



Tire Track Imprint Evidence

Test No. 25-5351/5 Summary Report

Each participant received a sample pack containing either printed photographs (5351) or digital images (5355) of questioned tire track imprints, photographs of a suspect tire, and test imprints made with that tire. All participants also had access to an additional set of inked exemplars as a downloadable digital supplemental image set. Participants were asked to compare these items and report their findings. Data were returned from 59 participants: 33 for 25-5351 and 26 for 25-5355 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 photographs in either a physically printed format or as a digitally downloadable file. Images consisted of a suspect tire, inked exemplars of a suspect tire, and questioned tire track imprints. Participants also had access to a second set of inked exemplars as a digitally downloadable supplemental file on the CTS Portal. Participants were asked to compare the imprints from the crime scene with the suspect tire and report their findings.

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: Inked exemplar imprints (K1_Ink-K8_Ink; K1_Sup-K8_Sup) were created by pushing a vehicle equipped with the suspect tire across an inked surface and then white containerboard sheeting. The suspect tire images (K1-K8) were created by removing the tire from the vehicle and photographing in segments after known exemplars and questioned imprints were collected. The suspect tire was photographed in segments (K1-K8), with the start and end of each segment indicated by a red line. The inked exemplars were segmented to match the photographs.

QUESTIONED IMPRINTS: Questioned imprints were created by pushing a vehicle equipped with 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: Predistribution results were consistent with each other and the manufacturer's preparation information.

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, and initialed. A zipped file containing the digitally downloadable media was uploaded to the CTS Portal.

Imprint	Substrate	Tire Brand	Tire Spec (DOT Info)	Segment(s) associated during production
Q1	'Slow Down Kids At Play' Sign	Pirelli, Cinturato P7 All Season, ECOIMPACT	225/45 R18 91V M+S, (DOT 93 K1 M489 3920)	K3
Q2	Plywood	Pirelli, Cinturato P7 All Season, ECOIMPACT	225/45 R18 91V M+S, (DOT 93 K1 M489 3920)	K8
Q3	Plywood	Pirelli, Cinturato P7 All Season, ECOIMPACT	225/45 R18 91V M+S, (DOT 93 K1 M489 4220)	N/A
Q4	Poster Project	Bridgestone, ECOPIA EP 422 Plus	215/50 R17 95V M+S, (DOT V66A ECO 3520)	N/A
Q5	Poster Project	Pirelli, Cinturato P7 All Season, ECOIMPACT	225/45 R18 91V M+S, (DOT 93 K1 M489 4220)	N/A

Summary Comments

This test was designed to allow participants to assess their proficiency with tire track imprint examination and comparison. Participants were supplied with either digitally produced photographs or downloadable digital images of five questioned imprints, the known suspect tire, and a set of inked known tire exemplars. Two of the questioned tire track imprints (Q1 and Q2) were made by the known tire. The remaining questioned tire track imprints (Q3-Q5) were made by different tires for which photographs were not provided. Refer to the Manufacturer's Information for preparation details.

Participants were asked to report their examination results using a seven-point conclusion scale adapted from the SWGTREAD Range of Conclusion standard. For those imprints that were associated with the known tire, all responses of association (A-D) were tallied together, and all responses of non-association (F-G) were tallied together to determine consensus. If an association was made, participants were asked to report the segment(s) of the suspect tire to which the association was made.

Of the 59 responding participants, 55 participants (95%) reported all associations/non-associations and tire segment(s) consistent with the manufacturer's preparation information and consensus results. Four participants were outliers for one or more imprint associations, which included inconsistent associations or inconsistent tire segments. Overall, most participants were confident to report an Identification (A) for all associated questioned items and an Exclusion (G) for the non-associated questioned items.

Examination Results

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

TABLE 1a ('Slow Down Kids At Play' Sign)

WebCode- Test	Questioned Imprints	
	Conclusion	Segment(s)
29DQJR- 5351	A	K3
2WYTEN- 5351	A	K3
3BBN8P- 5351	A	K3
3TWCGK- 5351	A	K3
3VHWLN- 5351	A	K3
4272UJ- 5351	A	K3
46M42N- 5351	A	K2-K3
6JG8JK- 5351	A	K3
79F6V3- 5355	A	K3
8QBZ4J- 5351	A	K3
8THCLK- 5351	A	K3
98XWJJ- 5355	A	K3
9F9Y6K- 5351	A	K3
9Y4RPH- 5351	A	K3
AL9XTE- 5351	A	K3
B64QFX- 5355	B	K1-K2
BJ2YWC- 5351	A	K3

TABLE 1a ('Slow Down Kids At Play' Sign)

WebCode- Test	Questioned Imprints	
	Conclusion	Segment(s)
BVD68E-5355	A	K3
CATP6D-5351	A	K3-K2
CFVVKF-5351	A	K3-K6
CZX6JU-5355	A	K2-K4
D786ZA-5355	A	K2-K3
DXFMJF-5355	A	K2-K3
EQQN7C-5355	A	K3
F8UHCC-5351	A	K3
FLALY8-5355	A	K2-K3
GVXWL8-5351	A	K3
GVXYBC-5351	A	K3
J9TZ33-5351	A	K3
L8CHYN-5355	A	K3
LGHPC3-5355	A	K2-K3
M86VWZ-5351	A	K3
MBQE36-5351	A	K2-K3
MQK6X2-5351	A	K3
MT7N36-5355	A	K3

TABLE 1a ('Slow Down Kids At Play' Sign)

WebCode- Test	Questioned Imprints	
	Conclusion	Segment(s)
MTB724-5351	A	K2-K3
NEKVR4-5351	A	K3
NHK6ZK-5355	A	K3
PJARUY-5351	A	K2-K3
QBV9AZ-5355	A	K3
QKKUHI-5355	A	K3
QNNMCH-5355	A	K3
QUCA63-5355	A	K2-K3
TY68ZC-5355	A	K3
U2HF9V-5351	A	K3
U3DYAW-5351	A	K3
UJXPAV-5351	A	K3
UPNYLE-5355	A	K3
UXH6DV-5355	A	K3
V6WDDW-5355	A	K2-K3
V7RVFX-5355	A	K3
VVL96C-5355	A	K3
WLFNFP-5351	B	K3

TABLE 1a ('Slow Down Kids At Play' Sign)

WebCode- Test	Questioned Imprints	
	Conclusion	Segment(s)
XBDP6U-5351	A	K2-K3
Y2JYXT-5351	A	K3
YH4MA9-5355	A	K3
YPA46N-5355	A	K3
ZVUJ9L-5351	A	K3
ZW3WQM-5355	A	K2-K3

Response Summary		Participants: 59	
Q1 Conclusion		Segment(s), by frequency	
Identification (A)	57 (96.6%)	K3	43 (72.9%)
High Degree of Ass'n. (B)	2 (3.4%)	K2-K3	12 (20.3%)
Association (C)	0 (0.0%)		
Limited Ass'n. (D)	0 (0.0%)		
Inconclusive (E)	0 (0.0%)		
Non-Ass'n. (F)	0 (0.0%)		
Exclusion (G)	0 (0.0%)		

Please Note: Only segment(s) reported (format-specific) at a frequency of 5% or greater are tallied in the summary totals.

Examination Results

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

TABLE 1b (Plywood)

WebCode- Test	Questioned Imprints				
	Conclusion	<u>Q2</u> Segment(s)	Conclusion	<u>Q3</u> Segment(s)	
29DQJR-5351	A	K8	G		
2WYTEN-5351	A	K8	G		
3BBN8P-5351	A	K8-K1	G		
3TWC GK-5351	A	K8-K1	C		K7
3VHWLN-5351	A	K8	G		
4272UJ-5351	A	K8-K1	G		
46M42N-5351	A	K7-K1	G		
6JG8JK-5351	A	K8	G		K1-K8
79F6V3-5355	A	K7-K8	G		
8QBZ4J-5351	A	K8	G		
8THCLK-5351	A	K8	A		K7
98XWJJ-5355	A	K8	G		
9F9Y6K-5351	A	K8	G		
9Y4RPH-5351	A	K8	G		
AL9XTE-5351	A	K8	G		
B64QFX-5355	A	K4	C		K4-K5
BJ2YWC-5351	A	K8	G		

TABLE 1b (Plywood)

WebCode- Test	Questioned Imprints				
	Conclusion	<u>Q2</u>	Segment(s)	Conclusion	Segment(s)
BVD68E-5355	A		K8	G	
CATP6D-5351	A		K8-K1	G	
CFVVKF-5351	A		K8	G	
CZX6JU-5355	A		K7-K1	G	
D786ZA-5355	A		K8-K1	G	
DXFMJF-5355	A		K8-K1	G	
EQQN7C-5355	A		K8-K1	F	K7-K8
F8UHCC-5351	A		K8	G	
FLALY8-5355	A		K7-K1	G	
GVXWL8-5351	A		K8-K1	G	
GVXYBC-5351	A		K8-K1	G	
J9TZ33-5351	A		K8	G	
L8CHYN-5355	A		K8	G	
LGHPC3-5355	A		K7-K1	G	
M86VWZ-5351	A		K8	F	
MBQE36-5351	A		K7-K1	F	
MQK6X2-5351	A		K8	G	
MT7N36-5355	A		K8	G	

TABLE 1b (Plywood)

Questioned Imprints					
WebCode- Test	<u>Q2</u>		<u>Q3</u>		
	Conclusion	Segment(s)	Conclusion	Segment(s)	
MTB724-5351	A	K8	G		
NEKVR4-5351	A	K8	G		
NHK6ZK-5355	A	K8-K1	F		
PJARUY-5351	A	K7-K1	G		
QBV9AZ-5355	A	K8	G	K1-K8	
QKKUHH-5355	A	K8	F		
QNNMCH-5355	A	K7-K8	G		
QUCA63-5355	A	K178	C	K6-K7	
TY68ZC-5355	A	K8	F		
U2HF9V-5351	A	K8	G		
U3DYAW-5351	A	K8	G		
UJXPAV-5351	A	K8	G	K1-K8	
UPNYLE-5355	A	K8	F	K1-K8	
UXH6DV-5355	A	K8	G		
V6WDDW-5355	A	K8-K1	G		
V7RVFX-5355	A	K8	G		
WL96C-5355	A	K8	G		
WLFNFP-5351	A	K7-K1	G		

