



Tire Track Imprint Evidence Test No. 19-5351/5 Summary Report

Each sample pack contained either digitally produced photographs (19-5351) or directly downloadable digital images (19-5355) of four questioned tire track imprints, photographs of a suspect tire, and test imprints made with that tire. Participants were requested to compare the imprints from the crime scene with the suspect tire and report their findings. Data were returned by 52 participants: 38 for 19-5351 and 14 for 19-5355 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 pack contained either photographs or digital images of a suspect tire, inked exemplars of a suspect tire, and questioned tire track imprints. The suspect tire was photographed in segments (K1-K7), with the start and end of each segment indicated by a red line and assigned a letter (A-G). The inked exemplars were segmented and captured in the same manner. Two photographs contained images of four questioned tire track imprints (Q1-Q4). Participants were asked to compare the suspect tire and inked exemplars with the questioned imprints to determine if any associations or identifications could be established.

SAMPLE PREPARATION -

The previously driven tires used in production of the test were gently cleaned to remove any loose debris from the surface prior to inking.

KNOWN EXEMPLARS (K1-K7, K1_2-K7_2): Inked exemplar imprints were created by pushing a vehicle containing the suspect tire across an inked surface and then white containerboard. The suspect tire was removed from the vehicle and photographed in segments after known exemplars and questioned imprints were collected.

QUESTIONED IMPRINTS (Q1-Q4): Questioned imprints were created by pushing a vehicle containing the suspect or elimination tire across an inked surface and then the substrate. All production materials were repositioned and the process repeated as necessary to capture all tire track imprints in question.

VERIFICATION -

Laboratories that conducted the predistribution examination of the images associated imprints Q2 and Q3 with the suspect tire and expected segments. In addition, all predistribution labs eliminated imprint Q1 and a majority eliminated imprint Q4.

SAMPLE PACK ASSEMBLY -

Once sample preparation, verification, and final image production were complete, each photo set was placed into a pre-labeled sample pack envelope, sealed with evidence tape, and initialed with "CTS." Digital download media were provided in a zipped file uploaded to the CTS portal.

Imprint	Tire Brand	Tire Specs	DOT Info	Segment(s)
Q1	Toyo Proxes A27	P185/60 R16 86H M&S	N3EL V573517	N/A - Elimination
Q2	Toyo Proxes A27	P185/60 R16 86H M&S	N3EL V570716	B-D
Q3	Toyo Proxes A27	P185/60 R16 86H M&S	N3EL V570716	F-A
Q4	Toyo Proxes A27	P185/60 R16 86H M&S	N3EL V573517	N/A - Elimination

Summary Comments

This test was designed to allow participants to assess their proficiency with tire track imprint examination. Test material consisted of two photographs containing four questioned tire track imprints (Q1-Q4), photographs of the suspect (known) tire, divided into segments (K1-K7), and photographs of inked exemplar imprints made with the tire (K1_2-K7_2). Participants were requested to determine if any of the questioned imprints were made by the known tire, utilizing a seven-point conclusion scale. Two of these imprints (Q2, Q3) were made by the known tire. Two additional imprints (Q1, Q4) were made by a different tire (Refer to the Manufacturer's Information for preparation details).

For the following statistical tabulations, all responses of association (A-D) with the expected tire segments were tallied together, and all responses of non-association (F-G) were tallied together. For Item Q1, 40 of 52 participants (77%) reported a non-association between the known tire and the questioned imprint (conclusion F-G). Ten participants reported some level of association with the known tire (conclusion A-D), and two participants were inconclusive (conclusion E). For Item Q2, 49 participants (94%) found an association between the known tire and the questioned imprint. Two participants reported a non-association between the known tire and the questioned imprint, and one participant was inconclusive. For Item Q3, 47 participants (90%) reported an association between the questioned imprint and the known tire. Four participants reported non-association for the known tire, and one participant was inconclusive.

All 49 of the participants who reported an association between Q2 and the known tire identified one or both of the expected tire segments (B-C, C-D). Additionally, all of the 47 participants who reported an association for Q3 also reported one or both of the expected tire segments (F-G, G-A).

For Item Q4, no group consensus was reached, as fewer than 75% of participants reported consistent findings. Thirty-six of 52 participants (69%) reported an elimination or indications of non-association (conclusion F-G) for this item, which correlates to the expected results of the Manufacturer's Information. Thirteen participants reported some level of association (conclusion B-D), but none identified the known tire as the source of the questioned imprint (conclusion A). Association was commonly attributed to segment B-C of the known tire. Three participants were inconclusive (conclusion E). Because no consensus was established for this item, no outliers are indicated regarding the conclusions.

Suggestions have been provided by a number of participants as to how to improve this test. This feedback is appreciated and being considered for future iterations of this test.

Examination Results

Indicate the results of your comparisons of the suspect tire with the questioned imprints.

TABLE 1a (Advertisement Poster)

Questioned Imprints						
WebCode- Test	Conclusion	<u>Q1</u> Segment(s)	WebCode- Test	Conclusion	<u>Q2</u> Segment(s)	
2E2AYK- 5351	E		2E2AYK- 5351	E		
2GALGL- 5355	G		2GALGL- 5355	A		BCD
2MBXCJ- 5351	G		2MBXCJ- 5351	A		B-D
2NNCX8- 5351	G		2NNCX8- 5351	A		B-D
3EUQ6D- 5351	C	D-E	3EUQ6D- 5351	A		B-C
3ZEGNH- 5351	G		3ZEGNH- 5351	A		B-D
466DPE- 5351	G		466DPE- 5351	A		B-C
4DYHJF- 5355	G		4DYHJF- 5355	A		B-C
6JGB8K- 5351	F		6JGB8K- 5351	A		B-C
6RVWGN- 5351	F		6RVWGN- 5351	A		B-D
76F4K3- 5351	G		76F4K3- 5351	A		B-D
7JZEFK- 5351	G		7JZEFK- 5351	A		B-D
7WKUJK- 5351	G	C-E	7WKUJK- 5351	A		B-D
834NQ2- 5351	F		834NQ2- 5351	B		B-D

TABLE 1a (Advertisement Poster)

Questioned Imprints						
WebCode- Test	Conclusion	<u>Q1</u> Segment(s)	WebCode- Test	Conclusion	<u>Q2</u> Segment(s)	
96RA6B- 5355	G		96RA6B- 5355	A	B-D	
9JNP3J- 5355	F		9JNP3J- 5355	F		
BUGWTY- 5351	G		BUGWTY- 5351	A	B-D	
BXJTKE- 5355	G		BXJTKE- 5355	A	B-D	
CYQABX- 5351	C	F-G	CYQABX- 5351	B	C-D	
D3MBXX- 5355	F		D3MBXX- 5355	A	B-D	
EBF792- 5351	D	C-E	EBF792- 5351	A	B-D	
EEGU6Q- 5355	G	F-G	EEGU6Q- 5355	A	B-D	
FKHRTL- 5351	E	F-G	FKHRTL- 5351	B	B-C	
GL89QZ- 5351	F	D-E	GL89QZ- 5351	A	B-D	
H87ZK7- 5351	G		H87ZK7- 5351	A	B-D	
H9EGAN- 5351	F	C-G	H9EGAN- 5351	D	B-D	
HCX4DA- 5351	G		HCX4DA- 5351	A	B-D	
LEC3YU- 5351	D	C-E	LEC3YU- 5351	A	B-C	
LEUYHG- 5355	B	C-E	LEUYHG- 5355	B	B-D	

TABLE 1a (Advertisement Poster)

Questioned Imprints						
WebCode- Test	Conclusion	<u>Q1</u> Segment(s)	WebCode- Test	Conclusion	<u>Q2</u> Segment(s)	
LNGW9L- 5355	D	C-G	LNGW9L- 5355	A	B-D	
LPUG2W- 5351	G		LPUG2W- 5351	A	B-D	
M6GG72- 5355	G		M6GG72- 5355	A	B-D	
MVGUD4- 5351	G		MVGUD4- 5351	A	B-D	
MW8TR3- 5351	F		MW8TR3- 5351	A	B-D	
N6HJPD- 5355	G		N6HJPD- 5355	A	B-D	
NDQARG- 5351	G		NDQARG- 5351	A	B-D	
NVNB4M- 5351	G	F-G	NVNB4M- 5351	A	B-D	
PG9P4U- 5351	G		PG9P4U- 5351	A	B-D	
Q67TCC- 5355	C	E-G	Q67TCC- 5355	A	B-D	
QXNJ63- 5351	F		QXNJ63- 5351	A	B-D	
RKHMLZ- 5351	G		RKHMLZ- 5351	B	B-D	
RM9NRN- 5351	C	C-E	RM9NRN- 5351	A	B-D	
RVC8JJ- 5351	G		RVC8JJ- 5351	A	B-C	
RXNKNF- 5351	F	C-G	RXNKNF- 5351	D	B-D	

TABLE 1a (Advertisement Poster)

Questioned Imprints						
WebCode-Test	Conclusion	Q1		WebCode-Test	Conclusion	Segment(s)
		Segment(s)				
TGDH4D-5351	G			TGDH4D-5351	A	B-D
V84QWF-5355	G			V84QWF-5355	B	B-D
WGKUHI-5351	C	C-E		WGKUHI-5351	A	B-D
WU89C7-5351	G			WU89C7-5351	A	B-C
X7JQQV-5355	G			X7JQQV-5355	A	B-C
YAU9GB-5351	G			YAU9GB-5351	A	B-C
YW9P6U-5351	C	C-E		YW9P6U-5351	B	B-D
ZHK62C-5351	G			ZHK62C-5351	F	

Response Summary				Participants: 52	
Q1 Conclusion		Segment(s), by frequency	Q2 Conclusion		Segment(s), by frequency
Identification (A)	0 (0.0%)	N/A for non-assoc.	Identification (A)	40 (76.9%)	B-D 37 (71.2%)
High Degree of Ass'n. (B)	1 (1.9%)		High Degree of Ass'n. (B)	7 (13.5%)	B-C 10 (19.2%)
Association (C)	6 (11.5%)		Association (C)	0 (0.0%)	BCD 1 (1.9%)
Limited Ass'n. (D)	3 (5.8%)		Limited Ass'n. (D)	2 (3.8%)	C-D 1 (1.9%)
Inconclusive (E)	2 (3.8%)		Inconclusive (E)	1 (1.9%)	
Non-Ass'n. (F)	10 (19.2%)		Non-Ass'n. (F)	2 (3.8%)	
Exclusion (G)	30 (57.7%)		Exclusion (G)	0 (0.0%)	

Examination Results

Indicate the results of your comparisons of the suspect tire with the questioned imprints.

