



Bloodstain Pattern Analysis

Test No. 20-5601/5 Summary Report

Each sample pack consisted of digitally produced photographs (20-5601) or directly downloadable digital images (20-5605) of bloodstains for Angle of Impact Determination and Pattern Description. Data were returned from 193 participants: 93 for 20-5601 and 100 for 20-5605 and are compiled into the following tables:

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

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

Manufacturer's Information

Each sample set contained the following images: Angle of Impact Determination Stains A - E (Item 1), Pattern Description: Single Pattern Recognition (Items 2, 3, and 4), and Pattern Description: Recognition and Description (Item 5) provided in photographic (5601) or digital download (5605) form. Participants were requested to determine the angle of impact of Stains A - E (Item 1), identify the pattern for Items 2 - 4, and write a brief description of the pattern(s) for Item 5. A digital download supplemental of medium range shots for Items 2-5 was provided to all participants as a courtesy.

SAMPLE SET ASSEMBLY:

Once sample preparation was done, verification was completed, and photos produced, 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 as a zipped file on the CTS portal.

VERIFICATION:

Laboratories that conducted the predistribution examination of the Angle of Impact stains reported consistent results for each of the Angle of Impact Stains A - E, and their findings were comparable to the Preparation Angles. The responses of predistribution laboratories were consistent with the expected pattern identifications for Items 2 - 4 and the pattern description for Item 5.

SAMPLE PREPARATION: All stains were produced using human whole blood.

ANGLE OF IMPACT DETERMINATION:

For each impact, blood was released from a pipette at a height of approximately thirty-six inches above the impact surface. White posterboard targets were placed on an inclined plane at the following predetermined angles from the vertical:

<u>Stain</u>	<u>Preparation Angle</u>
A	43.0°
B	21.1°
C	18.1°
D	14.1°
E	28.2°

Please note that the Preparation Angle is the value used for the test preparation phase and may not necessarily represent the final angle of the drops. It is advised to wait for the Grand Mean statistics available in the Summary and Individual Reports before evaluating performance.

Manufacturer's Information, continued

PATTERN DESCRIPTION

- Pattern 2: A screwdriver was dipped into blood and slashed in a downward direction three times near the vertical target, redipping after each motion.
- Pattern 3: A small volume of blood was deposited onto a target and allowed to partially dry. A dry piece of fabric was drawn through the blood and across the target in a left to right and downward direction.
- Pattern 4: A dry cloth rag was placed onto the target. Blood was gently deposited adjacent to the rag and allowed to soak into the fabric.
- Pattern 5: An automated pipette was used to deposit blood three times in an upward motion on a vertical target and allowed to move under gravity down the substrate. A dry sleeve was moved through the blood trails of the second and third depositions in a left to right and upward direction.

Summary Comments

Introduction

This test consisted of two sections: Angle of Impact Determination and Pattern Description. Participants had the option of receiving the stains and patterns for examination in the form of photographs or directly downloadable digital images. A digital supplemental that showed the entirety of the target substrate for each item in the Pattern Description section (Items 2-5) was also made available to all participants via the customer portal. Use of these supplemental images was optional and meant to bolster participants' confidence in their conclusions.

Angle of Impact

For angle of impact determination, participants were provided with images of five impact stains prepared at known angles from the vertical (see table below). Results marked with an "X" in Table 1 are greater than or equal to ± 3 standard deviations (STD) from the grand mean (GM). These results have been excluded from the statistical calculations presented at the end of each Stain table. Each exclusion was determined independently of other values (i.e. Length exclusion based only on Length GM; CalcAng exclusion based only on CalcAng GM). For some participants, significantly discrepant length/width measurements provided for magnified drops were excluded from calculations while their angle was not; this is due to an appropriate length/width ratio being achieved to result in an angle finding within the ± 3 STD range. The Grand Mean and Standard Deviation are shown below, based on each Calculated Angle.

<u>Stain</u>	<u>Preparation Angle</u>	<u>Grand Mean</u>	<u>Standard Deviation</u>
A	43.0°	45.16°	2.22
B	21.1°	22.06°	1.38
C	18.1°	16.90°	1.00
D	14.1°	14.09°	0.77
E	28.2°	32.66°	1.41

Pattern Description

The pattern description was divided into two separate parts. Part one consisted of three patterns (one vertical target of painted drywall, two horizontal targets on vinyl tiles), and participants were asked to select the single pattern type that best described the pattern contained in the image. The second part of the pattern description section consisted of one vertical target on painted drywall, and participants were asked to provide a detailed description of the possible bloodstain patterns or events that created the final result. Please refer to the Manufacturer's Information for detailed explanations of how the patterns were created.

For part one, Item 2, 98.4% of participants reported "Cast-off Pattern". For Item 3, 94.3% of participants reported "Wipe". For Item 4, 89.1% of participants reported "Saturation Stain", with 9.9% reporting either "Drip Stain" or "Drip Pattern" in reference to initial blood deposition on the tile.

For part two, Item 5, the majority of participants reported the following distinct pattern types: 1) Projected Pattern, commonly with the note that there were three occurrences of projection. 2) Flow, associated with the volume of blood in the projections acting under gravity. 3) Altered Stain, or more specifically, Wipe, indicated through the flow of the second and third projections. Some participants also noted satellite staining and perimeter stains associated with the previous actions.

New for 2020, CTS included the addition of digital supplemental files to all participants that provided a full capture of the entire pattern as created in Items 2-5. This was provided to bolster confidence in participants' conclusions regarding pattern types identified in the original test materials, which does not always capture the entirety of the target. CTS intends to continue the inclusion of this supplemental in future test cycles.

Angle of Impact Determination

TABLE 1

Table Explanation

The following table presents participants' reported Width and Length measurements for each bloodstain (A-E), along with Angle of Impact calculations. Several comparison statistics computed by CTS are presented as well. A brief explanation of each appears below:

CalcAng - Calculated Angle of Impact: This value was calculated by CTS using the width and length of the bloodstain reported by the participant and the formula: $\sin \theta = \text{width}/\text{length}$, where θ is the angle of impact. This calculation can only be performed when the reported width is less than or equal to the reported length.

Diff - Difference: The numerical difference between the participant's measurement and the Grand Mean.

GM - Grand Mean: The average of the measurements submitted by all the participants, not including any data specifically excluded (marked with X).

SD - Between Participant Standard Deviation : For each measurement, the standard deviation of the participant data about the Grand Mean, not including those participants excluded from the Grand Mean. The Between Participant Standard Deviation is an indication of the precision of measurement between participants.

CPV - Comparative Performance Value: For each value not excluded from statistical calculations, the CPV is the *Difference* divided by the *Between Participant Standard Deviation*. The *Difference* and *Between Participant Standard Deviation* values given below are rounded values, and as such, there may be a slight variation between the CPV provided in the chart and a CPV calculated by hand with the rounded values. The CPV is an indication of how well a participant's measurement agrees with the measurements submitted by other participants. The CPV is a (unitless) ratio indicating the number of standard deviations a participant's results are from the Grand Mean. The closer a participant's CPV is to zero, the more consistent their results are with the other participants' data. The CPV is a specific type of Z-score.

When a participant reports data that gives a CPV above 3.00 or below -3.00 the result is "flagged" ("X"). The use of this criterion is well accepted as a performance indicator and ensures in excess of 99% confidence that flagged results are different from the other participants'.

TABLE 1
Stain A

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
2B2TBA- 5605	10.00	0.17	0.56	14.40	0.52	1.04	44.00	-1.13	-0.51	43.98
2QBHNB- 5601	10.00	0.17	0.56	14.40	0.52	1.04	43.90	-1.23	-0.56	43.98
2UVQZQ- 5605	9.50	-0.33	-1.06	14.00	0.12	0.23	43.00	-2.13	-0.97	42.73
2XCUJ8- 5605	10.00	0.17	0.56	13.30	-0.58	-1.18	49.00	3.87	1.77	48.75
2XF9YT- 5601	9.60	-0.23	-0.74	13.40	-0.48	-0.98	45.80	0.67	0.31	45.76
33KATV- 5605	9.90	0.07	0.24	14.10	0.22	0.43	44.60	-0.53	-0.24	44.60
3CA32L- 5605	9.50	-0.33	-1.06	14.00	0.12	0.23	42.70	-2.43	-1.11	42.73
3LYTME- 5601	9.94	0.11	0.37	14.15	0.27	0.53	44.60	-0.53	-0.24	44.63
3RJ9TW- 5601	10.00	0.17	0.56	15.00	1.12	2.25	41.80	-3.33	-1.52	41.81
3V34U4- 5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
46QA9M- 5601	9.80	-0.03	-0.09	14.00	0.12	0.23	44.00	-1.13	-0.51	44.43
4DEAGJ- 5605	10.00	0.17	0.56	15.00	1.12	2.25	41.70	-3.43	-1.56	41.81
4LR293- 5605	10.00	0.17	0.56	13.50	-0.38	-0.78	47.90	2.77	1.27	47.79
4Q3EQ2- 5605	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
4U2QL2- 5601	10.00	0.17	0.56	13.80	-0.08	-0.17	46.00	0.87	0.40	46.44
4YF94H- 5605	10.00	0.17	0.56	13.50	-0.38	-0.78	48.00	2.87	1.31	47.79
6F327V- 5605	9.50	-0.33	-1.06	13.50	-0.38	-0.78	44.70	-0.43	-0.19	44.72
6JJ9UU- 5601	9.90	0.07	0.24	13.60	-0.28	-0.57	47.00	1.87	0.86	46.71
6NXYYP- 5601	9.90	0.07	0.24	13.50	-0.38	-0.78	47.00	1.87	0.86	47.17

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
6REX4Q- 5605	9.50	-0.33	-1.06	13.40	-0.48	-0.98	44.00	-1.13	-0.51	45.15
6UH7E9- 5601	10.00	0.17	0.56	14.30	0.42	0.84	44.40	-0.73	-0.33	44.37
74PZA2- 5601	10.02	0.19	0.62	14.44	0.56	1.12	43.90	-1.23	-0.56	43.94
777TXA- 5605	9.77	-0.06	-0.19	13.73	-0.16	-0.32	45.00	-0.13	-0.06	45.38
78NEWR- 5601	10.00	0.17	0.56	14.00	0.12	0.23	45.50	0.37	0.17	45.58
79VU4X- 5605	9.79	-0.04	-0.12	14.10	0.22	0.43	43.97	-1.16	-0.53	43.97
7AAQNP- 5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
7B463L- 5605	9.50	-0.33	-1.06	14.50	0.62	1.24	40.90	-4.23	-1.93	40.93
7L78KX- 5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.60	5.47	2.50	50.28
7PJ8HP- 5605	9.00	-0.83	-2.68	13.00	-0.88	-1.78	44.00	-1.13	-0.51	43.81
7QGHB8- 5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
7XHPYM- 5605	9.40	-0.43	-1.38	14.30	0.42	0.84	41.00	-4.13	-1.88	41.10
7YTG6H- 5601	9.20	-0.63	-2.03	14.40	0.52	1.04	39.71	-5.42	-2.47	39.71
89QW9R- 5605	9.40	-0.43	-1.38	14.30	0.42	0.84	41.10	-4.03	-1.84	41.10
8CAR9Y- 5601	10.10	0.27	0.88	14.10	0.22	0.43	46.00	0.87	0.40	45.75
8JXE46- 5605	9.80	-0.03	-0.09	13.70	-0.18	-0.37	45.70	0.57	0.26	45.67
8XCUTL- 5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.00	4.87	2.22	50.28
8XVQC9- 5605	9.90	0.07	0.24	14.20	0.32	0.64	44.20	-0.93	-0.42	44.20
8YNEWP- 5605	10.00	0.17	0.56	14.20	0.32	0.64	45.00	-0.13	-0.06	44.77

