2, Item 3 and Item 5, it is determined that they present microscopic characteristics of identity among themselves, that is to say that they were struck by the same firearm. Group two: Made up of vanilla marked as item 4, which presents identity characteristics, but different from that of group number one, for which it is determined that it was hit by a different firearm.
MCY76J	Two weapon used in crime scene. The Pistol Smith & Wesson M&P Bodyguard 380 had been fired three rounds in crime scene and unknown weapon fired a round only.
N3P3B7	So that The suggestion is to deepen the study to detect the phenomenon that produced the observable differences and totally rule out the use of a weapon with similar production characteristics
P6RFB4	in addition to inner comparisons, NIBIN entry would also be completed for at least one of the identified casings as well as the excluded casing.
R2K3KG	Methods: Cartridge/Shotshell Case: Two cartridge cases, either two evidence items or one evidence item and one cartridge case test fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using light and/or virtual comparison microscopy. A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two cartridge cases did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two cartridge cases can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two cartridge cases originated from the same source. Conditions for a source identification include the degree of similarity, between two samples, being greater than the Examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms; and the degree of similarity is equivalent to that normally observed in cartridge cases known to have been fired in the same firearm. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support

TABLE 3

WebCode	Additional Comments
	<p>for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two cartridge cases as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. Limitations: Cartridge/Shotshell Case: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases. Virtual comparison microscopy (VCM) is restricted to the surface that the three-dimensional toolmark topographical instrument is capable of measuring to produce a digital reproduction. Additionally, individual characteristics may be present on the evidentiary item(s) and may not be reproduced during a scan. This may be due to interference from lacquer/sealant, environmental damage, debris, or measuring limits for an instrument. Furthermore, physical characteristics that are not measurable, such as the metallic qualities of an item, may not be available for evaluation.</p>
RLCTZF	<p>The repetitive characteristics on the ref and incriminated shells 1-2.3.5, are common by the same weapon such as the shape of the firing pin, the parallel ridges of the breech edge and the ejector.</p>
RNXP97	<p>Reports issued by the [Laboratory] Firearms / Toolmarks unit utilize a table format that doesn't readily transcribe to paragraph form. The above written paragraphs express the content that would be contained in our table(s).</p>
RQM28C	<p>Item 1A = CTS Item 1. Item 1B = CTS Item 2. Item 1C = CTS Item 3. Item 1D = CTS Item 4. Item 1E = CTS Item 5.</p>
VBX3NF	<p>Note- Item 4 is excluded from Item 1 (and 2, 3, 5) based on class and individual characteristics. Class = Aperture shape</p>
VFUPLA	<p>A firearm manufacturer determination statement was not included for Item 01-04 due to this being a proficiency.</p>
VHKV3Z	<p>1 - The method of testing for ammunition components included visual examination and microscopic comparisons. 2 - The test results for the above listed items fall into one of the four conclusions listed below: a. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. b. Inconclusive: Could not be Identified or Eliminated. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition, cartridge cases and projectiles fired in the same firearm are sometimes not identifiable as such. c. Eliminated: Significant</p>

TABLE 3

WebCode	Additional Comments
VN3GPC	<p>disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from that same firearm. d. No Value/Unsuitable for Microscopic comparison: The item lacks individual characteristics for microscopic comparison. This might also include items that did not come from ammunition or ammunition components.</p> <p>Methods: Physical and Visual Examinations: Physical and visual evaluations compare the physical and class characteristics of evidence items. A conclusion of "physically consistent with" is reached if the observable or measurable physical dimensions and/or design features of two items are in agreement, or are "physically consistent." If these dimensions and features are clearly different, an elimination conclusion is reached. If there is a lack of observable design features or measurable dimensions, the result is inconclusive. Cartridge/Shotshell Case: Two cartridge cases, either two evidence items or one evidence item and one cartridge case test fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using light and/or virtual comparison microscopy. A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two cartridge cases did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two cartridge cases can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two cartridge cases originated from the same source. Conditions for a source identification include the degree of similarity, between two samples, being greater than the Examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms; and the degree of similarity is equivalent to that normally observed in cartridge cases known to have been fired in the same firearm. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two cartridge cases as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. Limitations: Physical and Visual Examinations: A Physical and Visual Evaluation examination is unsuitable for determining a source identification conclusion. A conclusion of "physically consistent with" signifies a restricted group source, based on class characteristics and/or observable features, from which evidence may have originated. Post-manufacture features</p>