TABLE 1b (Cardboard Box)

Questioned Imprints						
WebCode- Test	Conclusion	<u>Q3</u>	Segment(s)	WebCode- Test	Conclusion	<u>Q4</u>
						Segment(s)
2E2AYK- 5351	E			2E2AYK- 5351	E	
2GALGL- 5355	A		FGA	2GALGL- 5355	G	
2MBXCJ- 5351	A		F-A	2MBXCJ- 5351	G	
2NNCX8- 5351	A		F-A	2NNCX8- 5351	G	
3EUC6D- 5351	C		F-A	3EUC6D- 5351	G	
3ZEGNH- 5351	A		F-A	3ZEGNH- 5351	G	
466DPE- 5351	A		F-G	466DPE- 5351	G	
4DYHJF- 5355	A		F-A	4DYHJF- 5355	E	
6JGB8K- 5351	F			6JGB8K- 5351	F	
6RVWGN- 5351	B		F-A	6RVWGN- 5351	C	B-C
76F4K3- 5351	A		F-A	76F4K3- 5351	G	
7JZEFK- 5351	A		F-A	7JZEFK- 5351	G	
7WKUJK- 5351	A		F-A	7WKUJK- 5351	G	G-B
834NQ2- 5351	B		F-A	834NQ2- 5351	D	B-C

TABLE 1b (Cardboard Box)

Questioned Imprints						
WebCode- Test	Conclusion	Q3		WebCode- Test	Conclusion	Segment(s)
		Segment(s)				
96RA6B- 5355	A	F-A		96RA6B- 5355	G	
9JNP3J- 5355	F			9JNP3J- 5355	F	
BUGWTY- 5351	A	F-A		BUGWTY- 5351	G	
BXJTKE- 5355	A	F-A		BXJTKE- 5355	G	
CYQABX- 5351	B	G-A		CYQABX- 5351	E	B-C
D3MBXX- 5355	B	F-A		D3MBXX- 5355	F	
EBF792- 5351	A	F-A		EBF792- 5351	D	B-C
EEGU6Q- 5355	B	F-G		EEGU6Q- 5355	G	B-C
FKHRTL- 5351	C	F-G		FKHRTL- 5351	F	B-C
GL89QZ- 5351	F	G-A		GL89QZ- 5351	G	B-C
H87ZK7- 5351	A	F-A		H87ZK7- 5351	G	
H9EGAN- 5351	D	F-A		H9EGAN- 5351	F	B-C
HCX4DA- 5351	A	F-A		HCX4DA- 5351	G	
LEC3YU- 5351	A	F-A		LEC3YU- 5351	C	B-C
LEUYHG- 5355	C	F-A		LEUYHG- 5355	B	B-C

TABLE 1b (Cardboard Box)

Questioned Imprints						
WebCode- Test	Conclusion	Q3		WebCode- Test	Conclusion	Segment(s)
		Segment(s)				
LNGW9L-5355	A	F-A		LNGW9L-5355	D	B-C
LPUG2W-5351	A	F-A		LPUG2W-5351	G	
M6GG72-5355	A	F-A		M6GG72-5355	G	
MVGUD4-5351	A	F-A		MVGUD4-5351	G	
MW8TR3-5351	A	F-A		MW8TR3-5351	C	B-C
N6HJPD-5355	A	F-A		N6HJPD-5355	G	
NDQARG-5351	A	F-A		NDQARG-5351	G	
NVNB4M-5351	A	F-A		NVNB4M-5351	G	B-C
PG9P4U-5351	A	F-A		PG9P4U-5351	G	
Q67TCC-5355	C	F-A		Q67TCC-5355	C	B-C
QXNJ63-5351	A	F-A		QXNJ63-5351	C	B-C
RKHMLZ-5351	B	F-A		RKHMLZ-5351	G	
RM9NRN-5351	A	F-A		RM9NRN-5351	C	B-C
RVC8JJ-5351	A	F-A		RVC8JJ-5351	D	B-C
RXNKNF-5351	D	F-A		RXNKNF-5351	F	B-C

TABLE 1b (Cardboard Box)

Questioned Imprints						
WebCode- Test	Conclusion	Q3		WebCode- Test	Conclusion	Segment(s)
		Segment(s)				
TGDH4D-5351	A	F-A		TGDH4D-5351	G	
V84QWF-5355	B	F-A		V84QWF-5355	F	B-C
WGKUHI-5351	A	F-A		WGKUHI-5351	C	B-C
WU89C7-5351	A	F-A		WU89C7-5351	G	
X7JQQV-5355	A	F-A		X7JQQV-5355	G	
YAU9GB-5351	A	F-G		YAU9GB-5351	G	
YW9P6U-5351	B	F-A		YW9P6U-5351	C	B-C
ZHK62C-5351	F			ZHK62C-5351	F	

Response Summary				Participants: 52			
Q3 Conclusion		Segment(s), by frequency		Q4 Conclusion		Segment(s), by frequency	
Identification (A)	33 (63.5%)	F-A	41 (78.8%)	Identification (A)	0 (0.0%)	N/A for non-assoc.	
High Degree of Ass'n. (B)	8 (15.4%)	F-G	4 (7.7%)	High Degree of Ass'n. (B)	1 (1.9%)		
Association (C)	4 (7.7%)	G-A	2 (3.8%)	Association (C)	8 (15.4%)		
Limited Ass'n. (D)	2 (3.8%)	FGA	1 (1.9%)	Limited Ass'n. (D)	4 (7.7%)		
Inconclusive (E)	1 (1.9%)			Inconclusive (E)	3 (5.8%)		
Non-Ass'n. (F)	4 (7.7%)			Non-Ass'n. (F)	8 (15.4%)		
Exclusion (G)	0 (0.0%)			Exclusion (G)	28 (53.8%)		

Examination Results

TABLE 1c - Complete Results

Response Summary				Participants: 52			
Q1 Conclusion		Segment(s), by frequency		Q2 Conclusion		Segment(s), by frequency	
Identification (A)	0 (0.0%)	N/A for non-assoc.		Identification (A)	40 (76.9%)	B-D	37 (71.2%)
High Degree of Ass'n. (B)	1 (1.9%)			High Degree of Ass'n. (B)	7 (13.5%)	B-C	10 (19.2%)
Association (C)	6 (11.5%)			Association (C)	0 (0.0%)	BCD	1 (1.9%)
Limited Ass'n. (D)	3 (5.8%)			Limited Ass'n. (D)	2 (3.8%)	C-D	1 (1.9%)
Inconclusive (E)	2 (3.8%)			Inconclusive (E)	1 (1.9%)		
Non-Ass'n. (F)	10 (19.2%)			Non-Ass'n. (F)	2 (3.8%)		
Exclusion (G)	30 (57.7%)			Exclusion (G)	0 (0.0%)		
Q3 Conclusion		Segment(s), by frequency		Q4 Conclusion		Segment(s), by frequency	
Identification (A)	33 (63.5%)	F-A	41 (78.8%)	Identification (A)	0 (0.0%)	N/A for non-assoc.	
High Degree of Ass'n. (B)	8 (15.4%)	F-G	4 (7.7%)	High Degree of Ass'n. (B)	1 (1.9%)		
Association (C)	4 (7.7%)	G-A	2 (3.8%)	Association (C)	8 (15.4%)		
Limited Ass'n. (D)	2 (3.8%)	FGA	1 (1.9%)	Limited Ass'n. (D)	4 (7.7%)		
Inconclusive (E)	1 (1.9%)			Inconclusive (E)	3 (5.8%)		
Non-Ass'n. (F)	4 (7.7%)			Non-Ass'n. (F)	8 (15.4%)		
Exclusion (G)	0 (0.0%)			Exclusion (G)	28 (53.8%)		