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
93M8AK-5601	9.50	-0.33	-1.06	13.70	-0.18	-0.37	43.90	-1.23	-0.56	43.90
9HBM8P-5605	9.70	-0.13	-0.41	14.90	1.02	2.05	41.00	-4.13	-1.88	40.62
A67QM3-5605	10.00	0.17	0.56	14.20	0.32	0.64	44.50	-0.63	-0.29	44.77
ALBX24-5601	9.50	-0.33	-1.06	14.00	0.12	0.23	42.73	-2.40	-1.09	42.73
AWBNKQ-5605	9.80	-0.03	-0.09	13.00	-0.88	-1.78	49.00	3.87	1.77	48.92
B7VEKN-5605	9.00	-0.83	-2.68	12.50	-1.38	-2.79	46.05	0.92	0.42	46.05
BLAKT2-5601	9.50	-0.33	-1.06	14.00	0.12	0.23	42.73	-2.40	-1.09	42.73
BNDFC6-5605	9.10	-0.73	-2.36	13.20	-0.68	-1.38	44.00	-1.13	-0.51	43.58
BNF7JM-5601	9.50	-0.33	-1.06	13.75	-0.13	-0.27	43.70	-1.43	-0.65	43.70
BU3TET-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.30	5.17	2.36	50.28
BWQ6DX-5601	10.00	0.17	0.56	13.60	-0.28	-0.57	47.30	2.17	0.99	47.33
BWVTKK-5601	9.50	-0.33	-1.06	15.00	1.12	2.25	39.30	-5.83	-2.66	39.30
C9EQWY-5605	5.65	-4.18	-13.54 X	8.07	-5.81	-11.73 X	44.40	-0.73	-0.33	44.44
CBHLF2-5601	9.88	0.05	0.17	14.15	0.27	0.53	44.30	-0.83	-0.38	44.29
CBK8BG-5605	9.90	0.07	0.24	13.70	-0.18	-0.37	46.30	1.17	0.54	46.27
CDVLRH-5605	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
CEKH8G-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
CK8D3U-5601	9.90	0.07	0.24	14.20	0.32	0.64	44.20	-0.93	-0.42	44.20
CP4YRB-5605	10.00	0.17	0.56	13.50	-0.38	-0.78	47.79	2.66	1.22	47.79

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
CT63LJ-5605	9.00	-0.83	-2.68	13.00	-0.88	-1.78	44.00	-1.13	-0.51	43.81
DGMH2M-5601	10.00	0.17	0.56	14.20	0.32	0.64	44.70	-0.43	-0.19	44.77
DJVX9T-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
DTGYN3-5601	9.93	0.10	0.33	14.20	0.32	0.64	44.40	-0.73	-0.33	44.37
DV8ZUQ-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.20	5.07	2.32	50.28
DXX7C3-5601	9.90	0.07	0.24	13.80	-0.08	-0.17	45.84	0.71	0.33	45.84
DZJ9VW-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
E32PNZ-5601	10.00	0.17	0.56	13.60	-0.28	-0.57	47.30	2.17	0.99	47.33
EBJT4E-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
EEFPKT-5601	10.02	0.19	0.62	14.29	0.41	0.82	45.00	-0.13	-0.06	44.52
EGL8HP-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.00	4.87	2.22	50.28
ENKWZT-5605	9.25	-0.58	-1.87	13.50	-0.38	-0.78	43.30	-1.83	-0.83	43.25
EQUAWH-5601	10.10	0.27	0.88	15.10	1.22	2.45	41.90	-3.23	-1.47	41.98
EXRC72-5605	10.00	0.17	0.56	13.60	-0.28	-0.57	47.30	2.17	0.99	47.33
EZYU6W-5605	9.80	-0.03	-0.09	12.80	-1.08	-2.19	50.00	4.87	2.22	49.96
F8RLPV-5605	9.40	-0.43	-1.38	14.40	0.52	1.04	40.90	-4.23	-1.93	40.75
FT9RHC-5605	9.20	-0.63	-2.03	12.90	-0.98	-1.99	45.50	0.37	0.17	45.49
FYZ2TB-5605	10.00	0.17	0.56	14.10	0.22	0.43	45.00	-0.13	-0.06	45.17
G6398D-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
GNEY4N-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
GQMEBU-5605	1.53	-8.30	-26.89 X	2.18	-11.70	-23.60 X	45.00	-0.13	-0.06	44.57
GVCRCRCH-5601	10.00	0.17	0.56	14.40	0.52	1.04	43.98	-1.15	-0.52	43.98
H6HH9C-5605	9.20	-0.63	-2.03	13.20	-0.68	-1.38	44.20	-0.93	-0.42	44.18
H9WT8E-5601	10.00	0.17	0.56	14.10	0.22	0.43	45.00	-0.13	-0.06	45.17
HBZNPW-5605	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
HCGKGW-5601	9.90	0.07	0.24	13.90	0.02	0.03	45.40	0.27	0.13	45.42
HGQVAQ-5605	10.50	0.67	2.18	15.00	1.12	2.25	44.00	-1.13	-0.51	44.43
HKQAVU-5605	10.00	0.17	0.56	13.90	0.02	0.03	46.00	0.87	0.40	46.01
HKRY2D-5605	9.00	-0.83	-2.68	14.00	0.12	0.23	40.00	-5.13	-2.34	40.01
HTLCEE-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
HX389B-5601	9.91	0.08	0.27	13.63	-0.25	-0.51	46.64	1.51	0.69	46.64
J2WT9D-5605	10.00	0.17	0.56	15.00	1.12	2.25	42.00	-3.13	-1.43	41.81
JG76QD-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.28	5.15	2.35	50.28
JHYBGW-5605	10.00	0.17	0.56	14.10	0.22	0.43	45.20	0.07	0.03	45.17
JLLCEC-5605	9.90	0.07	0.24	13.60	-0.28	-0.57	47.00	1.87	0.86	46.71
K28R3L-5601	10.00	0.17	0.56	14.30	0.42	0.84	44.40	-0.73	-0.33	44.37
K6BMLP-5605	10.00	0.17	0.56	12.00	-1.88	-3.80 X	56.00	10.87	4.96 X	56.44 X
KBYBGU-5601	9.80	-0.03	-0.09	14.00	0.12	0.23	44.43	-0.70	-0.32	44.43

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
KFQHZ3-5601	9.84	0.01	0.04	13.34	-0.54	-1.10	47.53	2.40	1.10	47.53
KGZKNM-5601	10.08	0.25	0.82	14.37	0.49	0.98	44.54	-0.59	-0.27	44.54
KHV7GD-5605	9.00	-0.83	-2.68	13.50	-0.38	-0.78	41.80	-3.33	-1.52	41.81
KK4HWU-5605	9.90	0.07	0.24	13.80	-0.08	-0.17	46.00	0.87	0.40	45.84
KLVELN-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
KTH48J-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.20	5.07	2.32	50.28
KWFKKD-5601	10.00	0.17	0.56	14.10	0.22	0.43	45.20	0.07	0.03	45.17
L7XP6H-5601	10.00	0.17	0.56	13.00	-0.88	-1.78	50.30	5.17	2.36	50.28
L8UPXA-5605	9.90	0.07	0.24	13.90	0.02	0.03	45.00	-0.13	-0.06	45.42
LAZKNK-5601	10.00	0.17	0.56	13.90	0.02	0.03	46.00	0.87	0.40	46.01
LNHCCR-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
LQNX3D-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
LYEH7P-5605	9.90	0.07	0.24	13.20	-0.68	-1.38	48.60	3.47	1.59	48.59
MAY6W7-5605	9.50	-0.33	-1.06	13.50	-0.38	-0.78	44.70	-0.43	-0.19	44.72
MBUZTA-5605	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
MM46QA-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
MUN9WR-5601	9.89	0.06	0.20	14.29	0.41	0.82	43.80	-1.33	-0.60	43.80
MVEPU7-5601	9.70	-0.13	-0.41	13.48	-0.40	-0.82	46.00	0.87	0.40	46.02
NDBG7R-5605	10.50	0.67	2.18	14.60	0.72	1.44	46.00	0.87	0.40	45.99

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
NE46R9-5605	9.70	-0.13	-0.41	13.60	-0.28	-0.57	45.50	0.37	0.17	45.50
NEMGJ9-5605	9.67	-0.16	-0.51	13.89	0.01	0.01	44.12	-1.01	-0.46	44.12
NFXJ68-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
NK9AEL-5605	1.68	-8.15	-26.40 X	2.33	-11.55	-23.30 X	46.10	0.97	0.44	46.14
NKEQT8-5605	9.00	-0.83	-2.68	14.00	0.12	0.23	40.00	-5.13	-2.34	40.01
NMEPU6-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.58	0.45	0.21	45.58
NUHERC-5601	10.34	0.51	1.66	13.90	0.02	0.03	48.00	2.87	1.31	48.06
NUXWAN-5605	9.90	0.07	0.24	14.20	0.32	0.64	44.00	-1.13	-0.51	44.20
NXDR79-5605	10.19	0.36	1.18	14.25	0.37	0.74	46.00	0.87	0.40	45.65
NXHPLQ-5601	10.00	0.17	0.56	13.80	-0.08	-0.17	46.43	1.30	0.60	46.44
NYUPX8-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
PC99FJ-5605	10.00	0.17	0.56	14.20	0.32	0.64	44.80	-0.33	-0.15	44.77
PDN9Y9-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
PUR379-5605	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
PV8YX9-5601	9.90	0.07	0.24	14.40	0.52	1.04	43.43	-1.70	-0.77	43.43
Q2QPVM-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
Q3JKHV-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
Q6QZRM-5601	10.10	0.27	0.88	14.50	0.62	1.24	44.20	-0.93	-0.42	44.15
Q6RPX6-5605	9.00	-0.83	-2.68	12.00	-1.88	-3.80 X	48.00	2.87	1.31	48.59