TABLE 3

WebCode	Additional Comments
	cannot be used for elimination purposes. Examinations of electronic evidence may be impacted by data quality and size of the item(s) in question. Cartridge/Shotshell Case: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases. Virtual comparison microscopy (VCM) is restricted to the surface that the three-dimensional toolmark topographical instrument is capable of measuring to produce a digital reproduction. Additionally, individual characteristics may be present on the evidentiary item(s) and may not be reproduced during a scan. This may be due to interference from lacquer/sealant, environmental damage, debris, or measuring limits for an instrument. Furthermore, physical characteristics that are not measurable, such as the metallic qualities of an item, may not be available for evaluation.
VLMN6	SUFFICIENT AGREEMENT IS RELATED TO THE SIGNIFICANT DUPLICATION OF RANDOM TOOLMARKS AS EVIDENCED BY A PATTERN OR COMBINATION OF PATTERNS OF SURFACE CONTOURS. "SUFFICIENT AGREEMENT" EXISTS BETWEEN TWO TOOLMARKS MEANS THAT THE AGREEMENT IS OF A QUANTITY AND QUALITY THAT THE LIKELIHOOD ANOTHER TOOL COULD HAVE MADE THE MARK IS SO REMOTE AS TO BE CONSIDERED A PRACTICAL IMPOSSIBILITY.
VXA4XC	The expended cartridges identified with item # 4, present equal characteristics in the percussion plane, although this is not enough to determine whether or not it was struck by the firearm found at the scene.
VZGDUG	1. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison test.
W273R3	Reports issued by the [Laboratory] Firearms / Toolmarks unit utilize a table based formatting system that doesn't readily transcribe to paragraph form. The above written paragraphs express the underlying content that would be contained in our table(s).
W96NJ2	The report has a chart that explains the range of conclusions
YAAVYZ	The laboratory utilizes a chart system for reporting results. There is an attachment to each report that includes definitions of the conclusions and a limiting statement that clarifies these conclusions are stated as expert opinions and not an absolute certainty.
ZHKHK9	Methods: Cartridge/Shotshell Case: Two cartridge cases, either two evidence items or one evidence item and one cartridge case test fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using light and/or virtual comparison microscopy. A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two cartridge cases did not originate from the same source. The basis for a source exclusion conclusion is

TABLE 3

WebCode	Additional Comments
	<p>an Examiner's decision that two cartridge cases can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two cartridge cases originated from the same source. Conditions for a source identification include the degree of similarity, between two samples, being greater than the Examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms; and the degree of similarity is equivalent to that normally observed in cartridge cases known to have been fired in the same firearm. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two cartridge cases as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. Limitations: Cartridge/Shotshell Case: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases. Virtual comparison microscopy (VCM) is restricted to the surface that the three-dimensional toolmark topographical instrument is capable of measuring to produce a digital reproduction. Additionally, individual characteristics may be present on the evidentiary item(s) and may not be reproduced during a scan. This may be due to interference from lacquer/sealant, environmental damage, debris, or measuring limits for an instrument. Furthermore, physical characteristics that are not measurable, such as the metallic qualities of an item, may not be available for evaluation.</p>
ZLKTG9	<p>Methods: Cartridge/Shotshell Case: Two cartridge cases, either two evidence items or one evidence item and one cartridge case test fired in the Laboratory, undergo two stages of comparison. First, the cartridge cases are examined to determine and compare their class characteristics. The class characteristics of fired cartridge cases include caliber, shape of firing pin impression, shape and orientation of breech face marks, and relative locations of extractor and ejector marks. If the class characteristics of the two cartridge cases are not clearly different, the examination moves to a second stage using light and/or virtual comparison microscopy. A microscopic comparison examination consists of a search of the impressed and striated toolmarks present on two cartridge cases to determine if patterns of similarity exist. At the completion of these examinations, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two cartridge cases did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two cartridge cases can be differentiated by their class</p>