Conclusions

TABLE 2

WebCode-Test	Conclusions
2E2AYK-5351	<p>Preliminary examination of the Item Q1-Q4 questioned tire tread impressions revealed similar tread pattern, tread element spacing, and physical size with portions of Items K1-K7/K1_2-K7_2. However, significant limiting factors were noted during the initial examination of both the questioned impressions and the known tire/tire test impression. Limiting factors identified during the evaluation of the Item Q1-Q4 questioned tire tread impressions include: Partial track widths (Q1-Q2); Full track length not represented (Q1-Q4); Background interference in the form of light/dark alternating patterns due to possible corrugated material (Q1-Q4). Limiting factors identified during the evaluation of the Item K1-K7 tire images and K1_2-K7_2 test impression images include: Inadequate lighting that prevented reliable examination of wear and randomly acquired characteristics on the tire represented in the Item K1-K7 images; Areas of uneven ink transfer on Item K1_2-K7_2 that display overly dark regions as well as apparent voids/missing pattern information that were not clearly observed on the images of the tire. Therefore, the Item K1_2-K7_2 test impression is not an accurate representation of the Item K1-K7 tire tread wear or randomly acquired characteristics; Background interference (mottled texture) throughout the length of the Item K1_2-K7_2 impression that cannot be differentiated from wear and/or randomly acquired characteristics; Submission of only one test impression that prevented reliable assessment of wear and randomly acquired characteristic reproducibility; The lack of a submitted tire that prevented further evaluation of features in the Item K1-K7 images and hindered the ability to create additional test impressions; Observed differences and similarities within corresponding segments of Item K1-K7 and Item K1_2-K7_2 (due to a combination of the above limitations) that prevented meaningful assessment of source tire characteristics. Due to the limiting factors listed above for Items Q1-Q4 and K1-K7/K1_2-K7_2, it was concluded that the Item Q1-Q4 tire tread impressions as well as the Item K1-K7 tire/K1_2-K7_2 tire impression lacked sufficient detail for a meaningful conclusion.</p>
2GALGL-5355	<p>Item 1 contained images of four questioned impressions, Q1-Q4. The questioned impressions were compared to images of the known tire (K1-K7) and images of known impressions (K1_2 - K7_2) said to be from the recovered tire. A complete evaluation of a questioned impression and a known tire includes looking at correspondence in tread design, physical size and shape of design present, wear characteristics, and any distinctive characteristics randomly acquired on the tread of the known tire that are represented in the questioned impression. The questioned impression in Q2 corresponded in physical shape, tread design, noise treatment and randomly acquired characteristics to the known tire segments D_C_B represented in K2, K3, K2_2 and K3_2. Therefore, the known tire represented in Item 1 is the source of the questioned tire impression in Q2 (Type I Association). The questioned impression in Q3 corresponded in physical shape, tread design, noise treatment and randomly acquired characteristics to the known tire segments A_G_F represented in K6, K7, K6_2 and K7_2. Therefore, the known tire represented in Item 1 is the source of the questioned tire impression in Q2 (Type I Association). The questioned impressions in Q1 and Q4, although similar in general tread pattern, differed in wear and/or randomly acquired characteristics to the known tire represented in Item 1. Therefore, the questioned impressions in Q1 and Q4 were not made by the known tire represented in Item 1 (Exclusion). Interpretation: The following descriptions are meant to provide context to the opinions reached in this report. Every type of conclusion may not be applicable in every case or for every material type. Type I Association: Identification: 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. This includes when two Items fit or realign together in a manner that is not expected to be replicated. Type II Association: Association with distinct characteristics: Items correspond in all measured physical properties, chemical composition and/or microscopic characteristics and share distinctive characteristic(s). Although the examiner would not expect to see these distinctive characteristic(s) repeated in another source, it lacked sufficient characteristics for a source identification. Type III Association: Association with conventional characteristics: Items</p>

TABLE 2

WebCode-Test	Conclusions
	correspond in all measured physical properties, chemical composition and/or microscopic characteristics. However, it is possible for another sample to be indistinguishable from the submitted evidence; therefore, an individual source cannot be determined. Type IV Association: Association with limitations: An association of decreased evidential value in which items correspond in all measured physical properties, chemical composition and/or microscopic characteristics, but there is a limitation to the exam. Limitations could include items commonly encountered in the relevant population, the inability to perform a complete analysis, or limited information. Inconclusive: No conclusion could be reached regarding an association or an elimination between the items. Exclusion with Limitations: The item exhibits differences to the comparison sample that suggests that it did not originate from the same source. However, there are limiting factors, such as possible natural or manufactured source variations. Exclusion: The items exhibit differences in physical properties and/or chemical composition to the comparison sample that demonstrate they did not originate from the same source.
2MBXCJ-5351	The known tire, K1 through K7, is excluded as a possible source of the questioned impressions, Q1 and Q4. The known tire is similar in tread design and several randomly acquired characteristics as the questioned impressions, Q2 and Q3. The known tire made questioned impressions, Q2 and Q3.
2NNCX8-5351	The comparison between Q1 and Q4 recovered tires-their imprint, exhibit sufficient differences of individual characteristics. The comparison between Q2 and Q3 recovered tires-their imprint, exhibit sufficient agreement of class and randomly acquired characteristics.
3EUQ6D-5351	Impressions Q1, Q2 & Q3 were made by the recovered tire. Impression Q4 could not be identified or eliminated as being made by the recovered tire.
3ZEGNH-5351	The known tire depicted in images in exhibit TIEP was the source of, and made, the questioned tire impressions Q2 and Q3. Another tire being the source of the impressions is considered a practical impossibility. This is based on agreement of tread design, size, pitch sequence, wear and multiple randomly acquired characteristics between each questioned tire impression and the known tire. The known tire in exhibit TIEP was not the source of, and did not make, the questioned impressions designated Q1 or Q4 in exhibit TIEP based on disagreement of wear and randomly acquired characteristics. Images of the identifiable questioned tire impressions have been retained in our files.
466DPE-5351	Q1 and the recovered tire have an area of similar class characteristics but are slightly off in size and exhibit different wear characteristics. The recovered tire is excluded as a source of the imprint. Q2, Q3, and the recovered tire exhibit the same class characteristics and have sufficient corresponding randomly acquired characteristics to identify the recovered tire as the source of the imprints. Q4 and the recovered tire have an area of corresponding class characteristics but do not exhibit the same randomly acquired characteristics or wear characteristics. The recovered tire is excluded as the source of the imprint.
4DYHJF-5355	Identification - Known tire item #1 was identified as the source of tire impressions Q2 and Q3. Exclusion - Known tire item #1 was excluded as the source of tire impression Q1. Inconclusive - Known tire item #1 could be neither identified nor excluded as the source of tire impression Q4. General design, dimension, and noise treatment appear to correspond; however, the appearance of possible wear and randomly acquired characteristics do not appear to correspond between known tire item #1 and tire impression Q4. Due to the limitations of this comparison (only one test impression provided, the physical tire was not provided), and based on both the correspondences and non-correspondences observed, no meaningful conclusion may be rendered. *If additional test impressions and/or the physical tire was provided for comparison, additional comparative analysis may be performed with tire impression Q4.
6JGB8K-5351	Imprint Q2 was identified as having been produced by the suspect tire (depicted in photographs K1 – K7 and K1_2 – K7_2). Imprints Q1, Q3, and Q4 could neither be identified nor eliminated as having been produced by the suspect tire (depicted in photographs K1 – K7 and

TABLE 2

WebCode-Test	Conclusions
	K1_2 – K7_2). Although the questioned impressions appear to display the same tread design and noise treatment as the suspect tire, indications of non-association and apparent dissimilarities were observed.
6RVWGN-5351	Q1: Indications of non-association. Size and tread design correspond; however there are dissimilarities in general wear. Q2: Identification. Q1 was made by the known tire. Correspondence in the size and tread design. Agreement in class characteristics and randomly acquired characteristics of sufficient quality and quantity. The agreement/correspondence is in segment(s) B-D of the known tire. Q3: High degree of association with agreement in class characteristics, overall wear and limited correspondence of randomly acquired characteristics. The agreement/correspondence is in segment(s) F-A of the known tire. Q4: Association of class characteristics between the questioned impression and the known tire. Correspondence between size, class characteristics and general. Correspondence/agreement is in segment(s) B-C of the known tire.
76F4K3-5351	The tyre marks Q2 and Q3 showed agreement in pattern, pattern-size, pitch and fine detail with the submitted tyre lifts such that, in our opinion, the tyre is responsible for these tyre marks. The tyre marks Q1 and Q4 showed agreement in pattern, pattern-size and pitch to the submitted tyre lifts, however there are significant differences in how the marks are worn such that, in our opinion, the submitted tyre is not responsible for these tyre marks.
7JZEFK-5351	A visual examination was conducted between questioned tire track impressions (Q1-Q2, Q3-Q4) and the photographs representing the recovered tire (K1-K7). Impression Q2 corresponds in tread design, physical size, wear and randomly acquired characteristics (RACs) with the recovered tire (segments B - D). In the opinion of the examiner, Impression Q2 was made by the recovered tire (Identification). Impression Q3 corresponded in tread design, physical size, wear and RACs with the recovered tire (segments F - A). In the opinion of the examiner, Impression Q3 was made by the recovered tire (Identification). Impressions Q1 and Q4 corresponded in tread design and physical size with the recovered tire, however, they did not correspond in RACs. In the opinion of the examiner, Impressions Q1 and Q4 were not made by the recovered tire (Exclusion). Other tires with the same tread design and physical size should be considered as possible sources for Impressions Q1 and Q4.
7WKUJK-5351	Q1 and Q4 were eliminated as coming from the known tire. The wear is not consistent between the two, being more prevalent on the known tire. Q2 was identified to segments B-D on the known tire through the comparison of stone holds, wear, and random characteristics. Q3 was identified to segments F-A on the known tire through the comparison of stone holds, wear, and random characteristics.
834NQ2-5351	Q1) Physical configuration such as size of tire and shape pattern of the recovered tire is compatible to the questioned imprints but, overall shape of wear pattern is not compatible and specific shape of sipes are not matched. So it is concluded as 'F (Indications of non-association)'. Q2) Physical configuration such as size of tire and shape pattern of the recovered tire is considerably compatible to the questioned imprints but, it is difficult to identify the recovered tire and questioned imprints as specific shape of sipes and wear pattern is not completely matched in some points, it is concluded as 'B (High degree of association)'. Q3) Physical configuration such as size of tire and shape pattern of the recovered tire is considerably compatible to the questioned imprints but, it is difficult to identify the recovered tire and questioned imprints as specific shape of sipes and wear pattern is not completely matched in some points, it is concluded as 'B (High degree of association)'. Q4) Physical configuration such as size of tire and shape pattern of the recovered tire is considerably compatible to the questioned imprints and the form of wear and characteristic of sipes is matched in some point. But as the different characteristic is found in several points which could not judge as same tire, it is concluded as 'D (Limited association of class characteristics)'.
96RA6B-5355	The submitted known tire was excluded from being the source of the Q1 questioned impression.