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
QANG4G-5601	9.85	0.02	0.07	13.92	0.04	0.07	45.04	-0.09	-0.04	45.04
QHCD3W-5601	10.02	0.19	0.62	14.03	0.15	0.29	45.58	0.45	0.21	45.58
QM8YY7-5601	10.03	0.20	0.66	14.23	0.35	0.70	44.79	-0.34	-0.15	44.82
R4XU24-5601	9.00	-0.83	-2.68	13.00	-0.88	-1.78	43.80	-1.33	-0.60	43.81
R8QNJH-5605	6.76	-3.07	-9.94 X	9.29	-4.59	-9.27 X	46.70	1.57	0.72	46.69
R97M48-5601	10.00	0.17	0.56	14.60	0.72	1.44	43.23	-1.90	-0.87	43.23
REBQQK-5605	10.00	0.17	0.56	14.00	0.12	0.23	46.00	0.87	0.40	45.58
RGDLAM-5605	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
RPRBBG-5601	9.90	0.07	0.24	13.80	-0.08	-0.17	45.80	0.67	0.31	45.84
RR2BD3-5605	9.81	-0.02	-0.06	13.93	0.05	0.09	45.00	-0.13	-0.06	44.77
RRYQHM-5601	10.16	0.33	1.08	14.55	0.67	1.34	44.30	-0.83	-0.38	44.29
TADLBL-5601	10.00	0.17	0.56	14.20	0.32	0.64	44.80	-0.33	-0.15	44.77
TE6WKJ-5605	9.80	-0.03	-0.09	14.50	0.62	1.24	43.00	-2.13	-0.97	42.52
TZ9EVL-5601	9.88	0.05	0.17	14.74	0.86	1.72	42.10	-3.03	-1.38	42.09
U7BDY3-5605	10.16	0.33	1.08	14.22	0.34	0.68	46.00	0.87	0.40	45.58
U7UUYH-5605	9.75	-0.08	-0.25	14.00	0.12	0.23	44.00	-1.13	-0.51	44.14
UDU9M6-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.58	0.45	0.21	45.58
UEKF6G-5605	2.53	-7.30	-23.65 X	3.50	-10.38	-20.94 X	46.30	1.17	0.54	46.29
UJEA3H-5605	10.00	0.17	0.56	13.00	-0.88	-1.78	50.30	5.17	2.36	50.28

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
ULKUR4-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
UVT78L-5605	9.80	-0.03	-0.09	13.70	-0.18	-0.37	45.70	0.57	0.26	45.67
UYQMKF-5605	10.00	0.17	0.56	13.80	-0.08	-0.17	46.40	1.27	0.58	46.44
V6YY62-5605	9.68	-0.15	-0.48	12.75	-1.13	-2.29	46.90	1.77	0.81	49.40
VMT78J-5601	9.90	0.07	0.24	14.20	0.32	0.64	44.20	-0.93	-0.42	44.20
VV6FGX-5601	10.00	0.17	0.56	14.10	0.22	0.43	45.00	-0.13	-0.06	45.17
VXUUZG-5605	9.90	0.07	0.24	14.00	0.12	0.23	45.00	-0.13	-0.06	45.00
W4ZMUC-5601	9.50	-0.33	-1.06	13.40	-0.48	-0.98	45.00	-0.13	-0.06	45.15
W69MJY-5605	10.00	0.17	0.56	14.20	0.32	0.64	44.80	-0.33	-0.15	44.77
W8YYPC-5601	9.50	-0.33	-1.06	13.49	-0.39	-0.80	44.80	-0.33	-0.15	44.77
WBYAJQ-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
WKM294-5605	9.90	0.07	0.24	14.10	0.22	0.43	44.60	-0.53	-0.24	44.60
WQTD8V-5605	9.25	-0.58	-1.87	13.00	-0.88	-1.78	43.80	-1.33	-0.60	45.36
WTT6VE-5605	9.00	-0.83	-2.68	13.50	-0.38	-0.78	42.00	-3.13	-1.43	41.81
X949WZ-5601	10.00	0.17	0.56	14.40	0.52	1.04	44.00	-1.13	-0.51	43.98
XC4G2A-5601	9.60	-0.23	-0.74	13.80	-0.08	-0.17	44.00	-1.13	-0.51	44.08
XJMK9C-5601	10.00	0.17	0.56	13.40	-0.48	-0.98	48.30	3.17	1.45	48.27
XR34QQ-5605							45.00	-0.13	-0.06	X
XT9NFC-5601	9.50	-0.33	-1.06	13.50	-0.38	-0.78	44.70	-0.43	-0.19	44.72

TABLE 1
Stain A, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
Y2HDUA-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.00	-0.13	-0.06	45.58
YGDUJ9-5601	10.00	0.17	0.56	14.00	0.12	0.23	45.60	0.47	0.22	45.58
YHABV6-5605	9.00	-0.83	-2.68	14.00	0.12	0.23	40.01	-5.12	-2.33	40.01
YHNPW68-5605	8.70	-1.13	-3.65 X	12.70	-1.18	-2.39	43.20	-1.93	-0.88	43.24
YX367B-5605	4.00	-5.83	-18.88 X	5.79	-8.09	-16.32 X	43.70	-1.43	-0.65	43.70
Z2G3BC-5605	10.00	0.17	0.56	13.80	-0.08	-0.17	46.00	0.87	0.40	46.44
Z7QBKU-5605	9.80	-0.03	-0.09	14.00	0.12	0.23	44.00	-1.13	-0.51	44.43
Z83TX8-5601	9.88	0.05	0.17	14.70	0.82	1.64	42.20	-2.93	-1.34	42.23
Z9Y9A6-5601	9.90	0.07	0.24	13.90	0.02	0.03	45.00	-0.13	-0.06	45.42
ZE624Z-5605	10.10	0.27	0.88	13.00	-0.88	-1.78	51.00	5.87	2.68	50.98
ZLN828-5605	9.60	-0.23	-0.74	13.59	-0.29	-0.59	44.98	-0.15	-0.07	44.94
ZP3679-5605	9.75	-0.08	-0.25	13.85	-0.03	-0.07	44.71	-0.42	-0.19	44.75
ZXHNP9-5601	10.00	0.17	0.56	13.60	-0.28	-0.57	47.30	2.17	0.99	47.33
ZYCAJY-5601	9.00	-0.83	-2.68	14.00	0.12	0.23	40.00	-5.13	-2.34	40.01
Grand Mean	9.83			13.88			45.13			45.16
Standard Deviation	0.31			0.50			2.19			2.22
Participants Included in calculations	177			176			184			183
Participants excluded from calculations (indicated by X)	7			8			1			2

Stain A Preparation Angle: 43.0°

TABLE 1
Stain B

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
2B2TBA- 5605	6.00	0.14	0.79	17.00	1.44	1.85	20.70	-1.35	-0.99	20.67
2QBHNB- 5601	6.40	0.54	3.12 X	15.80	0.24	0.31	23.90	1.85	1.36	23.90
2UVQZQ- 5605	5.50	-0.36	-2.12	15.00	-0.56	-0.72	22.00	-0.05	-0.03	21.51
2XCUJ8- 5605	5.30	-0.56	-3.29 X	13.80	-1.76	-2.27	23.00	0.95	0.70	22.59
2XF9YT- 5601	5.80	-0.06	-0.37	16.10	0.54	0.69	21.10	-0.95	-0.69	21.12
33KATV- 5605	5.80	-0.06	-0.37	16.40	0.84	1.08	20.70	-1.35	-0.99	20.71
3CA32L- 5605	6.00	0.14	0.79	15.50	-0.06	-0.08	22.80	0.75	0.55	22.77
3LYTME- 5601	5.91	0.05	0.27	16.17	0.61	0.78	21.40	-0.65	-0.47	21.44
3RJ9TW- 5601	6.00	0.14	0.79	17.00	1.44	1.85	20.60	-1.45	-1.06	20.67
3V34U4- 5601	5.60	-0.26	-1.54	14.80	-0.76	-0.98	22.20	0.15	0.11	22.23
46QA9M- 5601	5.00	-0.86	-5.03 X	15.50	-0.06	-0.08	18.00	-4.05	-2.97	18.82
4DEAGJ- 5605	5.90	0.04	0.21	16.30	0.74	0.95	21.10	-0.95	-0.69	21.22
4LR293- 5605	5.90	0.04	0.21	15.20	-0.36	-0.47	22.90	0.85	0.63	22.84
4Q3EQ2- 5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
4U2QL2- 5601	5.60	-0.26	-1.54	15.20	-0.36	-0.47	22.00	-0.05	-0.03	21.62
4YF94H- 5605	5.80	-0.06	-0.37	15.00	-0.56	-0.72	23.00	0.95	0.70	22.75
6F327V- 5605	5.60	-0.26	-1.54	15.20	-0.36	-0.47	21.60	-0.45	-0.33	21.62
6JJ9UU- 5601	6.10	0.24	1.38	14.00	-1.56	-2.01	44.00	21.95	16.11 X	25.83
6NXYYP- 5601	6.00	0.14	0.79	15.50	-0.06	-0.08	23.00	0.95	0.70	22.77

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
6REX4Q- 5605	5.90	0.04	0.21	15.00	-0.56	-0.72	23.00	0.95	0.70	23.16
6UH7E9- 5601	5.90	0.04	0.21	16.40	0.84	1.08	21.10	-0.95	-0.69	21.09
74PZA2- 5601	5.91	0.05	0.27	16.06	0.50	0.64	21.60	-0.45	-0.33	21.59
777TXA- 5605	5.92	0.06	0.33	15.40	-0.17	-0.21	23.00	0.95	0.70	22.62
78NEWR- 5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
79VU4X- 5605	5.86	0.00	-0.02	15.33	-0.23	-0.30	22.47	0.42	0.31	22.47
7AAQNP- 5605	5.80	-0.06	-0.37	15.10	-0.46	-0.59	23.00	0.95	0.70	22.59
7B463L- 5605	6.00	0.14	0.79	16.50	0.94	1.21	21.30	-0.75	-0.55	21.32
7L78KX- 5601	5.80	-0.06	-0.37	14.00	-1.56	-2.01	24.50	2.45	1.80	24.47
7PJ8HP- 5605	5.00	-0.86	-5.03 X	15.00	-0.56	-0.72	19.00	-3.05	-2.24	19.47
7QGHB8- 5605	5.90	0.04	0.21	15.80	0.24	0.31	22.00	-0.05	-0.03	21.93
7XHPYM- 5605	5.70	-0.16	-0.96	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.58
7YTG6H- 5601	5.80	-0.06	-0.37	16.00	0.44	0.57	21.25	-0.80	-0.58	21.25
89QW9R- 5605	5.50	-0.36	-2.12	15.30	-0.26	-0.34	21.10	-0.95	-0.69	21.07
8CAR9Y- 5601	6.00	0.14	0.79	16.70	1.14	1.47	21.00	-1.05	-0.77	21.06
8JXE46- 5605	5.60	-0.26	-1.54	15.90	0.34	0.44	20.60	-1.45	-1.06	20.62
8XCUTL- 5601	6.00	0.14	0.79	14.00	-1.56	-2.01	25.00	2.95	2.17	25.38
8XVQC9- 5605	5.80	-0.06	-0.37	15.20	-0.36	-0.47	22.40	0.35	0.26	22.43
8YNEWP- 5605	5.90	0.04	0.21	16.50	0.94	1.21	21.00	-1.05	-0.77	20.95