TABLE 1b (Plywood)

WebCode- Test	Questioned Imprints			
	<u>Q2</u>		<u>Q3</u>	
	Conclusion	Segment(s)	Conclusion	Segment(s)
XBDP6U-5351	A	K7-K1	G	
Y2JYXT-5351	A	K8	G	
YH4MA9-5355	A	K8	G	
YPA46N-5355	A	K8	G	
ZVUJ9L-5351	A	K8	G	
ZW3WQM-5355	A	K8-K1	G	

Response Summary				Participants: 59	
Q2 Conclusion		Segment(s), by frequency		Q3 Conclusion	
					Segment(s), by frequency
Identification (A)	59 (100.0%)	K8	35 (59.3%)	Identification (A)	1 (1.7%) N/A for non-assoc.
High Degree of Ass'n. (B)	0 (0.0%)	K8-K1	12 (20.3%)	High Degree of Ass'n. (B)	0 (0.0%)
Association (C)	0 (0.0%)			Association (C)	3 (5.1%)
Limited Ass'n. (D)	0 (0.0%)			Limited Ass'n. (D)	0 (0.0%)
Inconclusive (E)	0 (0.0%)			Inconclusive (E)	0 (0.0%)
Non-Ass'n. (F)	0 (0.0%)			Non-Ass'n. (F)	7 (11.9%)
Exclusion (G)	0 (0.0%)			Exclusion (G)	48 (81.4%)

Please Note: Only segment(s) reported (format-specific) at a frequency of 5% or greater are tallied in the summary totals.

Examination Results

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

TABLE 1c (Poster Project)

Questioned Imprints					
WebCode- Test	<u>Q4</u>		<u>Q5</u>		
	Conclusion	Segment(s)	Conclusion	Segment(s)	
29DQJR-5351	G		G		
2WYTEN-5351	G		G		
3BBN8P-5351	G		G		
3TWC GK-5351	G	K1-K8	B	K5-K6	
3VHWLN-5351	G		G		
4272UJ-5351	G		G		
46M42N-5351	G		G		
6JG8JK-5351	G	K1-K8	G	K1-K8	
79F6V3-5355	G		G		
8QBZ4J-5351	G		G		
8THCLK-5351	G		A	K6	
98XWJJ-5355	G		G		
9F9Y6K-5351	G		G		
9Y4RPH-5351	G		G		
AL9XTE-5351	G		G		
B64QFX-5355	D	K6	D	K5-K6	
BJ2YWC-5351	G		G		

TABLE 1c (Poster Project)

Questioned Imprints					
WebCode- Test	<u>Q4</u>		<u>Q5</u>		
	Conclusion	Segment(s)	Conclusion	Segment(s)	
BVD68E-5355	G		G		
CATP6D-5351	G		G		
CFVVKF-5351	G		G		
CZX6JU-5355	G		G		
D786ZA-5355	G		G		
DXFMJF-5355	G		G		
EQQN7C-5355	G	K1-K8	F	K5-K6	
F8UHCC-5351	G		G		
FLALY8-5355	G		G		
GVXWL8-5351	G		G		
GVXYBC-5351	G		G		
J9TZ33-5351	G		G		
L8CHYN-5355	G		G		
LGHPC3-5355	G		G		
M86VWZ-5351	G		F		
MBQE36-5351	G		F		
MQK6X2-5351	G		G		
MT7N36-5355	G		G		

TABLE 1c (Poster Project)

Questioned Imprints					
WebCode- Test	<u>Q4</u>		<u>Q5</u>		
	Conclusion	Segment(s)	Conclusion	Segment(s)	
MTB724-5351	G		G		
NEKVR4-5351	G		G		
NHK6ZK-5355	G		F		
PJARUY-5351	G		G		
QBV9AZ-5355	G	K1-K8	G	K1-K8	
QKKUHI-5355	G		F		
QNNMCH-5355	G		G		
QUCA63-5355	G	K1-K8	C	K5-K6	
TY68ZC-5355	G		F		
U2HF9V-5351	G		G		
U3DYAW-5351	G		G		
UJXPAV-5351	G	K1-K8	G	K1-K8	
UPNYLE-5355	G	K1-K8	F	K1-K8	
UXH6DV-5355	G		G		
V6WDDW-5355	G		G		
V7RVFX-5355	G		G		
WL96C-5355	G		G		
WLFNFP-5351	G		G		

TABLE 1c (Poster Project)

Questioned Imprints					
WebCode- Test	Q4		Q5		
	Conclusion	Segment(s)	Conclusion	Segment(s)	
XBDP6U-5351	G		G		
Y2JYXT-5351	G		G		
YH4MA9-5355	G		G		
YPA46N-5355	G		G		
ZVUJ9L-5351	G		G		
ZW3WQM-5355	G		G		
Response Summary					Participants: 59
Q4 Conclusion		Segment(s), by frequency	Q5 Conclusion		Segment(s), by frequency
Identification (A)	0 (0.0%)	N/A for non-assoc.	Identification (A)	1 (1.7%)	N/A for non-assoc.
High Degree of Ass'n. (B)	0 (0.0%)		High Degree of Ass'n. (B)	1 (1.7%)	
Association (C)	0 (0.0%)		Association (C)	1 (1.7%)	
Limited Ass'n. (D)	1 (1.7%)		Limited Ass'n. (D)	1 (1.0%)	
Inconclusive (E)	0 (0.0%)		Inconclusive (E)	0 (0.0%)	
Non-Ass'n. (F)	0 (0.0%)		Non-Ass'n. (F)	7 (7.0%)	
Exclusion (G)	58 (98.3%)		Exclusion (G)	48 (48.0%)	

Please Note: Only segment(s) reported (format-specific) at a frequency of 5% or greater are tallied in the summary totals.

Examination Results

TABLE 1d - Complete Results

Response Summary						Participants: 59	
Q1			Q2			Q3	
	Conclusion	Segment(s), by frequency		Conclusion	Segment(s), by frequency	Conclusion	Segment(s), by frequency
A	57 (96.6%)	K3 43 (72.9%)	A	59 (100.0%)	K8 35 (72.9%)	A	1 (1.7%) N/A for non-assoc.
B	2 (3.4%)	K2-K3 12 (20.3%)	B	0 (0.0%)	K8-K1 12 (20.3%)	B	0 (0.0%)
C	0 (0.0%)		C	0 (0.0%)		C	3 (5.1%)
D	0 (0.0%)		D	0 (0.0%)		D	0 (0.0%)
E	0 (0.0%)		E	0 (0.0%)		E	0 (0.0%)
F	0 (0.0%)		F	0 (0.0%)		F	7 (11.9%)
G	0 (0.0%)		G	0 (0.0%)		G	48 (81.4%)
Q4			Q5				
	Conclusion	Segment(s), by frequency		Conclusion	Segment(s), by frequency		
A	0 (0.0%)	N/A for non-assoc.	A	1 (1.7%)	N/A for non-assoc.		
B	0 (0.0%)		B	1 (1.7%)			
C	0 (0.0%)		C	1 (1.7%)			
D	1 (1.7%)		D	1 (1.7%)			
E	0 (0.0%)		E	0 (0.0%)			
F	0 (0.0%)		F	7 (11.9%)			
G	58 (98.3%)		G	48 (81.4%)			

Identification (A), High Degree of Association (B), Association (C), Limited Association (D), Inconclusive (E), Non-Association (F), Exclusion (G)

Please Note: Only segment(s) reported at a frequency of 5% or greater are tallied in the summary totals.