TABLE 2

WebCode-Test	Conclusions
	<p>Although the known tire was the same general design as the questioned impression, sufficient differences were noted in the comparison of wear and mold, and random acquired characteristics between the questioned impression and the known tire. The known tire was not the source of, and did not make the Q1 impression. The Q2 questioned tire impression and the known tire segments B-C and C-D share an agreement of class and randomly acquired characteristics of sufficient quality and quantity for an identification. The particular known tire was the source of, and made, the questioned impression. Another tire being the source of the impression is considered a practical impossibility. The Q3 questioned tire impression and the known tire segments F-G and G-A share an agreement of class and randomly acquired characteristics of sufficient quality and quantity for an identification. The particular known tire was the source of, and made, the questioned impression. Another tire being the source of the impression is considered a practical impossibility. The submitted known tire was excluded from being the source of the Q4 questioned impression. Although the known tire was the same general design as the questioned impression, sufficient differences were noted in the comparison of wear and mold, and random acquired characteristics between the questioned impression and the known tire. The known tire was not the source of, and did not make the Q4 impression.</p>
9JNP3J-5355	<p>A. Imprint Q1 is a partial imprint of a tire and it corresponds in shape, design and size but not in the wear and individual characteristics of the suspect tire. It is my opinion there is Indications of non-association between the suspected tire (K1-K7) and this imprint. B. Imprint Q2 is a partial imprint of a tire and it corresponds in shape, design and size but not in the wear and individual characteristics of the suspect tire. It is my opinion there is Indications of non-association between the suspected tire (K1-K7) and this imprint. C. Imprint Q3 is a partial imprint of a tire and it corresponds in shape, design and size but not in the wear and individual characteristics of the suspect tire. It is my opinion there is Indications of non-association between the suspected tire (K1-K7) and this imprint. D. Imprint Q4 is a partial imprint of a tire and it corresponds in shape, design and size but not in the wear and individual characteristics of the suspect tire. It is my opinion there is Indications of non-association between the suspected tire (K1-K7) and this imprint.</p>
BUGWTY-5351	<p>It was determined that the impressions, Q-2 and Q-3 were made by the submitted tire, K-1. It was also determined that the impressions, Q-1 and Q-4, were not made by the submitted tire, K-1.</p>
BXJTKE-5355	<p>Q1-Q4 are tire impressions which were compared to the known suspect tire K. The tread design and physical size of Q1 is similar to K. However, due to differences in wear, it was determined that Q1 was not made by K. The tread design, physical size and general wear of Q2 correspond to K. In addition there are several corresponding randomly acquired characteristics. Therefore it was determined that impression Q2 was made by this tire, K. The tread design, physical size and general wear of Q3 correspond to K. In addition there are several corresponding randomly acquired characteristics. Therefore it was determined that impression Q3 was made by this tire, K. The tread design and physical size of Q4 is similar to K. However, due to differences in wear, it was determined that Q4 was not made by K.</p>
CYQABX-5351	<p>Q1 THERE IS CORRESPONDENCE OF DESIGN AND PHYSICAL SIZE AND POSSIBLY GENERAL WEAR BETWEEN THE QUESTIONED AND KNOWN ITEM. Q2 AND Q3 THERE IS A CORRESPONDENCE OF CLASS CHARACTERISTICE, IN ADDITION TOUNUSUAL WEAR AND /OR ONEOR MORE RANDOMLY ACQUIRED CHARACTERISTICS BETWEEN THE QUESTIONED AND KNOWN ITEM. Q4 THE QUESTIONED ITEM LACKS SUFFICIENT DETAIL FOR MEANINGFUL CONCLUSION IN COMPARISON TO THE KNOWN ITEM.</p>
D3MBXX-5355	<p>The results of the examination support that the imprint ITEM Q1 was not made with the recovered tire ITEM K (Level -2). The results of the examination extremely strongly support that the imprint ITEM Q2 was made with the recovered tire ITEM K (Level +4). The results of the examination strongly support that the imprint ITEM Q3 was made with the recovered tire ITEM K (Level +3). The results of the examination support that the imprint ITEM Q4 was not made with</p>

TABLE 2

WebCode-Test	Conclusions
EBF792-5351	<p>the recovered tire ITEM K (Level -2)</p> <p>Impressions Q2 and Q3 were made by the submitted tire. Impressions Q1 and Q4 could have been made by the submitted tire based on class characteristics; however, insufficient detail precludes a more conclusive determination. These impressions could not be identified or eliminated as having been made by the submitted tire.</p>
EEGU6Q-5355	<p>The questioned imprint Q2 shares agreement of class characteristics and randomly acquired characteristics of sufficient quality and quantity with the recovered tire (Toyo Proxes A27 P185/60 R16) and the known imprint (segment B-D), which were made with the tire. The recovered tire was the source of, and made, the questioned imprint Q2. Another item of tire being the source of the imprint is considered a practical impossibility. The class characteristics of both design and physical size correspond between the questioned imprint Q3 and the known imprint(segment F-G). The haracteristics observed exhibit strong associations between the questioned imprint Q3 and the known tire. The quality of the questioned imprint and the known imprints were insufficient for an identification. Sufficient differences were noted in the comparison of class characteristics between the questioned imprints Q1 (segment F-G)and Q4 (segment B-C) and the known imprints of the tire. The recovered tire was not the sopurce of, and did not make the questioned imprints Q1 and Q4.</p>
FKHRTL-5351	<p>ITEMS: 1: a sealed manila envelope identified as "2019 CTS Forensic Testing Program Test No. 19-5351: TIRE TRACK IMPRINT EVIDENCE sample pack: TIEP" containing: 1-1: photographs of the recovered tire (segments), lighted from above identified as "K1-K7". 1-2: photographs of known imprints made with the recovered tire (segments) identified as "K1_2-K7_2". 1-3: photographs of questioned imprints found on a white advertisement poster identified as "Q1-Q2". 1-3-1: questioned imprint Q1. 1-3-2: questioned imprint Q2. 1-4: photographs of questioned imprints found on a cardboard box identified as "Q3-Q4". 1-4-1: questioned imprint Q3. 1-4-2: questioned imprint Q4. RESULTS: While the questioned impression Q1, item #1-3-1, and the known tire impression, item #1-2, corresponded in physical size and design characteristics at segment F-G a meaningful conclusion could not be reached due to discrepancies in tread block alignment. The design characteristics, physical size, and three (3) randomly acquired characteristics of the questioned impression Q2, item #1-3-2, were found to correspond to the known tire impression, item #1-2, segment B-C. The design characteristics and physical size of the questioned impression Q3, item #1-4-1, were found to correspond to the known tire impression, item #1-2, segment F-G. No randomly acquired characteristics were found. Dissimilarities in tread block alignment and randomly acquired characteristics between the questioned impression Q4, item #1-4-2, and the known tire impression, item #1-2, segment B-C indicated non-association; however, the details of the impression were not sufficient to permit an exclusion. OPINION: No opinion could be reached regarding the questioned impression Q1, item #1-3-1, and the known tire, item #1-1. The questioned impression Q2, item #1-3-2, was very likely to have been made by the known tire, item #1-1. This is a High Degree of Association. Please see Association Key below. The known tire, item #1-1, is a possible source of the questioned impression Q3, item #1-4-1. This is an Association of Class Characteristics. Please see Association Key below. The questioned impression Q4, item #1-4-2, showed Indications of Non-Association to the known tire, item #1-1. Please see Association Key below. NOTE: Class characteristics can include design, physical size, and areas of wear. Associative Key for Footwear or Tire Impressions: Identification: This is the highest degree of association. The questioned impression and the known footwear or tire share agreement of class and randomly acquired characteristics of sufficient quality and quantity. The particular known footwear or tire was the source of, and made, the questioned impression and another tire or item of footwear being the source of this impression is considered a practical impossibility. High Degree of Association: The characteristics observed exhibit strong associations between the questioned impression and the known footwear or tire; however, the quality and/or quantity were insufficient for an identification. Other footwear or tires with the same characteristics are included as possible sources only if they display the same class</p>