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
93M8AK-5601	5.70	-0.16	-0.96	16.00	0.44	0.57	20.90	-1.15	-0.84	20.87
9HBM8P-5605	6.20	0.34	1.96	15.80	0.24	0.31	23.00	0.95	0.70	23.10
A67QM3-5605	5.80	-0.06	-0.37	15.10	-0.46	-0.59	22.80	0.75	0.55	22.59
ALBX24-5601	5.50	-0.36	-2.12	15.00	-0.56	-0.72	21.51	-0.54	-0.39	21.51
AWBNKQ-5605	5.40	-0.46	-2.70	14.60	-0.96	-1.24	21.70	-0.35	-0.25	21.71
B7VEKN-5605	5.00	-0.86	-5.03 X	14.50	-1.06	-1.37	20.17	-1.88	-1.38	20.17
BLAKT2-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.02	-0.03	-0.02	22.02
BNDFC6-5605	5.70	-0.16	-0.96	14.90	-0.66	-0.85	23.00	0.95	0.70	22.49
BNF7JM-5601	5.50	-0.36	-2.12	16.50	0.94	1.21	19.47	-2.58	-1.89	19.47
BU3TET-5601	6.00	0.14	0.79	14.00	-1.56	-2.01	25.40	3.35	2.46	25.38
BWQ6DX-5601	5.90	0.04	0.21	15.90	0.34	0.44	21.78	-0.27	-0.20	21.78
BWVKTK-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
C9EQWY-5605	4.06	-1.80	-10.51 X	9.92	-5.64	-7.27 X	24.20	2.15	1.58	24.16
CBHLF2-5601	5.89	0.03	0.15	16.10	0.54	0.69	21.50	-0.55	-0.40	21.46
CBK8BG-5605	5.90	0.04	0.21	14.70	-0.86	-1.11	23.70	1.65	1.21	23.66
CDVLRH-5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
CEKH8G-5601	5.50	-0.36	-2.12	16.00	0.44	0.57	20.10	-1.95	-1.43	20.11
CK8D3U-5601	5.60	-0.26	-1.54	16.70	1.14	1.47	19.60	-2.45	-1.80	19.59
CP4YRB-5605	6.10	0.24	1.38	15.30	-0.26	-0.34	23.49	1.44	1.06	23.50

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
CT63LJ- 5605	5.00	-0.86	-5.03 X	15.00	-0.56	-0.72	23.00	0.95	0.70	19.47
DGMH2M- 5601	6.00	0.14	0.79	16.60	1.04	1.34	21.20	-0.85	-0.62	21.19
DJVX9T- 5601	6.00	0.14	0.79	15.50	-0.06	-0.08	23.00	0.95	0.70	22.77
DTGYN3- 5601	5.86	0.00	-0.02	16.49	0.93	1.20	20.80	-1.25	-0.91	20.82
DV8ZUQ- 5601	6.00	0.14	0.79	14.00	-1.56	-2.01	25.40	3.35	2.46	25.38
DXX7C3- 5601	5.80	-0.06	-0.37	15.10	-0.46	-0.59	22.59	0.54	0.40	22.59
DZJ9VW- 5605	6.00	0.14	0.79	15.50	-0.06	-0.08	23.00	0.95	0.70	22.77
E32PNZ- 5601	5.80	-0.06	-0.37	16.00	0.44	0.57	21.30	-0.75	-0.55	21.25
EBJT4E- 5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
EEFPKT- 5601	5.81	-0.05	-0.31	15.66	0.10	0.13	22.00	-0.05	-0.03	21.78
EGL8HP- 5601	6.00	0.14	0.79	14.00	-1.56	-2.01	25.00	2.95	2.17	25.38
ENKWZT- 5605	5.50	-0.36	-2.12	14.50	-1.06	-1.37	22.30	0.25	0.19	22.29
EQUAWH- 5601	5.60	-0.26	-1.54	15.40	-0.16	-0.21	21.30	-0.75	-0.55	21.32
EXRC72- 5605	5.80	-0.06	-0.37	16.50	0.94	1.21	20.60	-1.45	-1.06	20.58
EZYU6W- 5605	5.80	-0.06	-0.37	13.60	-1.96	-2.53	25.00	2.95	2.17	25.24
F8RLPV- 5605	5.90	0.04	0.21	15.40	-0.16	-0.21	22.70	0.65	0.48	22.53
FT9RHC- 5605	5.70	-0.16	-0.96	15.50	-0.06	-0.08	21.60	-0.45	-0.33	21.58
FYZ2TB- 5605	6.00	0.14	0.79	15.90	0.34	0.44	22.00	-0.05	-0.03	22.17
G6398D- 5601	6.00	0.14	0.79	15.00	-0.56	-0.72	23.60	1.55	1.14	23.58

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
GNEY4N-5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
GQMEBU-5605	0.97	-4.89	-28.51 X	2.47	-13.09	-16.88 X	23.00	0.95	0.70	23.12
GVCRCH-5601	6.00	0.14	0.79	16.50	0.94	1.21	21.32	-0.73	-0.53	21.32
H6HH9C-5605	5.60	-0.26	-1.54	14.40	-1.16	-1.50	22.90	0.85	0.63	22.89
H9WT8E-5601	5.80	-0.06	-0.37	16.50	0.94	1.21	21.00	-1.05	-0.77	20.58
HBZNPW-5605	5.80	-0.06	-0.37	16.40	0.84	1.08	20.70	-1.35	-0.99	20.71
HCGKGW-5601	6.00	0.14	0.79	15.90	0.34	0.44	22.20	0.15	0.11	22.17
HGQVAQ-5605	6.00	0.14	0.79	17.00	1.44	1.85	21.00	-1.05	-0.77	20.67
HKQAVU-5605	5.80	-0.06	-0.37	15.40	-0.16	-0.21	22.00	-0.05	-0.03	22.12
HKRY2D-5605	5.00	-0.86	-5.03 X	14.00	-1.56	-2.01	20.00	-2.05	-1.50	20.92
HTLCEE-5605	6.00	0.14	0.79	14.66	-0.90	-1.16	24.00	1.95	1.43	24.16
HX389B-5601	6.16	0.30	1.72	14.97	-0.59	-0.76	24.30	2.25	1.65	24.30
J2WT9D-5605	6.00	0.14	0.79	17.00	1.44	1.85	21.00	-1.05	-0.77	20.67
JG76QD-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
JHYBGW-5605	5.90	0.04	0.21	15.00	-0.56	-0.72	23.20	1.15	0.85	23.16
JLLCEC-5605	5.90	0.04	0.21	14.90	-0.66	-0.85	23.00	0.95	0.70	23.33
K28R3L-5601	6.00	0.14	0.79	15.50	-0.06	-0.08	22.80	0.75	0.55	22.77
K6BMLP-5605	6.00	0.14	0.79	14.00	-1.56	-2.01	25.00	2.95	2.17	25.38
KBYBGU-5601	5.80	-0.06	-0.37	16.00	0.44	0.57	21.25	-0.80	-0.58	21.25

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
KFQHZ3-5601	5.98	0.12	0.68	16.94	1.38	1.78	20.67	-1.38	-1.01	20.67
KGZKNM-5601	6.05	0.19	1.08	16.63	1.07	1.38	21.33	-0.72	-0.53	21.33
KHV7GD-5605	5.50	-0.36	-2.12	14.00	-1.56	-2.01	23.10	1.05	0.77	23.13
KK4HWU-5605	5.80	-0.06	-0.37	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.97
KLVELN-5605	6.00	0.14	0.79	15.00	-0.56	-0.72	24.00	1.95	1.43	23.58
KTH48J-5601	6.00	0.14	0.79	15.00	-0.56	-0.72	23.50	1.45	1.07	23.58
KWFKKD-5601	5.90	0.04	0.21	16.30	0.74	0.95	21.20	-0.85	-0.62	21.22
L7XP6H-5601	5.80	-0.06	-0.37	14.00	-1.56	-2.01	24.50	2.45	1.80	24.47
L8UPXA-5605	5.80	-0.06	-0.37	15.00	-0.56	-0.72	23.00	0.95	0.70	22.75
LAZKNK-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
LNHCCR-5601	5.40	-0.46	-2.70	16.00	0.44	0.57	19.70	-2.35	-1.72	19.72
LQNX3D-5605	5.50	-0.36	-2.12	16.00	0.44	0.57	20.00	-2.05	-1.50	20.11
LYEH7P-5605	5.80	-0.06	-0.37	14.50	-1.06	-1.37	23.60	1.55	1.14	23.58
MAY6W7-5605	5.50	-0.36	-2.12	16.00	0.44	0.57	20.10	-1.95	-1.43	20.11
MBUZTA-5605	6.00	0.14	0.79	15.50	-0.06	-0.08	22.00	-0.05	-0.03	22.77
MM46QA-5601	5.80	-0.06	-0.37	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.97
MUN9WR-5601	5.80	-0.06	-0.37	16.28	0.72	0.93	20.90	-1.15	-0.84	20.87
MVEPU7-5601	6.26	0.40	2.31	15.16	-0.40	-0.52	24.40	2.35	1.73	24.39
NDBG7R-5605	6.20	0.34	1.96	16.70	1.14	1.47	22.00	-0.05	-0.03	21.79

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
NE46R9-5605	5.80	-0.06	-0.37	15.70	0.14	0.18	21.60	-0.45	-0.33	21.68
NEMGJ9-5605	5.91	0.05	0.27	16.29	0.73	0.94	21.27	-0.78	-0.57	21.27
NFXJ68-5605	6.00	0.14	0.79	14.80	-0.76	-0.98	24.00	1.95	1.43	23.92
NK9AEL-5605	1.02	-4.84	-28.22 X	2.56	-13.00	-16.76 X	23.50	1.45	1.07	23.48
NKEQT8-5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
NMEPU6-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.02	-0.03	-0.02	22.02
NUHERC-5601	5.70	-0.16	-0.96	16.00	0.44	0.57	21.00	-1.05	-0.77	20.87
NUXWAN-5605	5.80	-0.06	-0.37	16.00	0.44	0.57	21.00	-1.05	-0.77	21.25
NXDR79-5605	5.98	0.12	0.68	16.49	0.93	1.20	21.00	-1.05	-0.77	21.26
NXHPLQ-5601	5.80	-0.06	-0.37	15.30	-0.26	-0.34	22.27	0.22	0.16	22.28
NYUPX8-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
PC99FJ-5605	6.10	0.24	1.38	15.10	-0.46	-0.59	23.80	1.75	1.29	23.83
PDN9Y9-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
PUR379-5605	5.80	-0.06	-0.37	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.97
PV8YX9-5601	5.90	0.04	0.21	16.30	0.74	0.95	21.22	-0.83	-0.61	21.22
Q2QPVM-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
Q3JKHV-5605	5.80	-0.06	-0.37	16.60	1.04	1.34	20.00	-2.05	-1.50	20.45
Q6QZRM-5601	6.00	0.14	0.79	15.00	-0.56	-0.72	23.60	1.55	1.14	23.58
Q6RPX6-5605	5.00	-0.86	-5.03 X	14.00	-1.56	-2.01	21.00	-1.05	-0.77	20.92