Conclusions

TABLE 2

WebCode-Test	Conclusions
29DQJR-5351	The known tire from which the images (Items K1 thru K8) and the inked imprints were obtained is identified as having made the impressions depicted in Items Q1 and Q2 based on an agreement of class characteristics (tread design and size), wear, and randomly acquired characteristics of sufficient quality and quantity. This tire was the source of the questioned impressions. Another tire being the source of these impressions is considered a practical impossibility. The known tire from which the images (Items K1 thru K8) and the inked imprints were obtained was excluded from making the questioned impressions depicted in Q3, Q4, and Q5 based on a lack of correspondence in tread design spacing, lug shape, and wear. The known tire, as submitted, is not the source of these impressions.
2WYTEN-5351	Five questioned partial tire impressions were submitted. One questioned partial tire impression (Q1) is present on a white, green, and red poster that reads "Slow Down KIDS." The questioned partial tire impression is similar in size, tread design, and shares at least three randomly acquired characteristics with the suspect vehicle's tire. It is my opinion that the questioned partial tire impression was made by the suspect vehicle's tire. Two questioned partial tire impressions (Q2 and Q3) are present on a light brown to beige background. Q2 is similar in size, tread design, and shares at least one randomly acquired characteristic with the suspect vehicle's tire. It is my opinion that this questioned partial tire impression was made by the suspect vehicle's tire. Q3 is dissimilar in tread design to the suspect vehicle's tire. It is my opinion that this questioned partial tire impression was not made by the suspect vehicle's tire. Two questioned partial tire impressions (Q4 and Q5) are present on a multi-colored background. Both questioned partial tire impressions are dissimilar in tread design to the suspect vehicle's tire. It is my opinion that these questioned partial tire impressions were not made by the suspect vehicle's tire. Additionally, known tire test impressions and corresponding images of the known tire tread from the suspect vehicle's tire were submitted and used for comparison purposes.
3BBN8P-5351	The questioned imprint Q1, found on the "Slow Down Kids At Play" sign may have originated from the recovered tire. The questioned imprint Q2, found on a piece of plywood, may have originated from the recovered tire. The questioned imprint Q3, found on a piece of plywood, did not originate from the recovered tire. The questioned imprints Q4 and Q5, found on the school poster project, did not originate from the recovered tire.
3TWCGK-5351	Results and Interpretations: (The results apply to the sample(s) as received and/or collected.) The K-3 known tire segment was identified as being the source of the Q-1 questioned impression. The K-3 known tire segment and the Q-1 questioned impression share agreement of class and randomly acquired characteristics of sufficient quality and quantity. The particular known tire segment was the source of, and made, the questioned impression. Another tire being the source of the impression is considered a practical impossibility. The K 8 & K1 known tire segments were identified as being the source of the Q-2 questioned impression. The K-8 and part of the K-1 known tire segments and the Q-2 questioned impression share agreement of class and randomly acquired characteristics of sufficient quality and quantity. The particular known tire segments were the source of, and made, the questioned impression. Another tire being the source of the impression is considered a practical impossibility. There was an association of class characteristics between the K-7 submitted known tire segment and the Q-3 questioned impression. Both design and physical size corresponded between the questioned impression and the known tire segment. The known tire is a possible source of the questioned impression and therefore could have produced the impression. Other tires with the same class characteristics observed in the impression are included in the population of possible sources. The K 1-8 submitted known tire segments were excluded from being the source of the Q-4 questioned impression. Sufficient differences were noted in the comparison of class characteristics between the questioned impression and the known tire segments. The known tire segments were not the source of, and did not make, the Q-4 questioned impression. There was a high degree of association between the K 5-6 known tire segments, and the Q-5 questioned impression. The questioned impression and part of the K-5 known tire segment and a majority of the K-6 known tire segment corresponded in class characteristics of design, physical size,

TABLE 2

WebCode- Test	Conclusions
	and general wear. The characteristics observed exhibit strong associations between the questioned impression and the known tire segment; however, the quality of the randomly acquired characteristic was insufficient for an identification. There appeared to be movement in the impression. Other tires with the same class characteristics observed in the questioned impression are included in the population of possible sources only if they display the same wear and randomly acquired characteristic observed in the questioned impression. The K 1-2, K 4-8 submitted known tire segments were excluded from being the source of the Q-1 questioned impression. Sufficient differences were noted in the comparison of class characteristics between the questioned impression and the known tire segments. The known tire segments were not the source of, and did not make, the Q-1 questioned impression. The K 2-7 submitted known tire segments were excluded from being the source of the Q-2 questioned impression. Sufficient differences were noted in the comparison of class characteristics between the questioned impression and the known tire segments. The known tire segments were not the source of, and did not make, the Q-2 questioned impression. The K 1-6 and K-8 submitted known tire segments were excluded from being the source of the Q-3 questioned impression. Sufficient differences were noted in the comparison of class characteristics between the questioned impression and the known tire segments. The known tire segments were not the source of, and did not make, the Q-3 questioned impression. The K 1-4 and K 7-8 submitted known tire segments were excluded from being the source of the Q-5 questioned impression. Although the K-8 submitted known tire segment shared some class characteristics with the Q-5 questioned impression, the elements of the known tire segment did not line up with the elements of the questioned impression. Sufficient differences were noted in the comparison of class characteristics between the questioned impression and the known tire segments. The known tire segments were not the source of, and did not make, the Q-5 questioned impression.
3VHWLN- 5351	The Item 1.2 (Q1) questioned tire impression was made by the Item 1.1 Segment K3 of the submitted known tire. This identification is based on sufficient agreement of the combination of randomly acquired characteristics and all discernible class characteristics. The Item 1.3 (Q2) questioned tire impression was made by the Item 1.1 Segment K8 of the submitted known tire. This identification is based on sufficient agreement of the combination of randomly acquired characteristics and all discernible class characteristics. The Item 1.5 (Q4) questioned tire impression was not made by the Item 1.1 submitted known tire. This elimination is based on differences in class characteristics of tread design and dimension. The Item 1.5 (Q4) questioned tire impression was not made by the same unknown tire(s) that made the Items 1.4 (Q3) and 1.6 (Q5) questioned tire impressions. These eliminations are based on differences in class characteristics of tread design and dimension. The Item 1.4 (Q3) questioned tire impression was not made by the Item 1.1 submitted known tire. This elimination is based on the difference in class characteristic of the tread design's noise treatment pattern or the differences in randomly acquired characteristics. The Item 1.6 (Q5) questioned tire impression was not made by the Item 1.1 submitted known tire. This elimination is based on the differences in class characteristics of the tread design's noise treatment pattern and wear or the differences in randomly acquired characteristics. The Item 1.4 (Q3) questioned tire impression was not made by the same segment of unknown tire(s) that made the Item 1.6 (Q5) questioned tire impression. This elimination is based on the difference in class characteristic of the tread design's noise treatment pattern. NOTE: Cannot eliminate as having been made from the same unknown tire since Items 1.4 and 1.6 are only a portion/segment of the tire impression for comparison.
4272UJ- 5351	Q1 and Q2 exhibit same class characteristics and at least three corresponding randomly acquired characteristics. The known tire made these impressions (Identification). Q3, Q4, and Q5 exhibit some of the same class characteristics as the known tire but have dissimilar wear patterns and no corresponding randomly acquired characteristics. Q5 exhibits a different tread design. The known tire did not make any of these impressions (Exclusion).
46M42N- 5351	Impressions Q1 and Q2 and the known tire share agreement of tire tread design, dimension (pitch sequence), wear, and randomly acquired characteristics of sufficient quality. Therefore the known tire made impressions Q1 - Q2. Impressions Q3 and Q5 have a similar tire tread design and dimension (pitch sequence) to the known tire; however, there are dissimilarities in the wear and randomly acquired characteristics seen in the questioned impressions. Therefore, the known tire did not make the

TABLE 2

WebCode- Test	Conclusions
	impressions Q3 and Q5. Impression Q4 has a different tire tread design to the known tire; therefore, the known tire did not make impression Q4. Tire impression analysis is based on the comparison of class and randomly acquired characteristics. Corresponding class and randomly acquired characteristics support the conclusion that the tire was the source of, and made, the questioned impressions. Currently, the possibility that other tires having the same class and randomly acquired characteristics cannot be statistically calculated.
6JG8JK- 5351	The Items Q1 through Q5 questioned tire impressions were analyzed, compared, and evaluated with the Item K, sections K1 through K8, known tire. The Item Q1 questioned tire impression corresponds in tread design, physical size, general wear, and six (6) randomly acquired characteristics with the Item K, section K3. The Item Q2 questioned tire impression corresponds in tread design, physical size, general wear, and six (6) randomly acquired characteristics with the Item K, section K8. The Item Q3 questioned tire impression corresponds in tread design, but does not correspond in general and specific wear with the Item K, sections K1-K8. The Item Q4 questioned tire impression does not correspond in tread design with the Item K, sections K1-K8. The Item Q5 questioned tire impression corresponds in tread design, but does not correspond in general and specific wear with the Item K, sections K1-K8. Based upon the above factors, it is the opinion of this examiner that: The Item K (section K3) known tire was the source of and made the Item Q1 questioned tire impression, resulting in an identification. Another tire being the source of the questioned impression is considered a practical impossibility. The Item K (section K8) known tire was the source of and made the Item Q2 questioned tire impression, resulting in an identification. Another tire being the source of the questioned impression is considered a practical impossibility. The Item K (sections K1-K8) known tire was excluded as the source of the Item Q3 questioned tire impression. The Item K (sections K1-K8) known tire was excluded as the source of the Item Q4 questioned tire impression. The Item K (sections K1-K8) known tire was excluded as the source of the Item Q5 questioned tire impression. All conclusions listed herein have been verified by a second qualified latent print examiner.
79F6V3- 5355	One of the tire impressions on the kid's play sign, labelled Q1 and that labelled Q2 have been made by a tire with the same pattern, configuration of pattern elements and degree of wear as the KNOWN tire. Of greater significance are the presence of marks in these scene impressions that correspond to apparent damage features on the surface of the tire. Indeed, the degree of correspondence is such that I consider that the likelihood of another tire being able to produce these impressions is vanishingly small. Overall, therefore I am satisfied that the KNOWN tire was responsible for these impressions. A - IDENTIFICATION. There is a second tire impression on the kid's play sign, Q1, that has also been made by a tire with the same pattern, configuration of pattern elements and degree of wear as the KNOWN tire (area K6). There are also indications of marks in this impression that appear to correspond with damage on this tire. While the correspondence is not as great as between the tire and other impression on Q1, I still consider that the degree of correspondence that has been noted is highly significant, and it is far more likely that the KNOWN tire was responsible for this impression, rather than another and the correspondence being due to chance. B - HIGH DEGREE OF ASSOCIATION. The tire impressions labelled Q3 and Q5, on the plywood and the poster project respectively, have been made by a tire with the same pattern as the KNOWN tire submitted, but the configuration of the pattern elements is such that this tire could NOT have made these impressions. G - EXCLUSION. The tire impression labelled Q4 on the poster project has a different pattern to the KNOWN tire, such that this tire could NOT have made this impression. G - EXCLUSION.
8QBZ4J- 5351	01-01: Photograph of questioned impressions from a white, green, and red sign with "Slow Down Kids" printed on it (Q1) This photograph depicts a total of two questioned partial tire impression in black material. One of the questioned impressions (Q1) is similar in size, tread design, and at least one randomly acquired characteristics with the suspect's recovered tire (segment K3). It is my opinion that this questioned impression was made by the suspect's tire (Category 1). No further analysis was done on the second questioned partial tire impression. 01-02: Photograph of questioned impressions from a piece of plywood (Q2-Q3) This photograph depicts a total of two questioned partial tire impression in black material. One of the questioned impressions (Q2) is similar in size, tread design, and at least one randomly acquired characteristics with the suspect's recovered tire (segment K8). It is my opinion that