TABLE 2

WebCode-Test	Conclusions
GL89QZ-5351	<p>characteristics and/or randomly acquired characteristics observed in the questioned impression. Association of Class Characteristics: The known footwear or tire is a possible source of the questioned impression and therefore could have produced the questioned impression. Other footwear or tires with the same class characteristics are included as possible sources of the questioned impression. Limited Association of Class Characteristics: Certain factors have limited the conclusion to a general association of class characteristics. Other footwear or tires with the same class characteristics are included as possible sources of the questioned impression. Indications of Non-Association: Dissimilarities between the questioned impression and the known footwear or tire indicated non- association; however, the details or features were not sufficient to permit an exclusion. Exclusion: The particular known footwear or tire did not make the questioned impression.</p> <p>Q1: Indications of Non-Association: I compared Item Q1 to each of the photographs of known imprints made with the recovered tire (Items K1_2 through K7_2). The only segments where the tread design pattern exhibited the same class characteristics of the size, shape and spatial relationship of the tread design pattern are Items K4_2 (Segment D-E) and K6_2 (Segment F-G). It appears that there may be a difference in the wear patterns exhibited in Item Q1 compared to the test imprints but it is difficult to determine if these differences were caused by actual wear on the tire or if the differences can be explained as a function of the creation of the test imprints. Q2: Identification: I compared Item Q2 to each of the photographs of known imprints made with the recovered tire (Items K1_2 through K7_2). The only segments where the tread design pattern exhibited the same class characteristics of the size, shape and spatial relationship of the tread design pattern are Items K2_2 (Segment B-C) and K3_2 (Segment C-D). The questioned and known items share agreement of class and at least eight Randomly Acquired Characteristics (RAC's) in the same locations on the tire (Item K-2 (Segment B-C), the questioned imprint (Item Q2) and the test imprint [Items K2_2 (Segment B-C) and K3_2 (Segment C-D)]. This agreement is of sufficient quality and quantity to conclude that the questioned imprint exhibited in Q2 was produced by the submitted tire (Item K-2). It should be noted that there are numerous areas where there appear to be differences in the test imprints and Q2. It is difficult to tell if these differences are being caused by inconsistent amounts of ink being applied, inconsistently applied pressure during the creation of the test imprint, or some other reason caused during the creation of the test imprint. When comparing the areas of overlap between Items K2_2 (Segment B-C) and K3_2 (Segment C-D) I observed differences in some of the same tread design elements within those sections of the test imprints themselves. It appears that these differences are explainable differences caused during the creation of the test imprints. Q3: Indications of Non-Association: I compared Item Q3 to each of the photographs of known imprints made with the recovered tire (Items K1_2 through K7_2). The only segments where the tread design pattern exhibited the same class characteristics of the size, shape and spatial relationship of the tread design pattern are Items K6_2 (Segment F-G) and K7_2 (Segment G-A). It appears that there may be a difference in the wear patterns exhibited in Item Q3 compared to the test imprints but it is difficult to determine if these differences were caused by actual wear on the tire or if the differences can be explained as a function of the creation of the test imprints. Q4: Exclusion: I compared Item Q4 to each of the photographs of known imprints made with the recovered tire (Items K1_2 through K7_2). The only segment where the tread design pattern exhibited the same class characteristics of the size, shape and spatial relationship of the tread design pattern is Item K2_2 (Segment B-C). It appears that there may be a difference in the wear patterns exhibited in Q4 compared to the test imprint but it is difficult to determine if these differences were caused by actual wear on the tire or if the differences can be explained as a function of the creation of the test imprint. There were areas of disagreement noted within several of the tread design elements which were significant enough to eliminate the tire from being responsible for making the imprint in Q4.</p>
H87ZK7-5351	<p>The submitted test impressions of a Toyo Proxes A27 tire are excluded as a source of the tire track labeled as Q1. The submitted test impressions of a Toyo Proxes A27 tire are identified as a source of the tire track labeled as Q2. The submitted test impressions of a Toyo Proxes A27 tire</p>

TABLE 2

WebCode-Test	Conclusions
H9EGAN-5351	<p>are identified as a source of the tire track labeled as Q3. The submitted test impressions of a Toyo Proxes A27 tire are excluded as a source of the tire track labeled as Q4.</p> <p>The photograph of the questioned imprint found on a white advertisement poster, #Q1, was compared to the photographs of the recovered tire, #K1-K7, and the photographs of the known imprints made with the recovered tire, #K1_2-K7_2. #Q1 had indications of non-association with #K1_2-K7_2 due to sufficient differences noted in the comparison of randomly acquired characteristics and the wear pattern. Photographs of complete known imprints depicting the appropriate segment with higher quality of reference imprints from the recovered tire (segments) are needed for a more conclusive result. The photograph of the questioned imprint found on a white advertisement poster, #Q2, was compared to the photographs of the recovered tire, #K1-K7, and the photographs of the known imprints made with the recovered tire, #K1_2-K7_2. #Q2 had limited association of class characteristics with #K1_2-K7_2 due to agreement in tread design, size and shape. Photographs of complete known imprints depicting the appropriate segment with higher quality of reference imprints from the recovered tire (segments) are needed for a more conclusive result. The photograph of the questioned imprint found on a cardboard, #Q3, was compared to the photographs of the recovered tire, #K1-K7, and the photographs of the known imprints made with the recovered tire, #K1_2-K7_2. #Q3 had limited association of class characteristics with #K1_2-K7_2 due to agreement in tread design, size and shape. Photographs of complete known imprints depicting the appropriate segment with higher quality of reference imprints from the recovered tire (segments) are needed for a more conclusive result. The photograph of the questioned imprint found on a cardboard, #Q4, was compared to the photographs of the recovered tire, #K1-K7, and the photographs of the known imprints made with the recovered tire, #K1_2-K7_2. #Q4 had indications of non-association with #K1_2-K7_2 due to sufficient differences noted in the comparison of randomly acquired characteristics and the wear pattern. Photographs of complete known imprints depicting the appropriate segment with higher quality of reference imprints from the recovered tire (segments) are needed for a more conclusive result.</p>
HCX4DA-5351	<p>Four (4) questioned, partial tire impressions, previously marked Q1 through Q4, were found on the two (2) photographs in Submission 001. The questioned, partial tire impressions, Q1 through Q4, have been compared with the pictures of the known tire and known tire test impressions found in Submission 001. The questioned, partial tire impression, Q1, although corresponding in physical size, shape and tread design as the known tires and test impressions depicted in Submission 001, was not made by that tire. The questioned impression and known tire exhibit sufficient differences of wear and individual randomly acquired characteristics. The questioned, partial tire impression, Q2, has been identified within segments B through D of the known tire test impressions and was made by this tire. The questioned, partial tire impression, Q3, has been identified within segments F through A of the known tire test impressions and was made by this tire. The questioned, partial tire impression, Q4, although corresponding in physical size, shape and tread design as the known tires and test impressions depicted in Submission 001, was not made by that tire. The questioned impression and known tire exhibit sufficient differences of wear and individual randomly acquired characteristics.</p>
LEC3YU-5351	<p>Impressions Q2 and Q3 were made by the submitted tire. Impressions Q1 and Q4 could have been made by the submitted tire, based on class characteristics; however, there are no significant individual similarities to suggest that they were.</p>
LEUYHG-5355	<p>The tire impression from Q1 matches with segments C-D and D-E. The same sculpture succession is found on the tire tread and on the impressions of Q1. We notice an asymmetrical well-worn of the tire blades located on the tires segments C-D and D-E and on the impression Q1. The tire impression from Q2 matches with segment B-C and C-D. The same sculpture succession is found on the tire tread and on the impressions of Q2. We notice an asymmetrical well-worn of the tire blades located on the tires segments B-C and C-D and on the impression Q2. The tire impression from Q3 matches with segment F-G and G-A. The same sculpture succession is found on the tire tread and on the impressions of Q3. The tire segment F-G and</p>

TABLE 2

WebCode-Test	Conclusions
	<p>G-A present the same wear level than the impression from Q3 -The tire impression from Q4 matches with segment B-C. The same sculpture succession is found on the tire tread and on the impressions of Q4. We notice an asymmetrical well-worn of the tire blades located on the tires segments B-C and on the impression Q4. To conclude : The tires impressions Q1 to Q4 corresponding with tire TOYO Proxes A27 size 185 (same size, same wear and same sculptures successions). There are not relevant use features on the tread designs. We notice an asymmetrical well-worn of the tire blades. However, this is not significant enough to be certain it is the same tire.</p>
LNGW9L-5355	<p>Q2 was identified as having been made by the recovered known tire (segments B-D). Q3 was identified as having been made by the recovered known tire (segments F-A). Q1 could have been made by the recovered known tire (segments C-E and E-G). The questioned imprint Q1 shared similar class characteristics (physical shape and size) with the recovered known tire. Other tires with similar class characteristics could also be the source of the questioned imprint Q1. Q4 could have been made by the recovered known tire (segments B-C). The questioned imprint Q4 shared similar class characteristics (physical shape and size) with the recovered known tire. Other tires with similar class characteristics could also be the source of the questioned imprint Q4.</p>
LPUG2W-5351	<p>It is the opinion of the undersigned examiners that the Questioned tire track imprints labeled Q2 (in Item 001-1) and Q3 (in Item 001-2) in Submission 001 corresponds in physical size, tread design, wear characteristics, and randomly acquired characteristics with the Known tire in Items 001-3 through 001-16 in Submission 001. Tire track imprints Q2 and Q3 were made by the Known tire. It is the opinion of the undersigned examiners that the Questioned tire track imprints labeled Q1 (in Item 001-1) and Q4 (in Item 001-2) in Submission 001 is consistent in physical size and tread design with the Known tire in Items 001-3 through 001-16 in Submission 001. However, the tire track imprints labeled Q1 and Q4 are not consistent in wear characteristics with the Known tire in Items 001-3 through 001-16 in Submission 001. These tire track imprints were not made by the Known tire.</p>
M6GG72-5355	<p>The questioned impressions Q1 and Q4 were excluded from the tire impressions marked K1-K7 in item 1. The questioned impression Q2 was identified to the known tire and impressions marked K2 and K3 in evidence item 1. The questioned impression Q3 was identified to the known tire and impressions marked K6 and K7 in evidence item 1.</p>
MVGUD4-5351	<p>The submitted photographs of questioned tire track impressions were visually compared to the submitted photographs of a known Toyo Proxes A27 tire and its test impressions. Each of the questioned impressions corresponded in tread design, size of tread, and pitch sequence to a portion of the known tire. Questioned impression Q1 was dissimilar in wear and randomly acquired characteristics to the known Toyo Proxes A27 tire. In the opinion of the examiner, this tire is excluded as a possible source for impression Q1 (Exclusion). Questioned impression Q2 corresponded to a portion of the known tire (segments marked B-C-D) in tread design, size of tread, pitch sequence, and wear characteristics. Multiple void areas in questioned impression Q2 corresponded in size, shape, position, and orientation to randomly acquired characteristics on the known tire. In the opinion of the examiner, the known Toyo Proxes A27 tire made questioned impression Q2 (Identification). For another tire to have made this impression, it would have to share the same tread design, size of tread, pitch sequence, wear characteristics, and randomly acquired characteristics of the same size, shape, position, and orientation. Questioned impression Q3 corresponded to a portion of the known tire (segments marked F-G-A) in tread design, size of tread, pitch sequence, and wear characteristics. A few void areas in questioned impression Q3 corresponded in size, shape, position, and orientation to randomly acquired characteristics on the known tire. In the opinion of the examiner, the known Toyo Proxes A27 tire made questioned impression Q3 (Identification). Other tires with the same tread design, size of tread, pitch sequence, wear characteristics, and randomly acquired characteristics of the same size, shape, position, and orientation are also included in the population of possible sources. Questioned impression Q4 was dissimilar in some wear features and randomly</p>