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
QANG4G-5601	5.79	-0.07	-0.43	15.07	-0.49	-0.63	22.59	0.54	0.40	22.59
QHCD3W-5601	6.11	0.25	1.43	16.19	0.63	0.81	22.17	0.12	0.09	22.17
QM8YY7-5601	6.03	0.17	0.97	16.08	0.52	0.67	22.02	-0.03	-0.02	22.02
R4XU24-5601	5.00	-0.86	-5.03 X	17.00	1.44	1.85	17.10	-4.95	-3.63 X	17.10 X
R8QNJH-5605	4.29	-1.57	-9.17 X	11.51	-4.05	-5.22 X	21.90	-0.15	-0.11	21.88
R97M48-5601	5.80	-0.06	-0.37	16.60	1.04	1.34	20.45	-1.60	-1.17	20.45
REBQQK-5605	5.80	-0.06	-0.37	15.60	0.04	0.05	22.00	-0.05	-0.03	21.83
RGDLAM-5605	6.00	0.14	0.79	16.50	0.94	1.21	21.30	-0.75	-0.55	21.32
RPRBBG-5601	5.90	0.04	0.21	15.20	-0.36	-0.47	22.80	0.75	0.55	22.84
RR2BD3-5605	5.79	-0.07	-0.43	14.99	-0.57	-0.74	23.00	0.95	0.70	22.72
RRYQHM-5601	5.95	0.09	0.50	15.86	0.30	0.39	22.00	-0.05	-0.03	22.03
TADLBL-5601	5.90	0.04	0.21	15.30	-0.26	-0.34	22.70	0.65	0.48	22.68
TE6WKJ-5605	6.00	0.14	0.79	15.70	0.14	0.18	22.00	-0.05	-0.03	22.47
TZ9EVL-5601	5.70	-0.16	-0.96	16.36	0.80	1.03	20.40	-1.65	-1.21	20.39
U7BDY3-5605	6.10	0.23	1.35	15.75	0.19	0.24	23.00	0.95	0.70	22.77
U7UUYH-5605	5.75	-0.11	-0.66	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.78
UDU9M6-5601	7.00	1.14	6.62 X	19.00	3.44	4.43 X	21.61	-0.44	-0.32	21.62
UEKF6G-5605	1.13	-4.73	-27.58 X	2.90	-12.66	-16.32 X	22.90	0.85	0.63	22.93
UJEA3H-5605	5.90	0.04	0.21	14.00	-1.56	-2.01	24.90	2.85	2.09	24.92

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
ULKUR4-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
UVT78L-5605	5.80	-0.06	-0.37	14.70	-0.86	-1.11	23.20	1.15	0.85	23.24
UYQMKF-5605	5.90	0.04	0.21	15.00	-0.56	-0.72	23.20	1.15	0.85	23.16
V6YY62-5605	5.95	0.09	0.50	14.66	-0.90	-1.16	23.70	1.65	1.21	23.95
VMT78J-5601	5.80	-0.06	-0.37	16.10	0.54	0.69	21.12	-0.93	-0.68	21.12
VV6FGX-5601	6.00	0.14	0.79	14.80	-0.76	-0.98	24.00	1.95	1.43	23.92
VXUUZG-5605	5.80	-0.06	-0.37	16.30	0.74	0.95	20.80	-1.25	-0.91	20.84
W4ZMUC-5601	5.70	-0.16	-0.96	15.60	0.04	0.05	21.00	-1.05	-0.77	21.43
W69MJY-5605	5.90	0.04	0.21	16.40	0.84	1.08	21.00	-1.05	-0.77	21.09
W8YYPC-5601	5.50	-0.36	-2.12	15.67	0.11	0.14	20.50	-1.55	-1.13	20.55
WBYAJQ-5601	6.00	0.14	0.79	17.00	1.44	1.85	20.70	-1.35	-0.99	20.67
WKM294-5605	5.80	-0.06	-0.37	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.97
WQTD8V-5605	5.50	-0.36	-2.12	14.50	-1.06	-1.37	22.30	0.25	0.19	22.29
WTT6VE-5605	5.00	-0.86	-5.03 X	16.00	0.44	0.57	18.00	-4.05	-2.97	18.21
X949WZ-5601	5.80	-0.06	-0.37	15.50	-0.06	-0.08	22.00	-0.05	-0.03	21.97
XC4G2A-5601	5.80	-0.06	-0.37	14.80	-0.76	-0.98	23.00	0.95	0.70	23.07
XJMK9C-5601	6.00	0.14	0.79	14.74	-0.82	-1.06	24.00	1.95	1.43	24.02
XR34QQ-5605							21.00	-1.05	-0.77	X
XT9NFC-5601	5.00	-0.86	-5.03 X	15.50	-0.06	-0.08	18.80	-3.25	-2.38	18.82

TABLE 1
Stain B, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
Y2HDUA-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
YGDUJ9-5601	5.70	-0.16	-0.96	15.80	0.24	0.31	21.10	-0.95	-0.69	21.15
YHABV6-5605	5.00	-0.86	-5.03 X	16.00	0.44	0.57	18.21	-3.84	-2.82	18.21
YHNPW68-5605	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
YX367B-5605	2.57	-3.29	-19.19 X	6.67	-8.89	-11.46 X	22.70	0.65	0.48	22.66
Z2G3BC-5605	5.80	-0.06	-0.37	16.40	0.84	1.08	21.00	-1.05	-0.77	20.71
Z7QBKU-5605	6.00	0.14	0.79	14.70	-0.86	-1.11	24.00	1.95	1.43	24.09
Z83TX8-5601	6.11	0.25	1.43	16.17	0.61	0.78	22.20	0.15	0.11	22.20
Z9Y9A6-5601	5.90	0.04	0.21	15.10	-0.46	-0.59	22.90	0.85	0.63	23.00
ZE624Z-5605	5.90	0.04	0.21	15.00	-0.56	-0.72	23.10	1.05	0.77	23.16
ZLN828-5605	5.62	-0.24	-1.42	15.30	-0.26	-0.34	21.56	-0.49	-0.36	21.55
ZP3679-5605	5.66	-0.20	-1.19	15.27	-0.29	-0.38	21.75	-0.30	-0.22	21.76
ZXHNP9-5601	5.60	-0.26	-1.54	15.00	-0.56	-0.72	21.90	-0.15	-0.11	21.92
ZYCAJY-5601	6.00	0.14	0.79	16.00	0.44	0.57	22.00	-0.05	-0.03	22.02
Grand Mean	5.86			15.56			22.05			22.06
Standard Deviation	0.17			0.78			1.36			1.38
Participants Included in calculations	165			177			183			183
Participants excluded from calculations (indicated by X)	19			7			2			2

Stain B Preparation Angle: 21.1°

TABLE 1
Stain C

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
2B2TBA- 5605	5.80	0.19	0.69	20.80	1.40	1.66	16.20	-0.69	-0.62	16.19
2QBHNB- 5601	6.20	0.59	2.11	19.00	-0.40	-0.47	19.10	2.21	1.99	19.05
2UVQZQ- 5605	5.00	-0.61	-2.14	19.00	-0.40	-0.47	15.00	-1.89	-1.70	15.26
2XCUJ8- 5605	5.50	-0.11	-0.37	17.40	-2.00	-2.36	18.00	1.11	1.00	18.43
2XF9YT- 5601	5.60	-0.01	-0.02	19.80	0.40	0.48	16.40	-0.49	-0.44	16.43
33KATV- 5605	5.80	0.19	0.69	20.10	0.70	0.83	16.80	-0.09	-0.08	16.77
3CA32L- 5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
3LYTME- 5601	5.75	0.14	0.51	19.82	0.42	0.50	16.90	0.01	0.01	16.86
3RJ9TW- 5601	6.00	0.39	1.40	20.00	0.60	0.71	17.45	0.56	0.50	17.46
3V34U4- 5601	5.40	-0.21	-0.73	19.20	-0.20	-0.23	16.30	-0.59	-0.53	16.33
46QA9M- 5601	5.50	-0.11	-0.37	20.00	0.60	0.71	15.00	-1.89	-1.70	15.96
4DEAGJ- 5605	5.50	-0.11	-0.37	17.30	-2.10	-2.48	18.50	1.61	1.45	18.54
4LR293- 5605	5.70	0.09	0.34	19.80	0.40	0.48	16.90	0.01	0.01	16.73
4Q3EQ2- 5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
4U2QL2- 5601	5.30	-0.31	-1.08	18.90	-0.50	-0.59	16.00	-0.89	-0.80	16.29
4YF94H- 5605	5.80	0.19	0.69	19.00	-0.40	-0.47	18.00	1.11	1.00	17.77
6F327V- 5605	5.40	-0.21	-0.73	17.60	-1.80	-2.13	17.90	1.01	0.91	17.87
6JJ9UU- 5601	5.70	0.09	0.34	18.20	-1.20	-1.42	31.00	14.11	12.69 X	18.25
6NXYYP- 5601	5.80	0.19	0.69	19.50	0.10	0.12	17.00	0.11	0.10	17.30