TABLE 2

WebCode- Test	Conclusions
	this questioned impression was made by the suspect's tire (Category 1). One of the questioned impressions (Q3) exhibits similarities in tread design but is dissimilar in wear to the suspect's recovered tire (segments K1-K8). It is my opinion that this questioned impression was not made by the suspect's tire (Category 5). No further analysis done. 01-03: Photograph of questioned impressions from a yellow piece of school poster project (Q4-Q5) This photograph depicts a total of two questioned partial tire impression in black material. One of the questioned impressions (Q4) is dissimilar in tread design with the suspect's recovered tire (01-04; segment K1-K8). It is my opinion that this questioned impression was not made by the suspect's tire (Category 5). One of the questioned impressions (Q5) exhibits similarities in tread design but is dissimilar in wear to the suspect's recovered tire (01-04; segments K1-K8). It is my opinion that this questioned impression was not made by the suspect's tire (Category 5). No further analysis done. 01-04: Photographs of the recovered tire (segments) and test impressions (K1-K8 and K1_Darklnk-K8_Darklnk) This item was used for comparison purposes. Investigative Leads and Requirements for Further Analysis: If additional trace analysis is necessary, please contact this analyst. Disposition: The evidence will be retained until the laboratory is notified of the disposition.
8THCLK- 5351	Q1. The pattern of the tire tread printed on the sign and the pattern of the submitted evidence tire are consistent with segment K3 where the sipe has been erased by abnormal wear. Q2. The pattern of the tire tread printed on the plywood and the pattern of the submitted evidence tire is consistent with segment K3 where the sip has been removed due to abnormal wear and tear. Also, the pattern stamped on the tire surface is consistent with the damaged pattern. Q3. The pattern of the tire tread printed on the plywood and the pattern of the submitted evidence tire are consistent with segment K3 where the sipe has been erased by abnormal wear. Q4. The tire pattern printed on the poster is different from the tread pattern of the evidence tire presented. Q5. The pattern of the tire tread printed on the poster and the pattern of the submitted evidence tire are consistent with segment K3 where the sipe has been erased by abnormal wear.
98XWJJ- 5355	The questioned imprints were compared to the imprints of the recovered tire. Item Q1 and Q2 shared enough details and individual characteristics to make identifications. Item Q4 has a totally different pattern so that the tire could be excluded. Item Q3 and Q5 showed differences in details and the tire could also be excluded.
9F9Y6K- 5351	The photographs of the Known tire segments and the corresponding test impressions from each tire segment (K1-K8) were visually compared to the five tire impressions (Q1-Q5). The tire impression (Q1) and the Known tire are consistent in tread design, physical shape and size, wear, and numerous randomly acquired characteristics. Q1 was IDENTIFIED as having been made by segment K3 of the Known tire. The tire impression (Q2) and the Known tire are consistent in tread design, physical shape and size, wear, and numerous randomly acquired characteristics. Q2 was IDENTIFIED as having been made by segment K8 of the Known tire. The tire impression (Q3) and the Known tire are consistent in tread design and physical shape and size. Differences were observed in the location/degree of wear and in the location, position, and orientation of numerous randomly acquired characteristics. Therefore, the Known tire was EXCLUDED as a possible source of the impression (Q3). The tire impression (Q4) and the Known tire have different 5-rib tread designs. Therefore, the Known tire was EXCLUDED as a possible source of the impression (Q4). The tire impression (Q5) and the Known tire are consistent in tread design and physical shape and size. Differences were observed in the location/degree of wear and in the location, position, and orientation of numerous randomly acquired characteristics. Therefore, the Known tire was EXCLUDED as a possible source of the impression (Q5).
9Y4RPH- 5351	The tire which produced the known tire exemplars is identified as having made the impression designated as Q1. The tire which produced the known tire exemplars is identified as having made the impression designated as Q2. The tire that produced the known tire exemplar is excluded as having made the impression designated as Q3. The tire that produced the known tire exemplar is excluded as having made the impression designated as Q4. The tire that produced the known tire exemplar is excluded as having made the impression designated as Q5.

TABLE 2

WebCode-Test	Conclusions
AL9XTE-5351	Exhibits 4 and 5.1 (questioned tire impressions Q1 and Q2) were identified as having been made by the tire that made exhibit 2, the submitted known tire impressions. Exhibits 5.2 and 6.2 (questioned tire impressions Q3 and Q5) were not made by the tire that made exhibit 2, the submitted known tire impressions, based on differences in class characteristics. These two impressions could have been made by a second tire based on class characteristics. Exhibit 6.1 (questioned tire impression Q4) was not made by the tire that made exhibit 2 or exhibits 5.2 and 6.2 (questioned tire impressions Q3 and Q5), based on differences in class characteristics.
B64QFX-5355	The questioned imprint Q1 found on the "Slow Down Kids At Play" sign exhibits a high degree of association with segments K1 and K2 of the recovered tire. The tread design and wear patterns are consistent with the known exemplars. The imprint Q2 found on the plywood is identified as originating from segment K4 of the recovered tire. The class characteristics and randomly acquired features are in agreement. Imprint Q3 shows association of class characteristics with segments K4 and K5. While the tread design and dimensions match, no unique wear features were observed. Imprint Q4 found on the school poster project shows limited association with segment K6. The imprint is partially degraded, limiting the strength of the conclusion. Imprint Q5 shows limited association with segments K5 and K6. The imprint is affected by background interference and lacks sufficient detail for a stronger conclusion.
BJ2YWC-5351	Comparison examinations were conducted between the submitted unknown impressions and the submitted known impressions, exhibit 2. Exhibits 4 and 5.1 (questioned tire impressions Q1 and Q2) were identified as having been made by the tire that made exhibit 2, the submitted known tire impressions. Exhibit 5.2 and 6.2 (questioned tire impressions Q3 and Q5) were not made by the same tire that made exhibit 2, the submitted known tire impressions. Exhibit 5.2 and 6.2 (questioned tire impressions Q3 and Q5) could have been made by a second tire based on tread design. Exhibit 6.1 (questioned tire impression Q4) was not made by the tire that made exhibit 2, the submitted known tire impressions, or by the tire that made exhibits 5.2 and 6.2, based on differences in class characteristics.
BVD68E-5355	Q1 - The tread design, physical size, wear, and multiple randomly acquired characteristics corresponded between Q1 and the K tire section K3. In my opinion, the K tire section K3 was the source of, and made, the Q1 impression. Identification. Q2 - The tread design, physical size, wear, and multiple randomly acquired characteristics corresponded between Q2 and the K tire section K8. In my opinion, the K tire section K8 was the source of, and made, the Q2 impression. Identification. Q3 - There were some similarities in tread design and physical size between Q3 and the K tire section K7; however, a meaningful difference in wear was present and some differences in randomly acquired characteristics were observed. In my opinion, the known tire was not the source of, and did not make, the Q3 tire impression. Exclusion. Q4 - There was a dissimilarity in tread design between Q4 and the K tire. In my opinion, the known tire was not the source of, and did not make, the Q4 tire impression. Exclusion. Q5 - There were some similarities in tread design and physical size between Q5 and the K tire section K5-K6; however, a meaningful difference in wear was present and some differences in randomly acquired characteristics were observed. In my opinion, the known tire was not the source of, and did not make, the Q5 tire impression. Exclusion.
CATP6D-5351	The questioned impressions were further determined to be a tire impression (Q1) and a partial tire impression (Q1b) that are similar in class characteristics (tread design, size), wear, and share randomly acquired characteristics with the recovered tire (K1-K8). It is our opinion that this tire impression and partial tire impression were made by the recovered tire. A questioned impression was further determined to be a tire impression (Q2) that is similar in class characteristics (tread design, size), wear, and share randomly acquired characteristics with the recovered tire (K1-K8). It is our opinion that this tire impression was made by the recovered tire. An additional questioned impression was further determined to be a tire impression (Q3) that is dissimilar in wear to the recovered tire (K1-K8). It is our opinion that this tire impression was not made by the recovered tire. The questioned impressions were further determined to be a partial tire impression (Q4) and a tire impression (Q5) that are dissimilar in tread design and/or wear to the recovered tire (K1-K8). It is our opinion that this partial tire impression and tire impression were not made by the recovered tire. The photographs of the recovered tire segments and the test impressions were used as comparison standards.