TABLE 2

WebCode-Test	Conclusions
	acquired characteristics to the known Toyo Proxes A27 tire. In the opinion of the examiner, this tire is excluded as a possible source for impression Q4 (Exclusion). If additional known tires are obtained, they may be submitted for comparison to the questioned impressions.
MW8TR3-5351	[No Conclusions Reported.]
N6HJPD-5355	The questioned impressions marked "Q1" and "Q4" were found not to have been made by the recovered tyre. The questioned impressions marked "Q2" and "Q3" were found to have been made by the recovered tyre.
NDQARG-5351	The questioned tire impressions Q1 - Q4 were visually compared to the photographs of the tire imprints and photographs of the tire segments. Based on differences observed in general wear and/or randomly acquired characteristics, the known tire represented in the photographs were excluded from having produced questioned impressions Q1 and Q4 (Exclusion). Based on the correspondence observed in class characteristics, general wear and randomly acquired characteristics, the known tire represented in the photographs were identified as having produced questioned impressions Q2 and Q3 (Identification).
NVNB4M-5351	The partial tire impressions visible on the photographs in Exhibits #Q1 and #Q4 were excluded from having been made by the tread of the tire in Exhibit #K1 based on class characteristic differences (wear). The partial tire impressions visible on the photographs in Exhibits #Q2 and #Q3 were identified as having been made by the tread of the tire in Exhibit #K1.
PG9P4U-5351	Tire impressions suitable for comparative examination were noted in Exhibit Q1-Q2 and in Exhibit Q3-Q4. One (1) tire impression noted in Exhibit Q1-Q2 (image Q2) was made by the tire depicted in Exhibits K2 and K3 and represented by the tire standards in Exhibits K2_2 and K3_2 (segments B-C and C-D) based on design, physical size, noise treatment, wear, and randomly acquired characteristics. This opinion means that the observed class characteristics and randomly acquired characteristics correspond and the examiner would not expect to see the same agreement of features repeated in an impression that came from a different source. One (1) tire impression noted in Exhibit Q3-Q4 (image Q3) was made by the tire depicted in Exhibits K6 and K7 and represented by the tire standards in Exhibits K6_2 and K7_2 (segments F-G and G-A) based on design, physical size, noise treatment, wear, and randomly acquired characteristics. This opinion means that the observed class characteristics and randomly acquired characteristics correspond and the examiner would not expect to see the same agreement of features repeated in an impression that came from a different source. The remaining tire impressions noted in Exhibit Q1-Q2 (image Q1) and Exhibit Q3-Q4 (image Q4) were not made by the tire depicted in Exhibits K1 through K7 as represented by the tire standards in Exhibits K1_2 through K7_2 based on differences in wear. This opinion means that there are sufficient features in disagreement such that the examiner would not expect to see the same disagreement repeated in an impression that came from the same source.
Q67TCC-5355	Q1, Q3, and Q4 correspond in design and physical size to the known tire. The known tire is a possible source of Q1, Q3, and Q4. The known tire could have made the questioned impressions; however, tires with the same class characteristics observed in the questioned impression are included in the population of possible sources. The questioned impression, Q2, and the known tire share agreement of class and randomly acquired characteristics of sufficient quality and quantity. The known shoe or tire made the questioned impression.
QXNJ63-5351	There are indications of non-association between the questioned impression Q1 in Item 1 and the known tire. Dissimilarities between the questioned impression and the known tire indicate non-association; however the details or features were not sufficient to permit an exclusion. The questioned impression Q2 in Item 1 was identified as having been made by the known tire. The questioned impression Q3 in Item 1 was identified as having been made by the known tire. There is an association of class characteristics between the questioned impression Q4 in Item 1 and the known tire. The known tire could have produced the questioned impression. Other tires

TABLE 2

WebCode-Test	Conclusions
	with the same class characteristics observed in the questioned impression are included in the population of possible sources.
RKHMLZ-5351	There are similarities in tread design, tread block dimension and spacing, wear, and randomly acquired characteristics between impression Q2 and known tire segments B - D and impression Q3 and known tire segments F - A; therefore, the known tire made the questioned impressions. Impressions Q1 and Q4 have a similar tread design to the known tire; however, there are dissimilarities in wear seen in the questioned impressions. Therefore, the known tire did not make impressions Q1 or Q4.
RM9NRN-5351	1) Impressions Q2 and Q3 were made by the submitted tire. 2) Impression Q1 and Q4 could have been made by the submitted tire based on class characteristics: however, there were no significant individual characteristics to suggest that it was.
RVC8JJ-5351	The known tire is dissimilar in design element spacing to the question impression Q1 and was therefore excluded as having made this impression. There is no correspondence in specific tread design to include spacing/dimensions between design elements. Differences in wear were also observed. The known tire, as submitted, is unlikely to be the source of the impression depicted in Q1. The known tire was identified as having made the questioned impression depicted in Q2 based on a correspondence of observed class characteristics (specific tread design and size), general wear, and randomly acquired characteristics of sufficient quality and quantity. The correspondence was observed in segments B to C (K2_2) of the known tire. The known tire was the source, and made, the questioned impression depicted in Q2. The known tire was identified as having made the questioned impression depicted in Q3 based on a correspondence of observed class characteristics (specific tread design and size), general wear, and randomly acquired characteristics of sufficient quality and quantity. The correspondence was observed in segments F to A (K6_2 to K7_2) of the known tire. The known tire was the source, and made, the questioned impression depicted in Q3. A limited association of class characteristics (tread design) was determined to exist between the known tire and the questioned impression depicted in Q4. Some correspondence was observed in segment B to C (K2_2) of the known tire, however there were significant limiting factors. Slight differences in wear and spacing between tread design elements was observed, however these differences lacked sufficient detail and clarity for a stronger conclusion. The known tire or another tire with similar class characteristics are included in the population of possible sources to the impression depicted in Q4.
RXNKNF-5351	Segments from the known tire, specimens #K1 through #K7, were used to make known tire imprint references, #K1_2 through #K7_2. The references were compared to the questioned tire imprints in images Q1 through Q4. The comparison resulted in the following conclusions: It was determined that the known tire segments, specimens K1 - K7, exhibited dissimilarities when compared to the questioned imprints in images #Q1 and #Q4, due to differences in wear and some randomly acquired characteristics. It was determined that the known tire segments, specimens K1 - K7, exhibited some similar class characteristics when compared to the questioned imprints in images #Q2 and #Q3, however there were limiting factors which prevented a stronger association.
TGDH4D-5351	The known tire K printed image segments (A-B, B-C, C-D, D-E, E-F, F-G and G-A) and similar printed test impression segments were visually compared to prints of questioned tire impressions Q1, Q2, Q3 and Q4. Known tire K (segments C-D and D-E) was similar in tread design, overall size and noise treatment to questioned tire impression Q1. However, Q1 displayed differences in wear to K and did not display voids similar to randomly acquired characteristics seen in K. Therefore, in the opinion of the examiner, known tire K was eliminated from having made questioned tire impression Q1 (Exclusion). Known tire K (segments B-C and C-D) was similar in tread design, overall size and noise treatment to questioned tire impression Q2. Wear was not present or comparable in this part of known tire K. Additionally, several randomly acquired characteristics in K (segment B-C) corresponded in location, size and shape to voids observed in Q2. In the opinion of the examiner, questioned tire impression Q2 was made by segments B-C