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
6REX4Q- 5605	5.90	0.29	1.04	19.40	0.00	0.00	18.00	1.11	1.00	17.71
6UH7E9- 5601	5.50	-0.11	-0.37	20.30	0.90	1.07	15.70	-1.19	-1.07	15.72
74PZA2- 5601	5.62	0.01	0.05	19.98	0.58	0.69	16.30	-0.59	-0.53	16.34
777TXA- 5605	5.53	-0.07	-0.25	19.35	-0.05	-0.06	17.00	0.11	0.10	16.62
78NEWR- 5601	6.00	0.39	1.40	20.00	0.60	0.71	17.50	0.61	0.55	17.46
79VU4X- 5605	5.57	-0.04	-0.12	19.75	0.35	0.42	16.38	-0.51	-0.46	16.38
7AAQNP- 5605	5.60	-0.01	-0.02	19.90	0.50	0.59	16.00	-0.89	-0.80	16.34
7B463L- 5605	6.00	0.39	1.40	20.00	0.60	0.71	17.50	0.61	0.55	17.46
7L78KX- 5601	5.70	0.09	0.34	19.00	-0.40	-0.47	17.50	0.61	0.55	17.46
7PJ8HP- 5605	5.00	-0.61	-2.14	18.00	-1.40	-1.65	16.00	-0.89	-0.80	16.13
7QGHB8- 5605	5.50	-0.11	-0.37	19.80	0.40	0.48	16.00	-0.89	-0.80	16.13
7XHPYM- 5605	5.10	-0.51	-1.79	18.50	-0.90	-1.06	16.00	-0.89	-0.80	16.00
7YTG6H- 5601	5.00	-0.61	-2.14	20.00	0.60	0.71	14.48	-2.41	-2.17	14.48
89QW9R- 5605	5.40	-0.21	-0.73	18.90	-0.50	-0.59	16.60	-0.29	-0.26	16.60
8CAR9Y- 5601	5.80	0.19	0.69	20.20	0.80	0.95	17.00	0.11	0.10	16.69
8JXE46- 5605	5.40	-0.21	-0.73	19.40	0.00	0.00	16.20	-0.69	-0.62	16.16
8XCUTL- 5601	5.50	-0.11	-0.37	22.50	3.10	3.67 X	14.00	-2.89	-2.60	14.15
8XVQC9- 5605	5.60	-0.01	-0.02	18.60	-0.80	-0.94	17.50	0.61	0.55	17.52
8YNEWP- 5605	5.80	0.19	0.69	20.00	0.60	0.71	17.00	0.11	0.10	16.86

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
93M8AK- 5601	5.40	-0.21	-0.73	19.90	0.50	0.59	15.70	-1.19	-1.07	15.75
9HBM8P- 5605	6.10	0.49	1.75	20.00	0.60	0.71	18.00	1.11	1.00	17.76
A67QM3- 5605	5.70	0.09	0.34	18.20	-1.20	-1.42	18.20	1.31	1.18	18.25
ALBX24- 5601	5.00	-0.61	-2.14	18.25	-1.15	-1.36	15.90	-0.99	-0.89	15.90
AWBNKQ- 5605	5.20	-0.41	-1.43	18.60	-0.80	-0.94	16.20	-0.69	-0.62	16.23
B7VEKN- 5605	5.00	-0.61	-2.14	17.50	-1.90	-2.25	16.60	-0.29	-0.26	16.60
BLAKT2- 5601	5.00	-0.61	-2.14	20.00	0.60	0.71	14.48	-2.41	-2.17	14.48
BNDFC6- 5605	5.50	-0.11	-0.37	18.20	-1.20	-1.42	18.00	1.11	1.00	17.59
BNF7JM- 5601	5.25	-0.36	-1.26	20.00	0.60	0.71	15.22	-1.67	-1.50	15.22
BU3TET- 5601	5.50	-0.11	-0.37	17.00	-2.40	-2.84	18.90	2.01	1.81	18.88
BWQ6DX- 5601	5.80	0.19	0.69	19.60	0.20	0.24	17.21	0.32	0.29	17.21
BWVTKK- 5601	6.00	0.39	1.40	20.00	0.60	0.71	17.50	0.61	0.55	17.46
C9EQWY- 5605	4.12	-1.49	-5.26 X	13.05	-6.35	-7.51 X	18.40	1.51	1.36	18.40
CBHLF2- 5601	5.80	0.19	0.69	19.99	0.59	0.70	16.90	0.01	0.01	16.87
CBK8BG- 5605	5.60	-0.01	-0.02	17.00	-2.40	-2.84	19.20	2.31	2.08	19.23
CDVLRH- 5605	6.00	0.39	1.40	20.00	0.60	0.71	17.00	0.11	0.10	17.46
CEKH8G- 5601	5.50	-0.11	-0.37	20.00	0.60	0.71	15.90	-0.99	-0.89	15.96
CK8D3U- 5601	5.70	0.09	0.34	20.20	0.80	0.95	16.40	-0.49	-0.44	16.39
CP4YRB- 5605	5.70	0.09	0.34	19.00	-0.40	-0.47	17.45	0.56	0.50	17.46

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
CT63LJ- 5605	5.00	-0.61	-2.14	18.00	-1.40	-1.65	16.00	-0.89	-0.80	16.13
DGMH2M- 5601	5.80	0.19	0.69	20.00	0.60	0.71	16.90	0.01	0.01	16.86
DJVX9T- 5601	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
DTGYN3- 5601	5.64	0.03	0.12	19.94	0.54	0.64	16.40	-0.49	-0.44	16.43
DV8ZUQ- 5601	5.50	-0.11	-0.37	18.50	-0.90	-1.06	17.30	0.41	0.37	17.30
DXX7C3- 5601	5.40	-0.21	-0.73	18.60	-0.80	-0.94	16.88	-0.01	-0.01	16.88
DZJ9VW- 5605	5.50	-0.11	-0.37	18.50	-0.90	-1.06	17.00	0.11	0.10	17.30
E32PNZ- 5601	5.60	-0.01	-0.02	19.80	0.40	0.48	16.40	-0.49	-0.44	16.43
EBJT4E- 5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
EEFPKT- 5601	5.85	0.24	0.87	20.17	0.77	0.91	17.00	0.11	0.10	16.86
EGL8HP- 5601	6.00	0.39	1.40	18.00	-1.40	-1.65	19.00	2.11	1.90	19.47
ENKWZT- 5605	5.00	-0.61	-2.14	19.00	-0.40	-0.47	15.30	-1.59	-1.43	15.26
EQUAWH- 5601	5.30	-0.31	-1.08	16.50	-2.90	-3.43 X	18.70	1.81	1.63	18.74
EXRC72- 5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
EZYU6W- 5605	5.40	-0.21	-0.73	18.00	-1.40	-1.65	17.00	0.11	0.10	17.46
F8RLPV- 5605	5.70	0.09	0.34	19.90	0.50	0.59	16.70	-0.19	-0.17	16.64
FT9RHC- 5605	5.60	-0.01	-0.02	19.50	0.10	0.12	16.70	-0.19	-0.17	16.69
FYZ2TB- 5605	5.90	0.29	1.04	19.90	0.50	0.59	17.00	0.11	0.10	17.25
G6398D- 5601	5.00	-0.61	-2.14	19.00	-0.40	-0.47	15.30	-1.59	-1.43	15.26

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
GNEY4N-5605	6.00	0.39	1.40	19.00	-0.40	-0.47	18.00	1.11	1.00	18.41
GQMEBU-5605	0.90	-4.71	-16.66 X	3.06	-16.34	-19.34 X	17.00	0.11	0.10	17.10
GVCRCRCH-5601	5.50	-0.11	-0.37	20.80	1.40	1.66	15.33	-1.56	-1.40	15.33
H6HH9C-5605	5.80	0.19	0.69	18.00	-1.40	-1.65	18.80	1.91	1.72	18.80
H9WT8E-5601	5.70	0.09	0.34	20.10	0.70	0.83	16.00	-0.89	-0.80	16.47
HBZNPW-5605	5.80	0.19	0.69	19.60	0.20	0.24	17.20	0.31	0.28	17.21
HCGKGW-5601	5.80	0.19	0.69	19.50	0.10	0.12	17.30	0.41	0.37	17.30
HGQVAQ-5605	5.80	0.19	0.69	21.50	2.10	2.49	16.00	-0.89	-0.80	15.65
HKQAVU-5605	5.80	0.19	0.69	19.70	0.30	0.36	17.00	0.11	0.10	17.12
HKRY2D-5605	5.00	-0.61	-2.14	18.00	-1.40	-1.65	15.00	-1.89	-1.70	16.13
HTLCEE-5605	5.50	-0.11	-0.37	18.00	-1.40	-1.65	18.00	1.11	1.00	17.79
HX389B-5601	5.71	0.10	0.37	19.12	-0.28	-0.33	17.38	0.49	0.44	17.38
J2WT9D-5605	6.00	0.39	1.40	21.00	1.60	1.90	17.00	0.11	0.10	16.60
JG76QD-5601	6.00	0.39	1.40	19.00	-0.40	-0.47	18.00	1.11	1.00	18.41
JHYBGW-5605	5.60	-0.01	-0.02	17.60	-1.80	-2.13	18.60	1.71	1.54	18.55
JLLCEC-5605	5.90	0.29	1.04	18.70	-0.70	-0.83	18.00	1.11	1.00	18.39
K28R3L-5601	5.80	0.19	0.69	19.90	0.50	0.59	16.90	0.01	0.01	16.95
K6BMLP-5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
KBYBGU-5601	5.80	0.19	0.69	19.60	0.20	0.24	17.21	0.32	0.29	17.21

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
KFQHZ3-5601	5.75	0.14	0.51	20.36	0.96	1.14	16.40	-0.49	-0.44	16.40
KGZKNM-5601	5.93	0.32	1.15	20.12	0.72	0.85	17.14	0.25	0.22	17.14
KHV7GD-5605	5.00	-0.61	-2.14	18.00	-1.40	-1.65	16.10	-0.79	-0.71	16.13
KK4HWU-5605	5.50	-0.11	-0.37	17.30	-2.10	-2.48	19.00	2.11	1.90	18.54
KLVELN-5605	5.80	0.19	0.69	19.50	0.10	0.12	17.00	0.11	0.10	17.30
KTH48J-5601	5.00	-0.61	-2.14	18.00	-1.40	-1.65	16.10	-0.79	-0.71	16.13
KWFKKD-5601	5.60	-0.01	-0.02	20.00	0.60	0.71	16.30	-0.59	-0.53	16.26
L7XP6H-5601	5.60	-0.01	-0.02	16.20	-3.20	-3.79 X	20.20	3.31	2.98	20.22 X
L8UPXA-5605	5.60	-0.01	-0.02	18.10	-1.30	-1.54	18.00	1.11	1.00	18.02
LAZKNK-5601	5.80	0.19	0.69	19.40	0.00	0.00	17.00	0.11	0.10	17.40
LNHCCR-5601	5.60	-0.01	-0.02	20.00	0.60	0.71	16.30	-0.59	-0.53	16.26
LQNX3D-5605	5.50	-0.11	-0.37	19.00	-0.40	-0.47	17.00	0.11	0.10	16.83
LYEH7P-5605	5.50	-0.11	-0.37	15.10	-4.30	-5.09 X	21.40	4.51	4.06 X	21.36 X
MAY6W7-5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
MBUZTA-5605	6.00	0.39	1.40	20.00	0.60	0.71	17.00	0.11	0.10	17.46
MM46QA-5601	5.50	-0.11	-0.37	19.00	-0.40	-0.47	17.00	0.11	0.10	16.83
MUN9WR-5601	5.65	0.04	0.16	19.82	0.42	0.50	16.60	-0.29	-0.26	16.56
MVEPU7-5601	5.74	0.13	0.48	19.20	-0.20	-0.23	17.40	0.51	0.46	17.40
NDBG7R-5605	5.90	0.29	1.04	20.90	1.50	1.78	16.00	-0.89	-0.80	16.40