TABLE 3

WebCode	Additional Comments
	<p>characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two cartridge cases originated from the same source. Conditions for a source identification include the degree of similarity, between two samples, being greater than the Examiner has ever observed in previous evaluations of cartridge cases known to have been fired in different firearms; and the degree of similarity is equivalent to that normally observed in cartridge cases known to have been fired in the same firearm. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two cartridge cases as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. Limitations: Cartridge/Shotshell Case: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition design and construction, cartridge cases fired in the same firearm are sometimes not identifiable as such. Additionally, some firearm manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value on fired cartridge cases. Virtual comparison microscopy (VCM) is restricted to the surface that the three-dimensional toolmark topographical instrument is capable of measuring to produce a digital reproduction. Additionally, individual characteristics may be present on the evidentiary item(s) and may not be reproduced during a scan. This may be due to interference from lacquer/sealant, environmental damage, debris, or measuring limits for an instrument. Furthermore, physical characteristics that are not measurable, such as the metallic qualities of an item, may not be available for evaluation.</p>
ZVN3NX	<p>The reported results above are presented in chart format, accompanied by a Conclusions Description page which details the meaning of the various range of conclusions.</p>

-End of Report-  
(Appendix may follow)

## Test No. 20-5262: Firearms Examination

DATA MUST BE SUBMITTED BY **Dec. 21, 2020, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234H

WebCode: TKN4T6

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

### Scenario:

Police are investigating a shooting in a department store. Investigators recovered four expended cartridge cases at the scene - two from the main entrance, one from the floor near the cash register and one from the floor near the dressing room. A suspect was apprehended later that day and police seized a Smith & Wesson M&P Bodyguard 380 handgun from his possession. Three rounds of PMC® Bronze 380 ammunition (which were consistent with the cartridge cases found at the scene) were fired with the suspect firearm and the cartridge cases collected. Investigators are asking you to compare the recovered cartridge cases from the scene with those test fired from the suspect's weapon and report your findings.

*Please note the following:*

*- Each Item is in a small labeled box, it is suggested that when the items are removed from their labeled boxes, they be marked according to your laboratory procedure. However, in case the items are separated from their boxes before labeling has occurred, each item has been inscribed with its item number.*

### Items Submitted (Sample Pack F2):

Item 1: Three expended cartridge cases discharged from the suspect's weapon (known).

Item 2: First expended cartridge case recovered from the main entrance (questioned).

Item 3: Second expended cartridge case recovered from the main entrance (questioned).

Item 4: One expended cartridge case recovered from the floor near the cash register (questioned).

Item 5: One expended cartridge case recovered from the floor near the dressing room (questioned).

**1.) Were any of the questioned expended cartridge cases (Items 2-5) discharged from the same firearm as the known expended cartridge cases (Item 1)?**

<i>Item 2</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 3</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 4</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 5</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>

\*Should an item(s) be marked "Inconclusive", please document the reason in the Additional Comments section of this data sheet.

*Please note: Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

**2.) What would be the wording of the Conclusions in your report?**

**3.) Additional Comments**

## RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
- This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps **only if your laboratory is accredited in this testing/calibration discipline** by one or more of the following Accreditation Bodies.

**Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory.**

ANAB Certificate No.   
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

**Step 2: Complete the Laboratory Identifying Information in its entirety.**

Authorized Contact Person and Title

Laboratory Name

Location (City/State)