TABLE 2

WebCode- Test	Conclusions
CFVWK- 5351	On examination, I found: i) The individual characteristic marks on the questioned imprint 'Q1' to be similar to the individual characteristic marks on the recovered tire segments 'K3' and 'K6'. ii) The individual characteristic marks on the questioned imprint 'Q2' to be similar to the individual characteristic marks on the recovered tire segment 'K8'. iii) The individual characteristic marks on the questioned imprints 'Q3', 'Q4' and 'Q5' to be dissimilar to the individual characteristic marks on the recovered tire segments 'K1', 'K2', 'K3', 'K4', 'K5', 'K6', 'K7' and 'K8'. Therefore, I am of the opinion that: i) The questioned imprint 'Q1' was made by the recovered tire segments 'K3' and 'K6'. ii) The questioned imprint 'Q2' was made by the recovered tire segment 'K8'. iii) The questioned imprints 'Q3', 'Q4' and 'Q5' were not made by the recovered tire segments 'K1', 'K2', 'K3', 'K4', 'K5', 'K6', 'K7' and 'K8'.
CZX6JU- 5355	Q1: Questioned impression Q1 was identified as having been made by the known tire K, on Pirelli Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M&S, DOT 93 K1 M489 3920 based upon an agreement of all discernable class characteristics and reproducible individual characteristics. Q2: Questioned impression Q2 was identified as having been made by the known tire K, on Pirelli Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M&S, DOT 93 K1 M489 3920 based upon an agreement of all discernable class characteristics and reproducible individual characteristics. Q3: Questioned impression Q3 was eliminated as having been made by the known tire K, on Pirelli Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M&S, DOT 93 K1 M489 3920 based upon dissimilar wear characteristics. Q4: Questioned impression Q4 was eliminated as having been made by the known tire K, on Pirelli Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M&S, DOT 93 K1 M489 3920 based upon dissimilar tread pattern design. Q5: Questioned impression Q5 was eliminated as having been made by the known tire K, on Pirelli Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M&S, DOT 93 K1 M489 3920 based upon dissimilar wear characteristics.
D786ZA- 5355	Based on the above findings, I am of the opinion that the questioned imprints (Q1-Q2) found on a sign and a piece of plywood respectively, were made by the recovered tire. and the questioned imprints (Q3-Q5) found on a piece of plywood and a project poster, were not made by the recovered tire.
DXFMJF- 5355	Item 1: slow down sign Item 2: plywood Item 3: poster project Item 4: known tire photographs and imprints Results/Opinions and Interpretations: One tire Impression (Q1) suitable for comparison was observed on Item 1. Two tire Impressions (Q2 and Q3) suitable for comparison were observed on Item 2. Two tire Impressions (Q4 and Q5) suitable for comparison were observed on Item 3. Tire Impressions Q1 - Q5 were compared to sections K1 through K8 of the known tire, Item 4, with the following results: Item 4 (Sections K2-K3) was identified as the source of Impression Q1. Item 4 (Section K8) was identified as the source of Impression Q2. Item 4 and Impressions Q1 and Q2 correspond in tread design, noise treatment pattern, physical size, wear, and randomly acquired characteristics in sufficient quality and quantity to conclude that item 4 made Impressions Q1 and Q2. Item 4 (Sections K1-K8) was excluded as the source of Impressions Q3 and Q5. Item 4 does not correspond in wear, mold characteristics, and randomly acquired characteristics with Impressions Q3 and Q5. Item 4 did not make Impressions Q3 and Q5. Item 4 (Sections K1-K8) was excluded as the source of Impression Q4. Item 4 does not correspond in tread design with Impression Q4. Item 4 did not make Impression Q4. Remarks: The following conclusion scale descriptions are meant to provide context to the levels of opinions reached in this report. Identification: The highest degree of association. The questioned impression and the known surface share agreement of class and randomly acquired characteristics of sufficient quality and quantity to conclude that the known footwear or tire is the source of the questioned impression. High degree of association: The questioned impression and known surface correspond in the class characteristics of design, physical size, and general wear. There are additional individualizing characteristics; however, the conclusion is limited. The known shoe or tire probably made the impression, but this conclusion doesn't reach the level of a definitive identification. Other footwear or tires with the same class characteristics observed in the impression are included in the population of possible sources only if they display the same wear and/or randomly acquired characteristics observed in the questioned impression. Association of class characteristics: The questioned impression and known surface correspond in class characteristics of both design and physical size. Correspondence of general

TABLE 2

WebCode- Test	Conclusions
	wear may also be present. The known footwear or tire is a possible source of the questioned impression and therefore could have produced the impression. Other footwear or tires with the same class characteristics observed in the impression are included in the population of possible sources. Limited association of class characteristics: The questioned impression and known surface may correspond in some class characteristics: design, shape, physical size, general wear; however, there were significant limiting factors that do not permit a stronger association between the questioned impression and known surface. No confirmable differences were observed that could exclude the footwear or tire. The known footwear or tire is a possible source of the questioned impression and therefore could have produced the impression. Other footwear or tires with the same class characteristics observed in the impression are included in the population of possible sources. Indications of non-association: The questioned impression exhibits dissimilarities when compared to the known surface; however, the details or features were not sufficiently clear to permit an exclusion. Exclusion: The highest degree of non-association. Sufficient differences were noted in the comparison of class and/or randomly acquired characteristics between the questioned impression and the known surface. The known shoe or tire was not the source of, and did not make, the questioned impression. Lacks sufficient detail - Inconclusive: A comparison was conducted, however there is insufficient detail in the questioned impression for a meaningful conclusion.
EQQN7C- 5355	Results: Evidence Q1 and Q2 - there are marks where pattern, wear, and multiple significant details correspond with the tire K1-K8. Evidence Q3 and Q5 - there are marks where pattern is similar with the tire K1-K8 but there is support for different stage of wear which was evaluated not to be caused by the time difference between evidence acquiring, and the incident. Evidence Q4 - there are marks where pattern does not correspond with the tire K1-K8. Conclusion: At least the imprints in evidence Q1 and Q2 have been left by the tire K1-K8 (Conclusion scale: A).
F8UHCC- 5351	Questioned impression Q1 is a tire impression on a sign. Q1 was made by the known tire, K1. Questioned impression Q2 is a tire impression on a piece of plywood. Q2 was made by the known tire, K1. Questioned impression Q3 is a tire impression on a piece of plywood. The known tire, K1, did not make the Q3 impression. Questioned impression Q4 is a tire impression on a poster project. The known tire, K1, did not make the Q4 impression. Questioned impression Q5 is a tire impression on a poster project. The known tire, K1, did not make the Q5 impression. Tire impression analysis is based on the comparison of class and randomly acquired characteristics. Corresponding class and randomly acquired characteristics support the conclusion that the tire was the source of, and made, the questioned impression. Currently, the possibility that other tires having the same class and randomly acquired characteristics cannot be statistically calculated.
FLALY8- 5355	Item K (segments K2-K3) has been identified as the source of tire impression Q1. Item K (segments K7-K1) has been identified as the source of tire impression Q2. Item K has been excluded as the source of tire impressions Q3, Q4, and Q5.
GVXWL8- 5351	Exhibits 4 and 5.1 (questioned tire impressions Q1 and Q2) were identified as having been made by the tire that made exhibit 2, the submitted known tire impressions. Exhibits 5.2 and 6.2 (questioned tire impressions Q3 and Q5) could have been made by the same tire based on class characteristics. Exhibits 5.2 and 6.2 (questioned tire impressions Q3 and Q5) were not made by the tire that made exhibit 2, the submitted known impressions, based on differences in individual characteristics. Exhibits 6.1 (questioned tire impression Q4) was not made by the tire that made exhibit 2, the submitted known impressions, or the tire that made 5.2 or 6.2 (questioned tire impressions Q3 and Q5), based on differences in class characteristics.
GVXYBC- 5351	The questioned imprints Q1 may have originated from the recovered tire. The questioned imprints Q2 may have originated from the recovered tire. The questioned imprints Q3 did not originate from the recovered tire. The questioned imprints Q4 did not originate from the recovered tire. The questioned imprints Q5 did not originate from the recovered tire.

TABLE 2

WebCode-Test	Conclusions
J9TZ33-5351	Comparison Conducted between Q1 and K3 - Identification - Questioned and Known items share agreement of Class and RAC's of sufficient quality and quantity - Highest Degree of association Q2 and K1, K8 + K7 - Identification - Questioned and Known items share agreement of Class and RAC's of sufficient quality and quantity - Highest Degree of association Q3 - Exclusion Q4 - Exclusion Q5 - Exclusion
L8CHYN-5355	The tire marks in question Q1 and Q2 collected from the scene of the crime, relating to the commission of an offense in a school, were created with the tire bearing the inscriptions: "Pirelli, Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M+S, DOT 93 K1 M489 3920," collected from the suspect vehicle, namely: with its fragments K3 and K8, respectively.
LGHPC3-5355	Computer assisted comparisons utilizing overlay and side by side techniques between the Q1 to Q5 questioned impressions and the known tire resulted in the following conclusions: - The Q1 impressions (two separate impressions) correspond with the respective portions of the known tire in physical size and design, general condition of wear, and a number of randomly acquired characteristics. Therefore, the known tire is identified as the source of the Q1 impressions. - The Q2 impression corresponds with the respective portions of the known tire in physical size and design, general condition of wear, and a number of randomly acquired characteristics. Therefore, the known tire is identified as the source of the Q2 impression. - The Q3, Q4, and Q5 impressions differ in design or specific wear features with the known tire. Therefore, the known tire can be eliminated as the source of these impressions.
M86VWZ-5351	In the opinion of this examiner, Laboratory Item #001.C (K3) the recovered tire segment depicted in the submitted photograph was the source of, and made, Laboratory Item #001.I (Item Q1) the questioned imprint on a Slow Down Kids at Play sign depicted in the submitted photograph. In the opinion of this examiner, Laboratory Item #001.H (K8) the recovered tire segment depicted in the submitted photograph was the source of, and made, Laboratory Item #001.J (Item Q2) the questioned imprint on a piece of plywood depicted in the submitted photograph. In the opinion of this examiner, dissimilarities between Laboratory Item #001.K (Item Q3) the questioned imprint on a piece of plywood depicted in the submitted photograph and Laboratory Items #001.A through 001.H (K1 through K8) the eight known tire segments depicted in the submitted photographs indicated non-association; however, the details or features were not sufficient to permit an exclusion. In the opinion of this examiner, Laboratory Items #001.A through 001.H (K1 through K8) the eight known tire segments depicted in the submitted photographs were not the source of, and did not make, Laboratory Item #001.L (Item Q4) the questioned imprint on a school poster project depicted in the submitted photograph. In the opinion of this examiner, dissimilarities between Laboratory Item #001.M (Item Q5) the questioned imprint on a school poster project depicted in the submitted photograph and Laboratory Items #001.A through 001.H (K1 through K8) the eight known tire segments depicted in the submitted photographs indicated non-association; however, the details or features were not sufficient to permit an exclusion.
MBQE36-5351	COMPARISONS: Compare the partial, questioned tire track impressions labeled Q1 through Q5, with the known tire, test impressions, and transparencies in Submissions 001 and 001-A. RESULTS: The partial, questioned tire track impression labeled Q1, was made by the tire in Submission 001 (Segments K2-K3). The partial, questioned tire track impression labeled Q2, was made by the tire in Submission 001 (Segments K7-K1). The partial, questioned tire track impressions labeled Q3 and Q5, exhibited dissimilarities with the tire in Submission 001 and therefore have indications of non-association. The partial, questioned tire track impression labeled Q4, was not made by the tire in Submission 001. LIMITATIONS: One of the ribs on both of the partial, questioned tire track impressions Q3 and Q5, has one side of all the elements touching. However, this same rib on the photographed tire as well as on the test impressions show spaces in-between the elements on the corresponding rib. Due to this dissimilarity there are indications of non-association.
MQK6X2-5351	Exhibits 4 and 5.1 (questioned impressions Q1 and Q2) were made by the same tire that made exhibit 2, the submitted known tire impressions. Exhibits 5.2 and 6.2 (questioned impressions Q3 and Q5) were not made by the same tire that made exhibit 2, the submitted known tire impressions. Exhibits 5.2 and 6.2 (questioned impressions Q3 and Q5) could have been made by a second tire based on tread