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
NE46R9-5605	5.80	0.19	0.69	19.80	0.40	0.48	17.00	0.11	0.10	17.03
NEMGJ9-5605	5.46	-0.15	-0.51	19.64	0.24	0.29	16.14	-0.75	-0.67	16.14
NFXJ68-5605	5.70	0.09	0.34	18.80	-0.60	-0.71	18.00	1.11	1.00	17.65
NK9AEL-5605	0.99	-4.62	-16.34 X	3.46	-15.94	-18.87 X	16.60	-0.29	-0.26	16.63
NKEQT8-5605	6.00	0.39	1.40	19.00	-0.40	-0.47	19.00	2.11	1.90	18.41
NMEPU6-5601	6.00	0.39	1.40	20.00	0.60	0.71	17.46	0.57	0.51	17.46
NUHERC-5601	5.65	0.04	0.16	20.30	0.90	1.07	16.00	-0.89	-0.80	16.16
NUXWAN-5605	5.70	0.09	0.34	20.20	0.80	0.95	16.00	-0.89	-0.80	16.39
NXDR79-5605	5.90	0.29	1.04	20.29	0.89	1.06	17.00	0.11	0.10	16.90
NXHPLQ-5601	5.60	-0.01	-0.02	19.00	-0.40	-0.47	17.14	0.25	0.22	17.14
NYUPX8-5601	6.00	0.39	1.40	19.00	-0.40	-0.47	18.40	1.51	1.36	18.41
PC99FJ-5605	6.00	0.39	1.40	19.50	0.10	0.12	17.90	1.01	0.91	17.92
PDN9Y9-5601	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
PUR379-5605	5.60	-0.01	-0.02	20.00	0.60	0.71	16.00	-0.89	-0.80	16.26
PV8YX9-5601	5.80	0.19	0.69	20.20	0.80	0.95	16.69	-0.20	-0.18	16.69
Q2QPVM-5601	5.40	-0.21	-0.73	19.00	-0.40	-0.47	16.50	-0.39	-0.35	16.51
Q3JKHV-5605	5.80	0.19	0.69	20.40	1.00	1.19	17.00	0.11	0.10	16.52
Q6QZRM-5601	6.00	0.39	1.40	19.50	0.10	0.12	17.90	1.01	0.91	17.92
Q6RPX6-5605	5.00	-0.61	-2.14	16.00	-3.40	-4.02 X	18.00	1.11	1.00	18.21

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
QANG4G-5601	5.83	0.22	0.80	18.87	-0.53	-0.62	18.00	1.11	1.00	18.00
QHCD3W-5601	5.85	0.24	0.87	20.15	0.75	0.89	16.88	-0.01	-0.01	16.88
QM8YY7-5601	5.83	0.22	0.80	20.05	0.65	0.77	16.90	0.01	0.01	16.90
R4XU24-5601	5.00	-0.61	-2.14	20.00	0.60	0.71	14.50	-2.39	-2.15	14.48
R8QNJH-5605	3.79	-1.82	-6.43 X	12.34	-7.06	-8.35 X	17.90	1.01	0.91	17.89
R97M48-5601	5.40	-0.21	-0.73	20.00	0.60	0.71	15.66	-1.23	-1.11	15.66
REBQQK-5605	5.60	-0.01	-0.02	19.00	-0.40	-0.47	17.00	0.11	0.10	17.14
RGDLAM-5605	5.50	-0.11	-0.37	20.00	0.60	0.71	16.00	-0.89	-0.80	15.96
RPRBBG-5601	5.80	0.19	0.69	19.40	0.00	0.00	17.40	0.51	0.46	17.40
RR2BD3-5605	5.59	-0.02	-0.05	19.99	0.59	0.70	16.00	-0.89	-0.80	16.24
RRYQHM-5601	5.80	0.19	0.69	20.12	0.72	0.85	16.80	-0.09	-0.08	16.75
TADLBL-5601	5.75	0.14	0.51	18.70	-0.70	-0.83	17.90	1.01	0.91	17.91
TE6WKJ-5605	5.70	0.09	0.34	19.90	0.50	0.59	17.00	0.11	0.10	16.64
TZ9EVL-5601	5.56	-0.05	-0.16	20.05	0.65	0.77	16.10	-0.79	-0.71	16.10
U7BDY3-5605	5.59	-0.02	-0.06	20.32	0.92	1.09	16.00	-0.89	-0.80	15.96
U7UUYH-5605	5.50	-0.11	-0.37	19.25	-0.15	-0.18	17.00	0.11	0.10	16.60
UDU9M6-5601	5.00	-0.61	-2.14	15.00	-4.40	-5.21 X	19.47	2.58	2.32	19.47
UEKF6G-5605	1.15	-4.46	-15.78 X	3.77	-15.63	-18.50 X	17.80	0.91	0.82	17.76
UJEA3H-5605	5.50	-0.11	-0.37	16.00	-3.40	-4.02 X	20.10	3.21	2.89	20.11 X

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
ULKUR4-5601	6.00	0.39	1.40	20.00	0.60	0.71	17.00	0.11	0.10	17.46
UVT78L-5605	5.80	0.19	0.69	19.20	-0.20	-0.23	17.60	0.71	0.64	17.58
UYQMKF-5605	5.60	-0.01	-0.02	19.50	0.10	0.12	16.70	-0.19	-0.17	16.69
V6YY62-5605	5.36	-0.25	-0.87	14.85	-4.55	-5.38 X	19.50	2.61	2.35	21.16 X
VMT78J-5601	5.70	0.09	0.34	19.90	0.50	0.59	16.64	-0.25	-0.23	16.64
VW6FGX-5601	5.80	0.19	0.69	19.70	0.30	0.36	17.00	0.11	0.10	17.12
VXUUZG-5605	5.60	-0.01	-0.02	19.80	0.40	0.48	16.30	-0.59	-0.53	16.43
W4ZMUC-5601	5.70	0.09	0.34	19.40	0.00	0.00	17.00	0.11	0.10	17.09
W69MJY-5605	5.70	0.09	0.34	20.40	1.00	1.19	16.20	-0.69	-0.62	16.23
W8YYPC-5601	5.37	-0.24	-0.83	19.17	-0.23	-0.27	16.30	-0.59	-0.53	16.27
WBYAJQ-5601	6.00	0.39	1.40	20.00	0.60	0.71	17.50	0.61	0.55	17.46
WKM294-5605	5.80	0.19	0.69	19.60	0.20	0.24	17.20	0.31	0.28	17.21
WQTD8V-5605	5.50	-0.11	-0.37	18.20	-1.20	-1.42	17.50	0.61	0.55	17.59
WTT6VE-5605	5.00	-0.61	-2.14	19.00	-0.40	-0.47	15.00	-1.89	-1.70	15.26
X949WZ-5601	5.80	0.19	0.69	20.00	0.60	0.71	16.90	0.01	0.01	16.86
XC4G2A-5601	5.80	0.19	0.69	19.60	0.20	0.24	17.00	0.11	0.10	17.21
XJMK9C-5601	5.46	-0.15	-0.51	18.00	-1.40	-1.65	14.30	-2.59	-2.33	17.66
XR34QQ-5605							16.00	-0.89	-0.80	X
XT9NFC-5601	5.00	-0.61	-2.14	20.00	0.60	0.71	14.50	-2.39	-2.15	14.48

TABLE 1
Stain C, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
Y2HDUA-5601	5.70	0.09	0.34	19.80	0.40	0.48	17.00	0.11	0.10	16.73
YGDUJ9-5601	5.60	-0.01	-0.02	19.40	0.00	0.00	16.80	-0.09	-0.08	16.78
YHABV6-5605	5.00	-0.61	-2.14	19.00	-0.40	-0.47	15.26	-1.63	-1.47	15.26
YHNW68-5605	5.30	-0.31	-1.08	19.30	-0.10	-0.12	16.00	-0.89	-0.80	15.94
YX367B-5605	1.93	-3.68	-13.01 X	6.05	-13.35	-15.80 X	18.60	1.71	1.54	18.60
Z2G3BC-5605	5.40	-0.21	-0.73	20.10	0.70	0.83	15.00	-1.89	-1.70	15.58
Z7QBKU-5605	5.50	-0.11	-0.37	19.50	0.10	0.12	16.00	-0.89	-0.80	16.38
Z83TX8-5601	5.90	0.29	1.04	20.21	0.81	0.96	17.00	0.11	0.10	16.97
Z9Y9A6-5601	5.90	0.29	1.04	19.10	-0.30	-0.35	18.10	1.21	1.09	17.99
ZE624Z-5605	5.90	0.29	1.04	17.70	-1.70	-2.01	19.50	2.61	2.35	19.47
ZLN828-5605	5.53	-0.08	-0.27	19.10	-0.30	-0.35	16.82	-0.07	-0.06	16.83
ZP3679-5605	5.69	0.08	0.30	19.36	-0.04	-0.04	17.10	0.21	0.19	17.09
ZXHNP9-5601	5.40	-0.21	-0.73	18.60	-0.80	-0.94	16.90	0.01	0.01	16.88
ZYCAJY-5601	6.00	0.39	1.40	20.00	0.60	0.71	17.50	0.61	0.55	17.46
Grand Mean	5.61			19.40			16.89			16.90
Standard Deviation	0.28			0.84			1.11			1.00
Participants Included in calculations	178			170			183			180
Participants excluded from calculations (indicated by X)	6			14			2			5