TABLE 2

WebCode-Test	Conclusions
	<p>and C-D of the known tire K (Identification). Known tire K (segments F-G and, G-A) was similar in tread design, overall size, noise treatment and wear to questioned tire impression Q3. Additionally, several randomly acquired characteristics in K (segments F-G and, G-A) corresponded in location, size and shape to voids observed in Q3. In the opinion of the examiner, questioned tire impression Q3 was made by segments F-G and G-A of known tire K (Identification). Known tire K (segment B-C) was similar in tread design, overall size and noise treatment to questioned tire impression Q4. However, Q4 did not display voids similar to randomly acquired characteristics seen in K. Therefore, in the opinion of the examiner, known tire K was eliminated from having made questioned tire impression Q4 (Exclusion).</p>
V84QWF-5355	<p>The questioned imprint Q1 was not made by the recovered tire. The questioned imprint Q2 was probably made by the recovered tire. The questioned imprint Q3 was probably made by the recovered tire. Although the questioned imprint Q4 shared general design features with the known imprints made by the recovered tire, some possible dissimilarities were noted which indicated that the questioned imprint probably was not left by the recovered tire.</p>
WGKUHI-5351	<p>1. Impressions Q2 and Q3 were made by the submitted tire. 2. Impressions Q1 and Q4 could have been made by the submitted tire based on similarities in class characteristics; however, insufficient detail precludes a more conclusive determination. Any additional suspect tires should be submitted to the laboratory for examination.</p>
WU89C7-5351	<p>Two tire imprints (Q1-Q2) were observed on a white advertisement poster and two tire imprints (Q3-Q4) were observed on a cardboard box. These imprints (Q1-Q4) all featured the same 5 rib tread design consisting of block-shaped elements. Photographs (K1-K7) of the recovered tire and photographs (K1_2-K7_2) of the known imprints made with the recovered tire, a Toyo Proxes A27 tire, were submitted for comparison. The tread design observed on the known tire features a 5 rib tread design consisting of block-shaped elements. The tire imprints (Q1-Q4) were visually compared to the photographs (K1-K7 and K1_2-K7_2) of the Toyo Proxes A27 tire. The partial imprint (Q1) corresponds in tread design and physical shape and size to the photographs of the recovered tire; however, there are differences in wear and randomly acquired individual characteristics. Therefore, the Toyo Proxes A27 tire observed in the photographs (K1-K7 and K1_2-K7_2) can be ELIMINATED as a source of the partial tire imprint (Q1). The partial imprint (Q2) corresponds in tread design, physical shape and size, wear, and several randomly acquired individual characteristics to Segment B-C of the recovered tire. Therefore, the partial tire imprint (Q2) was IDENTIFIED as having been made by Segment B-C of the Toyo Proxes A27 tire observed in the photographs (K2 and K2_2). The partial imprint (Q3) corresponds in tread design, physical shape and size, wear, and several randomly acquired individual characteristics to Segments F-G and G-A of the recovered tire. Therefore, the partial tire imprint (Q3) was IDENTIFIED as having been made by Segments F-G and G-A of the Toyo Proxes A27 tire observed in the photographs (K6-K7 and K6_2-K7_2). The partial imprint (Q4) corresponds in tread design and physical shape and size to the photographs of the recovered tire; however, there are differences in wear and randomly acquired individual characteristics. Therefore, the Toyo Proxes A27 tire observed in the photographs (K1-K7 and K1_2-K7_2) can be ELIMINATED as a source of the partial tire imprint (Q4).</p>
X7JQQV-5355	<p>The Q1TT1 partial tire impression was not made by the segments depicted in K1-K7 and recorded in K1_2 - K7_2. The Q2TT1 partial tire impression was made by the B-C segment depicted in K2 and recorded in K2_2. It was not made by the segments depicted in K1 or K3-K7 and recorded in K1_2 and K3_2 - K7_2. The Q3TT1 partial tire impression was made by the F-G and G-A segments depicted in K6 and K7 and recorded in K6_2 and K7_2. It was not made by the segments depicted in K1-K5 and recorded in K1_2 - K5_2. The Q4TT1 partial tire impression was not made by the segments depicted in K1-K7 and recorded in K1_2-K7_2.</p>
YAU9GB-5351	<p>The tire imprint labeled Q1 was compared with the known tire labeled K1 with the following results: The imprint labeled Q1 had some similar class characteristics as the known tire. The tread pattern matched up in segment F – G with the noise treatment, but the known tire had less</p>

TABLE 2

WebCode-Test	Conclusions
	<p>wear seen in test imprint and on the tire. Because the vehicle was found within 24 hours of the time of the incident, it is not believed that the amount of wear seen in the questioned imprint would have taken place in that time frame. Because of this, the tire labeled K1 was eliminated as having made imprint Q1. The imprint labeled Q2 corresponds in design, wear, noise treatment and shares 4+ individual random characteristics or defects with the known tire labeled K1. In the opinion of the examiner, the imprint labeled Q2 was made by the known tire, Item K1. The possibility of another tire being the source of the imprint would be considered highly unlikely. The imprint labeled Q3 corresponds in design, wear, noise treatment and shares 3+ individual random characteristics or defects with the known tire labeled K1. In the opinion of the examiner, the imprint labeled Q3 was made by the known tire, Item K1. The possibility of another tire being the source of the imprint would be considered highly unlikely. The imprint labeled Q4 had some similar class characteristics as the known tire. The tread pattern matched up in segment G - A with the noise treatment, but the known tire had less wear seen in test imprint and on the tire. Because the vehicle was found within 24 hours of the time of the incident, it is not believed that the amount of wear seen in the questioned imprint would have taken place in that time frame. Because of this, the tire labeled K1 was eliminated as having made imprint Q4.</p>
YW9P6U-5351	<p>There is an association of class characteristics between the questioned impression (Q1) and the exemplar impressions as represented in K1_2 through K7_2. There is a high degree of association between the questioned impression (Q2) and the exemplar impressions as represented in K1_2 through K7_2. There is a high degree of association between the questioned impression (Q3) and the exemplar impressions as represented in K1_2 through K7_2. There is an association of class characteristics between the questioned impression (Q4) and the exemplar impressions as represented in K1_2 through K7_2.</p>
ZHK62C-5351	<p>Comparison conducted between photographs of scene impression Q1-Q4 with photographs of recovered tyre segments K1-K7 and photographs of known imprints made with the recovered tyre K1-K7. Scene impression Q1 was not made by the recovered tyre. Scene impressions Q2, Q3 and Q4 shared similar pattern components with the recovered tyre however their size and distribution was slightly different and no confirmable RACs (Randomly Acquired Characteristics) were shared between the scene and test impressions. These dissimilarities indicated non-association between scene impressions Q2, Q3 and Q4 and the test impressions made with the recovered tyre.</p>

Additional Comments

TABLE 3

WebCode-Test	Additional Comments
2E2AYK-5351	Due to conflicting information (similarities and differences) noted in the K1-K7 vs K1_2-K7_2 images, as well as during comparison to Q1-Q4, it was not possible to form an opinion other than inconclusive. See section 2 (report conclusion wording) for more detailed information.
3EUQ6D-5351	Impressions Q1, Q2 & Q3 were made by the recovered tire. Impression Q4 could not be identified or eliminated as being made by the recovered tire.
4DYHJF-5355	Known tire item #1 could be neither identified nor excluded as the source of tire impression Q4. General design, dimension, and noise treatment appear to correspond; however, the appearance of possible wear and randomly acquired characteristics do not appear to correspond between known tire item #1 and tire impression Q4. Due to the limitations of this comparison (only one test impression provided, the physical tire was not provided), and based on both the correspondences and non-correspondences observed, no meaningful conclusion may be rendered. *If additional test impressions and/or the physical tire was provided for comparison, additional comparative analysis may be performed with tire impression Q4.
76F4K3-5351	Given the similarities in the non-matching tyre marks, we would expect to have lifts from all tyres of the seized vehicle for comparison. We would have generally had access to the actual tyre in casework. We would have generally had access to the actual marks when they are present on moveable items.
7JZEFK-5351	This test should have included the actual tire for comparison purposes. Merely having a single photo of each tire segment that was illuminated from above was insufficient for the examination.
D3MBXX-5355	The appearance of the tire was very specific and detailed. Though the submitted pictures of the tire (K1-K7) were of good quality, having access to the actual tire would have been valuable and helpful in confirming the observed details. I would have been helpful to have several impressions from the tire with different lightning and pressure.
FKHRTL-5351	Inconclusive was utilized for the Q1 portion of this proficiency test. The class characteristic of general design appeared to correspond with the segment F-G of the known tire impression; however, the alignment of the tread blocks appeared slightly off. This discrepancy could have been due to slippage on the poster media as the vehicle passed over it or the impression was made by a different tire with the same general design. For this reason, the inconclusive classification was utilized.
GL89QZ-5351	Since there is only one set of test imprints it is difficult to determine if the differences being observed between known imprints and questioned imprints are actual differences in wear and RAC's or if they can be attributed to: 1) Artifacts created during the creation of the test imprint and evidence imprint. These could be caused by the surface the evidence and test imprint material was resting on when the imprints were created. They could also be caused by lose debris that may have been on the tire such as dirt, vegetation, oil, or other foreign material that prevent uniform contact of the ink material with the tire. 2) How even or well the ink was applied to the surface of the tire before the application of the test imprint and evidence imprint. 3) The pressure or weight applied to the tire during the application of both the evidence imprint and test imprint. It is unclear if the test prints were made using the weight of the vehicle. In one section of the scenario it reads, "Investigators were able to recover one tire directly from the vehicle." Another section of the scenario reads, "These inked imprints were made by placing the vehicle in neutral, and then pushing it across inking material and a continuous piece of white containerboard." 4) A difference in the materials used to coat the tire and create the test imprint verses the material that was on the tire when the evidence imprint was made. Had more than one set of test imprints been created, the sets of test imprints could have been compared to one another to evaluate the reproducibility of these marks to better evaluate if they are actually being produced by wear on the tire itself or from some other factor(s) during the creation of the test imprints.