TABLE 2

WebCode- Test	Conclusions
	design. Exhibit 6.1 (questioned impression Q4) was not made by the known tire that made exhibit 2, the submitted known tire impressions, or the tire that made exhibits 5.2 or 6.2 (questioned impressions Q3 or Q5) based on differences in tread design.
MT7N36- 5355	A. Imprint Q1 is an imprint of a tire and it corresponds in shape, design, size and in some wear and individual characteristics with the K3 segments of the suspected tire. It is in my opinion that the suspected tire (K1-K8) left this imprint. B. Imprint Q2 is an imprint of a tire and it corresponds in shape, design, size and in some wear and individual characteristics with the K8 segments of the suspected tire. It is in my opinion that the suspected tire (K1-K8) left this imprint. C. Imprint Q3 is a tire imprint that differ in shape and design from the segments K1-K8 of the suspected tire. It is in my opinion that the suspected tire did not leave this imprint D. Imprint Q4 is a tire imprint that differ in shape and design from the segments K1-K8 of the suspected tire. It is in my opinion that the suspected tire did not leave this imprint. E. Imprint Q5 is a tire imprint that differ in shape and design from the segments K1-K8 of the suspected tire. It is my opinion that the suspected tire did not leave this imprint.
MTB724- 5351	The Q1 impression and the tire segments K2/K3 share agreement of class and randomly acquired characteristics. The K tire was identified as making this impression. The Q2 impression and the tire segment K8 share agreement of class and randomly acquired characteristics. The K tire was identified as making this impression. The Q3 impression and the tire segments exhibit dissimilarities. The K tire was excluded as making this impression. The Q4 impression and the tire segments exhibit dissimilarities. The K tire was excluded as making this impression. The Q5 impression and the tire segments exhibit dissimilarities. The K tire was excluded as making this impression.
NEKVR4- 5351	K1 - K8 were compared with the questioned impression (Q1-Q5). Based on the class and individual characteristics, Q1 was identified to K3 and Q2 was identified to K8. Q3 through Q5 lacked the individual characteristics present in the known exemplars. Therefore, they were excluded as having made the impression.
NHK6ZK- 5355	The item of evidence identified as Q1 corresponds in design, pattern, physical size, and general and individual characteristics when compared to the item of evidence identified as K3. The item of evidence identified as Q2 corresponds in design, pattern, physical size, and general and individual characteristics when compared to the items of evidence identified as segments K8 and K1. The items of evidence identified as Q3 and Q5 exhibit a similar design and pattern. However, one of their ribs—specifically, one edge of the noise treadment—shows continuity, unlike the opposite edge which appears separated when compared to the items of evidence identified as K1 through K8. The item of evidence identified as Q4 presents a different pattern and design when compared to the items of evidence identified as K1 through K8.
PJARUY- 5351	Comparative analysis between the Item Q1 questioned tire track impression and test impressions from the recovered tire (segments K2-K3) revealed correspondence of class characteristics (pattern, physical size, pitch sequence, general condition of wear), and multiple randomly acquired characteristics. It was concluded that the recovered tire is the source of, and made, the Item Q1 tire track impression. Another tire being the source of the impression is considered a practical impossibility. Comparative analysis between the Item Q2 questioned tire track impression and test impressions from the recovered tire (segments K7-K1) revealed correspondence of class characteristics (pattern, physical size, pitch sequence, general condition of wear), and multiple randomly acquired characteristics. It was concluded that the recovered tire is the source of, and made, the Item Q2 tire track impression. Another tire being the source of the impression is considered a practical impossibility. Intercomparisons of the Item Q3 and Q5 questioned tire track impressions revealed correspondence of class characteristics (pattern and physical size). Comparative analysis revealed significant differences (physical size, general condition of wear, and randomly acquired characteristics) between the Item Q3 and Q5 questioned tire track impressions and test impressions from the recovered tire. It was concluded that the recovered tire did not make the Item Q3 and Q5 tire track impressions. Comparative analysis revealed significant differences (pattern) between the Item Q4 questioned tire track impression and test impressions from the recovered tire. It was concluded that the recovered tire did not make the Item Q4 tire track impression.

TABLE 2

WebCode- Test	Conclusions
	Comparative analysis revealed significant differences (pattern) between the Item Q4 questioned tire track impression and the Item Q3 and Q5 questioned tire track impressions. It was concluded that the tire that made the Item Q4 tire track impression is not the source of Items Q3 and Q5.
QBV9AZ- 5355	Q1TT1 - The Q1TT1 impression was made by the K3 tire segment based on sufficient agreement of observable class and randomly acquired characteristics present in Q1TT1 and the K3 tire segment. Sufficient differences were noted between the characteristics present Q1TT1 and in tire segments K1, K2, and K4-K8 to conclude that the impression was not made by K1, K2, or K4-K8 tire segments. Q2TT1 - The Q2TT1 impression was made by the K8 tire segment based on sufficient agreement of observable class and randomly acquired characteristics present in Q2TT1 and the K8 tire segment. Sufficient differences were noted between the characteristics present Q2TT1 and in tire segments K1-K7 to conclude that the impression was not made by K1-K7 tire segments. Q3TT1 - Sufficient differences were noted between the characteristics present in Q3TT1 and in tire segments K1-K8 to conclude that the impression was not made by K1-K8 tire segments. Q4TT1 - Sufficient differences were noted between the characteristics present in Q4TT1 and in tire segments K1-K8 to conclude that the impression was not made by K1-K8 tire segments. Q5TT1 - Sufficient differences were noted between the characteristics present in Q5TT1 and in tire segments K1-K8 to conclude that the impression was not made by K1-K8 tire segments.
QKKUHJ- 5355	Tire Impressions Q1 & Q2 correspond with the recovered tire in tread design, physical size and randomly acquired characteristics. Therefore, this tire was identified as the source of these impressions. Tire Impression Q3 through Q5 does not correspond with the recovered tire in tread design. Therefore, this tire was excluded as the source of this impression.
QNNMCH- 5355	[No Conclusions Reported.]
QUCA63- 5355	Questioned impression Q1 was compared and identified to known exemplars K2-K3, the Questioned impression and known exemplars correspond in tread design, size, noise pattern, and have multiple randomly acquired characteristics in common. Questioned impression Q2 was compared and identified to known exemplars K7, K8, & K1, the Questioned impression and known exemplars correspond in tread design, size, noise pattern, and have multiple randomly acquired characteristics in common. Questioned impression Q3 was compared to the known exemplars K1-K8. An Association of class characteristics could be found between Questioned impression Q3 and the known exemplars K1-K8, they correspond in tread design, size, and shape, and the noise pattern between K6-K7 could be associated with the Questioned impression. Questioned impression Q4 was compared and excluded from the exemplars K1-K8, the Questioned impression and known exemplars do not correspond in tread design. Questioned impression Q5 was compared to the known exemplars K1-K8. An Association of class characteristics could be found between Questioned impression Q5 and the known exemplars K1-K8, they correspond in tread design, size, and shape, and the noise pattern between K5-K6 could be associated with the Questioned impression.
TY68ZC- 5355	The known item segment K3 is identified to have made the questioned item Q1. They share agreement of class and randomly acquired characteristics of sufficient quality and quantity. Highest degree of association. The known item segment K8 is identified to have made the questioned item Q2. They share agreement of class and randomly acquired characteristics of sufficient quality and quantity. Highest degree of association. Questioned item Q3 shows indication of non-association to the known inked imprints since Q3 is more worn out. However, Q3 seems to be a tire of same make, model and size as the known inked imprints. Q3 corresponds to area K7, but on a more worn out tire. Questioned item Q4 is excluded from being made from the known inked imprints. Different class characteristics. Questioned item Q5 shows indication of non-association to the known inked imprints since Q5 is more worn out. However, Q5 seems to be a tire of same make, model and size as the known inked imprints. Q5 corresponds to area K6, but on a more worn out tire.

TABLE 2

WebCode- Test	Conclusions
U2HF9V- 5351	Each of Exhibits 1 through 5 were analyzed and all were deemed suitable for comparison. Exhibits 1 and 2 were compared with the images of the known tire and tire impressions. Based on correspondence of tread design, class characteristics, and randomly acquired characteristics, both Exhibits 1 and 2 were source identifications with the known tire depicted in Exhibit 6 (Source Identification). Exhibits 3 and 5 were compared with the images of the known tire and tire impressions. Exhibits 3 and 5 corresponded in overall tread design with the known tire and impressions in Exhibit 6, however, there were differences in class characteristics observed. Exhibits 3 and 5 were excluded as having been made by the tire in Exhibit 6 (Source Exclusion). Exhibit 4 was compared with the images of the known tire and tire impressions in Exhibit 6. Exhibit 4 has a different tread design than Exhibit 6 and therefore was excluded as having been made by the tire in Exhibit 6 (Source Exclusion).
U3DYAW- 5351	Item 1: This photograph depicts one questioned tire impression in black material on a multi-colored surface. The questioned impression (Q1) is a complete tire impression and is similar in size, shape, and tread design to the suspect tire (01-04). In addition, there is at least one randomly acquired characteristic visible in the questioned impression and on tread of the tire. It is my opinion that this questioned impression was made by the suspect tire (Category 1). Item 2: This photograph depicts a total of two questioned tire impressions in black material on a wood surface. The questioned impressions (Q2 and Q3) are complete tire impressions. One of the questioned impressions (Q2) is similar in size, shape, and tread design to the suspect tire (01-04). In addition, there is at least one randomly acquired characteristic visible in the questioned impression and on tread of the tire. It is my opinion that this questioned impression was made by the suspect tire (Category 1). The remaining questioned impression (Q3) is similar in size, shape, and tread design, but different in wear and at least 2 randomly acquired characteristics from the suspect tire (01-04). It is my opinion that this questioned impression was not made by the suspect tire (Category 5). Item 3: This photograph depicts a total of two questioned tire impressions on a multi-color surface. The questioned impressions (Q4 and Q5) are a partial tire impression and a complete tire impression, respectively. Both of the questioned impressions are different in tread design or size and wear from the suspect tire (01-04). It is my opinion that these questioned impressions were not made by the suspect tire (Category 5). Item 4: This item was used for comparison purposes.
UJXPAV- 5351	The Item Q1, Q2, Q3, Q4 and Q5 questioned tire impressions were analyzed, compared, and evaluated with the Item K1 through K8 known tire segments. The Item Q1 questioned tire impression corresponds in tread design, physical size, general wear, and seven (7) random accidental characteristics with the Item K3 tire segment. The Item Q2 questioned tire impression corresponds in tread design, physical size, general wear, and ten (10) random accidental characteristics with the Item K8 tire segment. The Item Q3 questioned tire impression does not correspond in general wear with the Item K1 through K8 known tire segments. The Item Q4 questioned tire impression does not correspond in tread design with the Item K1 through K8 known tire segments. The Item Q5 questioned tire impression does not correspond in general wear with the Item K1 through K8 known tire segments. Based upon the factors, it is the opinion of this examiner that: the Item Q1 questioned tire impression was the source of, and was made by the K3 known tire segment. Another tire being the source of the impression is considered a practical impossibility. the Item Q2 questioned tire impression was the source of, and was made by the K8 known tire segment. Another tire being the source of the impression is considered a practical impossibility. the Item Q3 questioned tire impression was not made by the Item K1 through K8 known tire segments. the Item Q4 questioned tire impression was not made by the Item K1 through K8 known tire segments. the Item Q5 questioned tire impression was not made by the Item K1 through K8 known tire segments.
UPNYLE- 5355	1.The imprint Q1 from the Slow Down Kids At Play Sign was created with marked segment of the experimental trace K3; 2.The imprint Q2 from the Plywoos was created with marked segment of the experimental trace K8; 3.The imprint Q3 from the Plywood exhibits dissimilarities in comparison with the marked segments K1/K2/K3/K4/K5/K6/K7/K8; 4. The imprint Q4 from the Poster Project exhibits suficient differences of class. 5. The imprint Q5 from the Poster Project exhibits dissimilarities in comparison with the marked segments K1/K2/K3/K4/K5/K6/K7/K8;

TABLE 2

WebCode- Test	Conclusions
UXH6DV- 5355	Exhibits 1 - 5 contained images of five questioned impressions, Q1-Q5. The questioned impressions were compared to Exhibit 6 (digital images of the known tire (K1-K8)), Exhibit 7 (digital images of the known imprints (K1-K8_DarkInk)), and Exhibit 8 (digital images of known imprints (K1-K8_LightInk)) 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 impressions in Exhibit 1 (Q1) and Exhibit 2 (Q2) corresponded in physical shape, tread design, noise treatment, wear and randomly acquired characteristics to the known tire segment K3 and K8 respectively. Therefore, the known tire represented in Exhibits 6 – 8 is the source of the questioned tire impressions in Q1 and Q2 (Source Identification). The questioned impressions in Exhibits 3 (Q3), 4 (Q4), and 5 (Q5) were different in tread pattern, physical size, wear, and/or randomly acquired characteristics to the known tire as represented in Exhibits 6 – 8. Therefore, the questioned impressions were not made by the tire represented in Exhibits 6 – 8 (Exclusion). Further comparisons can be done upon the submission of additional known sources. See the Appendix of this report for further context regarding the conclusions listed above. [Report not included]
V6WDDW- 5355	Q1-Q5 are tire impressions which were compared to the known suspect tire K. The tread design, physical size and general wear of Q1 and Q2 correspond to K. In addition there are several corresponding randomly acquired characteristics. Therefore it was determined that impressions Q1 and Q2 were made by this tire, K. Q3 and Q5 are similar in tread design to the recovered tire K, but have differences in degree of wear and/or physical size. Q4 has a different tread design from K. Therefore, it was determined that Q3-Q5 could not have been made by K.
V7RVFX- 5355	In item Q1, the tire track imprint adjacent to the letter designation originates from segment K3. The tire track imprint in Item Q2 originates from segment K8. The pattern of the tire track imprints in Items Q3–Q5 differs from the pattern of segments K1–K8.
VVL96C- 5355	[No Conclusions Reported.]
WLFNFP- 5351	There is a high degree of association between the Item K tire and the Item Q1 tire track imprint based on the class characteristics of design, physical size, and general wear as well as the correspondence of multiple randomly acquired characteristics in the visible area. An additional tire track imprint is present in the Q1 photograph and overlaps with a portion of Q1. There is an association of the class characteristics of design, physical size, and general wear and one randomly acquired characteristic in the visible area. The Item K tire is identified as the source of the Item Q2 tire track imprint based on the class characteristics of design, physical size, and general wear as well as the correspondence of multiple randomly acquired characteristics of sufficient quality and quantity in the visible area. The Item K tire is excluded as the source of the Item Q3 tire track imprint. Although both had similarities in design and physical size, the Q3 tire track imprint exhibited more general wear than the Item K tire. The Item K tire is excluded as the source of the Item Q4 tire track imprint based on differences in design and physical size. The Item K tire is excluded as the source of the Item Q5 tire track imprint. Although both had similarities in design and physical size, the Q5 tire track imprint exhibited more general wear than the Item K tire.
XBDP6U- 5351	The mark Q1 was examined when it was found to show agreement in tread pattern, size, spacing and fine detail with segments K2 and K3 of the suspect tyre such that the suspect tyre was responsible for making the mark Q1. The mark Q2 was examined when it was found to show agreement in tread pattern, size, spacing and fine detail with segments K7, K8 and K1 of the suspect tyre such that the suspect tyre was responsible for making the mark Q2. The mark Q3 was examined when it was found to show agreement in tread pattern, size and spacing with segment K7 of the suspect tyre, however, differences in wear were noted such that the suspect tyre was not responsible for making the mark Q3. The mark Q4 was examined when it was found to be different in tread pattern from the suspect tyre such that the suspect tyre was not responsible for making the mark Q4. The mark Q5 was examined

TABLE 2

WebCode- Test	Conclusions
	when it was found to show agreement in tread pattern elements with the suspect tyre however differences in spacing were noted such that the suspect tyre was not responsible for making the mark Q5.
Y2JYXT- 5351	Lucia Forensic 8.10 software and additionally a transparent foil were used in this test. The photographs of a tire (items K1-K8) and their imprints (items K1_Darkink-K8_Darkink) were compared with photographs of questioned imprints (items Q1-Q5). It was observed that on the surface of the tire, being the comparative material, there were present some individual identifying characteristics. Similar individual characteristics were also found in the evidence material marked Q1 (segment K3), Q2 (segment K8), and therefore it was assigned a grade A to them. Items Q3-Q5 are different from the comparative materials (grade G).
YH4MA9- 5355	Items Submitted: Sidewall information from Known Tire: Pirelli, Cinturato P7 All Season, ECOIMPACT, 225/45/ R18 91V M+S, DOB 93 K1 M489 3920 Items: K1-K3: Photographs of the recovered tire (segments) Q1: Photograph of questioned imprint found on a 'Slow Down Kids At Play' sign. Q2: Photograph of questioned imprint found on a piece of plywood. Q3: Photograph of questioned imprint found on a piece of plywood. Q4: Photograph of questioned imprint found on a school poster project. Q5: Photograph of questioned imprint found on a school poster project. The questioned imprint labeled Q1 and the known tire segment labeled K3, share agreement of class, wear and randomly acquired characteristics of sufficient quality and quantity. It is the opinion of this examiner, that Q1 was made by the known tire segment labeled K3. The questioned imprint labeled Q2 and the known tire segment labeled K8, share agreement of class, wear and randomly acquired characteristics of sufficient quality and quantity. It is the opinion of this examiner, that Q2 was made by the known tire segment labeled K8. The questioned imprints labeled Q3, Q4 and Q5 were eliminated as having been made by the known tire.
YPA46N- 5355	Five (5) manufactured pattern impressions, that appear to be of tire origin, suitable for comparative examination were noted in Exhibits Q1, Q2-Q3, and Q4-Q5. One (1) manufactured pattern impression noted in Exhibit Q1, (Q1), was made by the tire depicted in Exhibits K3 and K3_Darklnk based on design, physical size, wear, noise treatment 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. An additional manufactured pattern impression noted in Exhibit Q1 was not examined per the agency. One (1) manufactured pattern impression noted in Exhibit Q2-Q3 (Q2) was made by the tire depicted in Exhibits K8 and K8_Darklnk 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. Two (2) manufactured pattern impressions noted in Exhibits Q2-Q3 (Q3), Q4-Q5 (Q5), were not made by the tire depicted in Exhibits K1 through K8 and K1_Darklnk through K8_Darklnk 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. The remaining manufactured pattern impression noted in Exhibit Q4-Q5 (Q4), was not made by the tire depicted in Exhibits K1 through K8 and K1_Darklnk through K8_Darklnk based on differences in design. 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.
ZVUJ9L- 5351	By comparing the tread pattern of a tyre to tyre impression it is often possible to determine whether or not that particular tyre made that impression. I have compared the tread pattern of the submitted impressions, Q1 to Q5 to the test impressions of the submitted tyre K1 to K8. This comparison process examines the tyre and the tyre impressions to investigate any correspondence or difference in tread pattern and dimensions, the presence of any wear, and the location, dimensions and shape of any randomly acquired characteristics. In subjectively assessing the strength of this correspondence I have considered the following two propositions: the probability of finding the tyre impression evidence if the