TABLE 3

WebCode-Test	Additional Comments
H87ZK7-5351	<p>Q1: The inner rib diagonal sipes depict more wear in the track than is present on the tire. Some diagonal sipes on the the bottom edge of the center rib depict more wear in the track than is present on the tire. The "points" on the center rib elements depict more wear in the track than is present on the tire. The wear pattern on the sipes of the shoulder rib of Q1 is on the opposite side of the same sipes on the shoulder ribs of the known tire. These differences in wear factors signify an exclusion. Q4: The inner rib diagonal sipes depict more worn in Q4 than is present on the known tire. Some diagonal sipes on the the bottom edge of the center rib depict more wear in the track than is present on the tire. The "points" on the center rib elements depict more wear in the track than is present on the tire. The wear pattern on the sipes of the shoulder rib of Q4 is on the opposite side of the same sipes on the shoulder ribs of the known tire. These differences in wear factors signify an exclusion.</p>
H9EGAN-5351	<p>The photographs of the known imprints do not properly represent the areas of the known tire. This can be observed on the last top element on K2_2 (segment B-C) and the first top element on K3_2 (segment C-D). Also, the labeled segments are not accurately represented in the photographs of the known imprints. This can be observed in K1_2 (segment A-B), K5_2 (segment E-F), K6_2 (segment F-G) and K7_2 (segment G-A). Several of the known imprints appear too dark and another set of known imprints would've been requested. The examination of the photographs of the recovered tire was limited due to only utilizing the above lighting photography technique. If conducting an examination without the actual tire, quality reference imprints and photographs are necessary in order to arrive at the most appropriate conclusion.</p>
LPUG2W-5351	<p>The photographs of the tire are very difficult to see, especially where they curve on both sides. I would recommend taking multiple photos of each region with different angles of flash and give these photos out digitally rather than printed to scale.</p>
M6GG72-5355	<p>The identification of an impression is established through the agreement of corresponding class and individual characteristics of sufficient uniqueness to identify. Exclusion is established when there are sufficient features in disagreement between the questioned impression and the tread features of the known tire to conclude that the tire could not be the source of the impression.</p>
MVGUD4-5351	<p>I would also include an Association Scale in my report (slightly different wording than this test's scale).</p>
NDQARG-5351	<p>This test does not represent a fair process of a tire track examination. A comparison would not be completed with a photograph of the known in the laboratory. Many more photographs should have been included with better lighting. Apparent RACs observed in the tire imprints could not be confirmed in the tire. Due to the tread design of the tires the q impressions had to be compared both ways so the comparison time was too involved.</p>
Q67TCC-5355	<p>Q3 and Q4 were short tire segments and class characteristics and pitch sequences were found in other segments than those listed on the answer sheet. It appeared that Q1 and Q3 overlapped and that Q2 and Q4 overlapped. It appeared that the questioned surface may have some corrugation that could have led to some of the features/RACs not reproducing from the known and preventing stronger conclusions for Q1, Q3, and Q4.</p>
RKHMLZ-5351	<p>The 'mottled' appearance of the exemplars made it very challenging to perform the tire comparison. It looked like the tire roll was made on an uneven surface or the tire was not wiped to remove any loosely adhering debris on the tire surface.</p>
TGDH4D-5351	<p>Association Scale for Footwear and Tire Impressions: The following descriptions are meant to provide context to the levels of opinions reached in footwear and tire impression comparisons. Each level may not include every variable in every case. Lacks sufficient detail – No comparison was conducted: the examiner determined there were no discernible questioned footwear/tire impressions or features present. Or – A comparison was conducted: the examiner determined that there was insufficient detail in the questioned impression for a meaningful conclusion. This opinion only applies to the known footwear or tire that was examined and does not necessarily preclude future examinations with other known footwear or tires. Exclusion – This is the highest degree of non-association expressed in footwear and tire impression examinations. Sufficient</p>

TABLE 3

WebCode-Test	Additional Comments
	<p>differences were noted in the comparison of class and/or randomly acquired characteristics between the questioned impression and the known footwear or tire. Indications of non-association – The questioned impression exhibits dissimilarities when compared to the known footwear or tire; however, the details or features were not sufficiently clear to permit an exclusion. Limited association of class characteristics – Some similar class characteristics were present; however, there were significant limiting factors in the questioned impression that did not permit a stronger association between the questioned impression and the known footwear or tire. These factors may include but were not limited to: insufficient detail, lack of scale, improper position of scale, improper photographic techniques, distortion or significant lengths of time between the date of the occurrence and when the footwear or tires were recovered that could account for a different degree of general wear. No confirmable differences were observed that could exclude the footwear or tire. Association of class characteristics – The class characteristics of both design and physical size must correspond between the questioned impression and the known footwear or tire. Correspondence of general wear may also be present. High degree of association – The questioned impression and known footwear or tire must correspond in the class characteristics of design, physical size, and general wear. For this degree of association there must also exist: (1) wear that, by virtue of its specific location, degree and orientation make it unusual and/or (2) one or more randomly acquired characteristics. Identification – This is the highest degree of association expressed by a footwear and tire impression examiner. The questioned impression and the known footwear or tire share agreement of class and randomly acquired characteristics of sufficient quality and quantity.</p>
X7JQQV-5355	<p>Having more than one set of known standards would have allowed for a better examination in the instances where the elements were not fully recorded. The examiner should not have to speculate about the information provided, for instance if a void area truly exists or was the information not recorded in that area. Having more than one set of known standards also allows the examiner to determine if there is possible over inking causing an element or tread block to appear differently than it normally would.</p>
ZHK62C-5351	<p>Exclusions were not made for Q2, Q3 and Q4 as only one test impression was provided and the reproduceability (or not) of characteristics was unable to be determined. I was not provided the contextual information before undertaking this comparison.</p>

-End of Report-
(Appendix may follow)

Test No. 19-5351: Tire Track Imprint Evidence

DATA MUST BE SUBMITTED BY **Sept. 9, 2019, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: XER7VH

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 the theft of personal belongings from a parked mover's truck. Tire track imprints were recovered on several items found around the truck, and it is believed that they may have been left by the suspect vehicle. A day after this incident, a vehicle matching witness descriptions was located approximately nine miles from the site. Investigators were able to recover one tire directly from the vehicle. You are asked to compare the imprints recovered at the scene with photographs of the tire and known imprints made with the tire. The recovered tire contains the following information on the sidewall: Toyo Proxes A27 P185/60 R16 86H M&S DOT N3EL V570716.

Known, inked imprints (K1_2 through K7_2) have been labeled with an arrow to indicate directionality of movement. These inked imprints were made by placing the vehicle in neutral, and then pushing it across inking material and a continuous piece of white containerboard.

Items Submitted (Sample Pack TIEP - Photographs):

Items K1-K7: Photographs of the recovered tire (segments), lighted from above.

Items K1_2-K7_2: Photographs of known imprints made with the recovered tire (segments).

Items Q1-Q2: Photographs of questioned imprints found on a white advertisement poster.

Items Q3-Q4: Photographs of questioned imprints found on a cardboard box.

Instructions:

Select from the following list of conclusions and insert the appropriate letter in the spaces provided. If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in your written conclusions. These conclusions are adapted from the SWGTREAD Range of Conclusions standard.

- A. Identification** - Questioned and known items share agreement of class and randomly acquired characteristics of sufficient quality and quantity. Highest degree of association.
- B. High degree of association** - Correspondence of class characteristics, in addition to unusual wear and/or one or more randomly acquired characteristics between the questioned and known item.
- C. Association of class characteristics** - Correspondence of design and physical size and possibly general wear between the questioned and known item.
- D. Limited association of class characteristics** - Some similar class characteristics between the questioned and known item with significant limiting factors.
- E. Inconclusive*** - Questioned item lacks sufficient detail for a meaningful conclusion in comparison to the known item. (adapted from SWGTREAD "Lacks sufficient detail" conclusion).
- F. Indications of non-association** - Questioned item exhibits dissimilarities in comparison to the known item.
- G. Exclusion** - Questioned and known items exhibit sufficient differences of class and/or randomly acquired characteristics. Highest degree of non-association.

*Should the response "E" be used, please document the reason in the Additional Comments section of this data sheet.

1.) Indicate the results of your comparisons of the recovered tire with the questioned imprints by writing the letter of your conclusion next to each questioned imprint in the table.

If an identification or positive association is made (A-D), indicate to which segment(s) of the tire the association has been made (indicate the letters at the beginning and end of the corresponding segments).

Example:

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;"><u>Imprint</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>Segment(s)</u></td> </tr> <tr> <td style="padding: 5px;">Q1: <input style="width: 50px; height: 20px;" type="text" value="B"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text" value="C-E"/></td> </tr> </table>	<u>Imprint</u>	<u>Segment(s)</u>	Q1: <input style="width: 50px; height: 20px;" type="text" value="B"/>	<input style="width: 50px; height: 20px;" type="text" value="C-E"/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;"><u>Imprint</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>Segment(s)</u></td> </tr> <tr> <td style="padding: 5px;">Q2: <input style="width: 50px; height: 20px;" type="text" value="A"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text" value="G-H"/></td> </tr> </table>	<u>Imprint</u>	<u>Segment(s)</u>	Q2: <input style="width: 50px; height: 20px;" type="text" value="A"/>	<input style="width: 50px; height: 20px;" type="text" value="G-H"/>
<u>Imprint</u>	<u>Segment(s)</u>								
Q1: <input style="width: 50px; height: 20px;" type="text" value="B"/>	<input style="width: 50px; height: 20px;" type="text" value="C-E"/>								
<u>Imprint</u>	<u>Segment(s)</u>								
Q2: <input style="width: 50px; height: 20px;" type="text" value="A"/>	<input style="width: 50px; height: 20px;" type="text" value="G-H"/>								

Advertising Poster	Cardboard Box												
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;"><u>Imprint</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>Segment(s)</u></td> </tr> <tr> <td style="padding: 5px;">Q1: <input style="width: 50px; height: 20px;" type="text"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text"/></td> </tr> <tr> <td style="padding: 5px;">Q2: <input style="width: 50px; height: 20px;" type="text"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text"/></td> </tr> </table>	<u>Imprint</u>	<u>Segment(s)</u>	Q1: <input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	Q2: <input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;"><u>Imprint</u></td> <td style="text-align: center; border-bottom: 1px solid black;"><u>Segment(s)</u></td> </tr> <tr> <td style="padding: 5px;">Q3: <input style="width: 50px; height: 20px;" type="text"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text"/></td> </tr> <tr> <td style="padding: 5px;">Q4: <input style="width: 50px; height: 20px;" type="text"/></td> <td style="padding: 5px;"><input style="width: 50px; height: 20px;" type="text"/></td> </tr> </table>	<u>Imprint</u>	<u>Segment(s)</u>	Q3: <input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	Q4: <input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>
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Q4: <input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>												

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

Please note: Any additional formatting applied in the free form spaces 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.

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)