TABLE 2

WebCode- Test	Conclusions
ZW3WQM- 5355	tyre made the impression, and the probability of finding the tyre evidence if another tyre made the impression. The statement of opinion as to the scientific significance of the correspondence between the tyre and the tyre impressions is selected from the following scale: is neutral, provides slight support, provides moderate support, provides strong support, provides very strong support, and provides extremely strong support. There was a correspondence of the tread pattern, dimensions and randomly acquired characteristics between the scene impression Q1 and the tyre impression K3, and also between the scene impression Q2 and the tyre impression K8. Therefore, the submitted tyre, or another tyre with the same tread pattern, dimensions and areas of randomly acquired characteristics could have left the tyre impressions at the scene. In my opinion, this combination of tread pattern, dimensions and randomly acquired characteristics is rare and therefore this correspondence provides extremely strong support for the proposition that the submitted tyre made the scene impressions Q1 and Q2. There was a correspondence of tread pattern between the scene impression Q3 and the tyre impression K7, and also between the scene impression Q5 and the tyre impressions K5 and K6. The clarity in both of these scenes impressions were very good, and there did not appear to be any distortion in the impression. There was a difference in dimensions between the scene and tyre impressions in both, and therefore, in my opinion, the scene impressions were not made by the submitted tyre. However, in my opinion, the impressions were made by a tyre with the same tread pattern as the submitted tyre. The tread pattern elements in scene impression Q4 did not correspond to the tread pattern elements of the submitted tyre. Therefore, the tyre can be excluded as having made the scene impression Q4. The known tire was identified as the source of impressions Q1, Q1B, and Q2. Q1, Q1B, and Q2 each shared agreement of class and wear, and had a sufficient quality and quantity of randomly acquired characteristics with the known tire; the known tire generated these impressions: - Segments K2 – K3 were the source of Q1. - Segments K6 – K7 were the source of Q1B. - Segments K7 – K8 – K1 were the source of Q2. The known tire was excluded as being a source of the remaining impressions Q3, Q4, and Q5. While the general tread patterns of Q3 and Q5 resembled the pattern of the known tire, the size and wear of these impressions were different than those produced by the known tire. The tread pattern of impression Q4 was entirely different than the pattern of the known tire.

Additional Comments

TABLE 3

WebCode-Test	Additional Comments
29DQJR-5351	Only the impression clearly labeled as "Q1" was analyzed. A second impression adjacent to Q1 was observed on the material received for analysis, but was not analyzed further.
2WYTEN-5351	The poster containing Q1 contains another partial tire impression that is not labeled. This unlabeled partial tire impression overlaps with Q1. However, due to this impression not being labeled or mentioned in the paperwork for this proficiency test, no analysis was performed using this partial tire impression. In casework, this unlabeled partial tire impression would be analyzed and compared to the known tire impressions. For future proficiency tests, it should be noted in the paperwork whether any unlabeled impressions should be addressed in order to avoid confusion.
3TWCCK-5351	I would like to make a recommendation on the Q-1 imprint. There were two separate tire impressions on the Slow Down Kids sign. In the instructions, I would make it clear that the examiner needs only to focus on the one imprint labeled not on the second one too. I would like to suggest also providing more options for digital images. The photographs of the tires are very difficult to see the small randomly acquired characteristics with just one photograph print out. Thank you.
46M42N-5351	The photographs of the known tire K1 - K8 seemed to have very poor lighting of the tire and it was very difficult to see the randomly acquired characteristics. Please consider oblique lighting or brighter top lighting for future tire tread proficiencies. Over half of the tire tread impression in segment K6 was lighter compared to the other segment impressions. In casework, another tire roll would have been performed so that the inking of that tire segment would be more uniform.
79F6V3-5355	The photographs of the tire were dark and the lighting was such that it was difficult to discern some of the damage features, especially the smaller / shallower ones.
8QBZ4J-5351	Please have additional photographs of the tires with varying lighting as it can be hard to see the randomly acquired characteristics on the tire.
9Y4RPH-5351	The tire that produced the impressions in Q3 and Q5 exhibits a similar tread pattern as the submitted tire exemplars and may be of a similar size. If the suspect vehicle has additional tires with this tread design further comparisons may be possible. The SWGTREAD Range of Conclusions would be included in the remarks section of the report.
B64QFX-5355	The Q5 imprint was visually obstructed by background elements such as the word "BOAT," making it difficult to isolate tread features. The dark ink exemplars provided clearer detail than the light ink supplemental images. Directional arrows were helpful in aligning questioned and known imprints for accurate comparison. No distinct randomly acquired characteristics were observed in Q3, Q4, or Q5, which limited the strength of those conclusions.
CATP6D-5351	The additional impression with Q1 was atypical to casework. We would examine and compare all impressions observed in casework. This proficiency did not address the additional impression.
CZX6JU-5355	An additional tire impression remains on the photograph containing Q1. This impression was not compared as it was not labeled nor was a comparison requested by the contributor on the submission sheet.
DXFMJF-5355	The additional impression on the slow down sign would have also been reported and analyzed in real casework.
EQQN7C-5355	Tire K1-K8 has been acquired the day of the incident.
J9TZ33-5351	While Q3 and Q5 are excluded as being made by the single tyre submitted for analysis. They do share class characteristics of design and are possibly made by a tyre of the same make or model or another make and model with the same design.
LGHPC3-5355	There are two separate impressions in the Q1 photograph. One is identified to K2-K3 and the other is identified to K6-K7. However, the answer sheet did not allow both of these regions of the known tire to be inputted. Only the K2-K3 segment was input.

TABLE 3

WebCode- Test	Additional Comments
M86VWZ- 5351	The photographs of the tires were dark and difficult to use in evaluating the fine details in the treads. Proper lighting would have helped tremendously as has been the case in the past (Test 24-5351).
MBQE36- 5351	There is an additional tire track impression intersecting Q1 that was not evaluated as it was not marked by CTS.
U3DYAW- 5351	I don't recommend including Q impressions that aren't being evaluated as they would not be ignored in actual casework.
V7RVFX- 5355	The tire track imprint without a letter designation (found on a 'Slow Down Kids At Play' sign) exhibits an association of class characteristics with segment K6.
XBDP6U- 5351	A technical introduction would be included in the report.

-End of Report-
(Appendix may follow)

Test No. 25-5351: Tire Track Imprint Evidence

DATA MUST BE SUBMITTED BY **Sept. 22, 2025, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: 9U839B

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 homicide at a school and recovered tire track imprints on objects near the school. On the day of the incident, the suspect vehicle was located approximately 3 miles from the school. 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: Pirelli, Cinturato P7 All Season, ECOIMPACT, 225/45 R18 91V M+S, DOT 93 K1 M489 3920.

Known, inked imprints (K1_DarkInk through K8_DarkInk) 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.

CTS provides a digital download supplemental for the Tire Track Imprint Evidence test series. This supplemental contains an additional set of known inked exemplars (K1_LightInk through K8_LightInk), accessible through a link on the CTS Portal data entry form (see below). While the photo packet contains all materials necessary to complete the test as presented, the supplemental is intended to bolster participant confidence in their conclusions.

For the supplemental images, you are not limited to conducting only on-screen comparisons and may employ any other method you wish. However, because of differences in printing technology, CTS cannot guarantee the quality of images you print from the digital media.

Items Submitted (Sample Pack TIEP - Photographs):

K1-K8: Photographs of the recovered tire (segments), lighted from above.

K1_DarkInk-K8_DarkInk: Images of known imprints made with the recovered tire (segments).

K1_LightInk-K8_LightInk: Digital supplemental images of known imprints made with the recovered tire (segments).

Q1: Photograph of questioned imprint found on a 'Slow Down Kids At Play' sign.

Q2-Q3: Photograph of questioned imprints found on a piece of plywood.

Q4-Q5: Photograph of questioned imprints found on a school poster project.

To verify a complete and accurate download, the hash value for the downloaded .ZIP file is as follows:

25-5351_5_Tire Track Imprint Evidence Supplemental.zip MD5 hash value: d2f9047bddb8a4ab5160608852c65cf5

25-5351_5_Tire Track Imprint Evidence Supplemental.zip SHA1 hash value: 79ffb5c604c73b02437af69cf3a80f3e90777191

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. Report a single segment or multiple segments like the example shown below.

Imprint		Segment(s)	
Q1:	B	K1	

Imprint		Segment(s)	
Q2:	A	K1-K2	

'Slow Down Kids At Play' Sign			
Imprint		Segment(s)	
Q1:			

Plywood			
Imprint		Segment(s)	
Q2:			
Q3:			

Poster Project			
Imprint		Segment(s)	
Q4:			
Q5:			

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

Note: Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.

3.) Additional Comments

Note: Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.

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

A2LA Certificate No.

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

Authorized Contact Person and Title

Laboratory Name

Location (City/State)