Stain C Preparation Angle: 18.1°

TABLE 1
Stain D

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
2B2TBA- 5605	7.20	0.35	1.92	29.00	0.93	0.62	14.40	0.36	0.47	14.38
2QBHNB- 5601	7.30	0.45	2.46	27.50	-0.57	-0.38	15.40	1.36	1.75	15.39
2UVQZQ- 5605	6.00	-0.85	-4.60 X	25.00	-3.07	-2.06	14.00	-0.04	-0.04	13.89
2XCUJ8- 5605	6.80	-0.05	-0.25	27.90	-0.17	-0.11	14.00	-0.04	-0.04	14.11
2XF9YT- 5601	6.70	-0.15	-0.80	27.80	-0.27	-0.18	13.90	-0.14	-0.17	13.95
33KATV- 5605	6.70	-0.15	-0.80	29.30	1.23	0.83	13.20	-0.84	-1.07	13.22
3CA32L- 5605	6.80	-0.05	-0.25	27.00	-1.07	-0.72	14.60	0.56	0.72	14.59
3LYTME- 5601	6.86	0.01	0.07	29.29	1.22	0.82	13.50	-0.54	-0.69	13.55
3RJ9TW- 5601	7.00	0.15	0.83	29.00	0.93	0.62	13.90	-0.14	-0.17	13.97
3V34U4- 5601	6.40	-0.45	-2.43	27.00	-1.07	-0.72	13.70	-0.34	-0.43	13.71
46QA9M- 5601	6.50	-0.35	-1.88	29.00	0.93	0.62	12.00	-2.04	-2.61	12.95
4DEAGJ- 5605	6.70	-0.15	-0.80	26.40	-1.67	-1.12	14.70	0.66	0.85	14.70
4LR293- 5605	6.90	0.05	0.29	28.10	0.03	0.02	14.30	0.26	0.34	14.21
4Q3EQ2- 5605	6.75	-0.10	-0.53	28.50	0.43	0.29	13.70	-0.34	-0.43	13.70
4U2QL2- 5601	6.50	-0.35	-1.88	25.00	-3.07	-2.06	15.00	0.96	1.24	15.07
4YF94H- 5605	6.90	0.05	0.29	29.00	0.93	0.62	14.00	-0.04	-0.04	13.76
6F327V- 5605	6.60	-0.25	-1.34	26.00	-2.07	-1.39	14.70	0.66	0.85	14.71
6JJ9UU- 5601	7.00	0.15	0.83	26.40	-1.67	-1.12	27.00	12.96	16.60 X	15.38
6NXYYP- 5601	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
6REX4Q- 5605	6.50	-0.35	-1.88	27.00	-1.07	-0.72	14.00	-0.04	-0.04	13.93
6UH7E9- 5601	6.80	-0.05	-0.25	29.70	1.63	1.09	13.20	-0.84	-1.07	13.24
74PZA2- 5601	7.09	0.24	1.32	29.21	1.14	0.76	14.00	-0.04	-0.04	14.05
777TXA- 5605	6.90	0.05	0.27	28.01	-0.06	-0.04	14.00	-0.04	-0.04	14.25
78NEWR- 5601	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
79VU4X- 5605	6.86	0.01	0.07	28.12	0.05	0.03	14.12	0.08	0.11	14.12
7AAQNP- 5605	6.80	-0.05	-0.25	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.06
7B463L- 5605	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
7L78KX- 5601	6.80	-0.05	-0.25	27.00	-1.07	-0.72	14.60	0.56	0.72	14.59
7PJ8HP- 5605	6.00	-0.85	-4.60 X	27.00	-1.07	-0.72	13.00	-1.04	-1.33	12.84
7QGHB8- 5605	6.80	-0.05	-0.25	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.06
7XHPYM- 5605	6.70	-0.15	-0.80	27.70	-0.37	-0.25	14.00	-0.04	-0.04	14.00
7YTG6H- 5601	6.80	-0.05	-0.25	29.70	1.63	1.09	13.24	-0.80	-1.02	13.24
89QW9R- 5605	6.40	-0.45	-2.43	28.00	-0.07	-0.05	13.20	-0.84	-1.07	13.21
8CAR9Y- 5601	6.90	0.05	0.29	29.60	1.53	1.03	13.00	-1.04	-1.33	13.48
8JXE46- 5605	6.50	-0.35	-1.88	28.60	0.53	0.36	13.10	-0.94	-1.20	13.14
8XCUTL- 5601	7.00	0.15	0.83	26.50	-1.57	-1.06	15.00	0.96	1.24	15.32
8XVQC9- 5605	6.80	-0.05	-0.25	27.00	-1.07	-0.72	14.60	0.56	0.72	14.59
8YNEWP- 5605	7.00	0.15	0.83	29.00	0.93	0.62	14.00	-0.04	-0.04	13.97

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
93M8AK-5601	6.50	-0.35	-1.88	28.40	0.33	0.22	13.20	-0.84	-1.07	13.23
9HBM8P-5605	7.20	0.35	1.92	29.20	1.13	0.76	14.00	-0.04	-0.04	14.27
A67QM3-5605	6.90	0.05	0.29	27.70	-0.37	-0.25	14.40	0.36	0.47	14.42
ALBX24-5601	6.50	-0.35	-1.88	27.00	-1.07	-0.72	13.93	-0.11	-0.13	13.93
AWBNKQ-5605	6.80	-0.05	-0.25	25.80	-2.27	-1.53	15.30	1.26	1.62	15.28
B7VEKN-5605	6.00	-0.85	-4.60 X	26.00	-2.07	-1.39	13.34	-0.70	-0.89	13.34
BLAKT2-5601	6.75	-0.10	-0.53	30.00	1.93	1.30	13.00	-1.04	-1.33	13.00
BNDFC6-5605	6.70	-0.15	-0.80	27.10	-0.97	-0.65	14.00	-0.04	-0.04	14.31
BNF7JM-5601	6.50	-0.35	-1.88	29.75	1.68	1.13	12.62	-1.42	-1.81	12.62
BU3TET-5601	7.00	0.15	0.83	24.00	-4.07	-2.73	16.90	2.86	3.67 X	16.96 X
BWQ6DX-5601	6.70	-0.15	-0.80	29.17	1.10	0.74	13.28	-0.76	-0.97	13.28
BWVTKK-5601	6.75	-0.10	-0.53	29.00	0.93	0.62	13.50	-0.54	-0.69	13.46
C9EQWY-5605	2.50	-4.35	-23.61 X	9.20	-18.87	-12.67 X	15.80	1.76	2.26	15.77
CBHLF2-5601	6.85	0.00	0.02	29.31	1.24	0.83	13.50	-0.54	-0.69	13.52
CBK8BG-5605	6.90	0.05	0.29	27.30	-0.77	-0.52	14.60	0.56	0.72	14.64
CDVLRH-5605	7.00	0.15	0.83	30.00	1.93	1.30	13.00	-1.04	-1.33	13.49
CEKH8G-5601	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
CK8D3U-5601	6.90	0.05	0.29	29.90	1.83	1.23	13.30	-0.74	-0.94	13.34
CP4YRB-5605	7.00	0.15	0.83	26.50	-1.57	-1.06	15.31	1.27	1.63	15.32

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
CT63LJ- 5605	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
DGMH2M- 5601	7.00	0.15	0.83	29.00	0.93	0.62	14.00	-0.04	-0.04	13.97
DJVX9T- 5601	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
DTGYN3- 5601	6.75	-0.10	-0.53	29.34	1.27	0.85	13.30	-0.74	-0.94	13.30
DV8ZUQ- 5601	6.50	-0.35	-1.88	28.00	-0.07	-0.05	13.40	-0.64	-0.81	13.42
DXX7C3- 5601	6.80	-0.05	-0.25	26.20	-1.87	-1.26	15.04	1.00	1.29	15.04
DZJ9VW- 5605	7.00	0.15	0.83	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.48
E32PNZ- 5601	6.80	-0.05	-0.25	28.40	0.33	0.22	13.90	-0.14	-0.17	13.85
EBJT4E- 5605	7.00	0.15	0.83	30.00	1.93	1.30	13.00	-1.04	-1.33	13.49
EEFPKT- 5601	6.93	0.08	0.45	29.08	1.01	0.68	14.00	-0.04	-0.04	13.79
EGL8HP- 5601	7.00	0.15	0.83	25.00	-3.07	-2.06	16.00	1.96	2.52	16.26
ENKWZT- 5605	6.50	-0.35	-1.88	25.00	-3.07	-2.06	15.10	1.06	1.36	15.07
EQUAWH- 5601	6.80	-0.05	-0.25	27.90	-0.17	-0.11	14.00	-0.04	-0.04	14.11
EXRC72- 5605	6.90	0.05	0.29	30.40	2.33	1.56	13.10	-0.94	-1.20	13.12
EZYU6W- 5605	6.80	-0.05	-0.25	26.80	-1.27	-0.85	15.00	0.96	1.24	14.70
F8RLPV- 5605	6.90	0.05	0.29	28.30	0.23	0.15	14.20	0.16	0.21	14.11
FT9RHC- 5605	6.80	-0.05	-0.25	28.60	0.53	0.36	13.80	-0.24	-0.30	13.75
FYZ2TB- 5605	7.10	0.25	1.37	29.10	1.03	0.69	14.00	-0.04	-0.04	14.12
G6398D- 5601	6.50	-0.35	-1.88	28.00	-0.07	-0.05	13.40	-0.64	-0.81	13.42

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
GNEY4N-5605	7.00	0.15	0.83	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.48
GQMEBU-5605	0.67	-6.18	-33.55 X	2.64	-25.43	-17.08 X	14.00	-0.04	-0.04	14.70
GVCRCH-5601	7.00	0.15	0.83	30.50	2.43	1.63	13.27	-0.77	-0.98	13.27
H6HH9C-5605	6.60	-0.25	-1.34	26.70	-1.37	-0.92	14.30	0.26	0.34	14.31
H9WT8E-5601	6.80	-0.05	-0.25	29.80	1.73	1.16	13.00	-1.04	-1.33	13.19
HBZNPW-5605	6.80	-0.05	-0.25	29.20	1.13	0.76	13.50	-0.54	-0.69	13.47
HCGKGW-5601	7.10	0.25	1.37	28.50	0.43	0.29	14.40	0.36	0.47	14.43
HGQVAQ-5605	7.00	0.15	0.83	29.80	1.73	1.16	14.00	-0.04	-0.04	13.59
HKQAVU-5605	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
HKRY2D-5605	7.00	0.15	0.83	26.00	-2.07	-1.39	15.00	0.96	1.24	15.62
HTLCEE-5605	6.75	-0.10	-0.53	27.50	-0.57	-0.38	14.00	-0.04	-0.04	14.21
HX389B-5601	7.04	0.19	1.05	26.78	-1.29	-0.87	15.24	1.20	1.54	15.24
J2WT9D-5605	7.00	0.15	0.83	30.00	1.93	1.30	13.00	-1.04	-1.33	13.49
JG76QD-5601	7.00	0.15	0.83	27.50	-0.57	-0.38	14.70	0.66	0.85	14.75
JHYBGW-5605	6.90	0.05	0.29	28.40	0.33	0.22	14.10	0.06	0.08	14.06
JLLCEC-5605	6.90	0.05	0.29	27.50	-0.57	-0.38	15.00	0.96	1.24	14.53
K28R3L-5601	7.00	0.15	0.83	27.80	-0.27	-0.18	14.60	0.56	0.72	14.58
K6BMLP-5605	7.00	0.15	0.83	26.00	-2.07	-1.39	16.00	1.96	2.52	15.62
KBYBGU-5601	6.80	-0.05	-0.25	29.60	1.53	1.03	13.28	-0.76	-0.97	13.28

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
KFQHZ3-5601	7.09	0.24	1.32	23.78	-4.29	-2.88	17.34	3.30	4.23 X	17.35 X
KGZKNM-5601	6.99	0.14	0.78	29.48	1.41	0.95	13.72	-0.32	-0.40	13.72
KHV7GD-5605	6.50	-0.35	-1.88	26.00	-2.07	-1.39	14.50	0.46	0.60	14.48
KK4HWU-5605	6.70	-0.15	-0.80	25.40	-2.67	-1.79	15.00	0.96	1.24	15.29
KLVELN-5605	6.90	0.05	0.29	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.27
KTH48J-5601	6.90	0.05	0.29	26.00	-2.07	-1.39	15.30	1.26	1.62	15.39
KWFKKD-5601	6.90	0.05	0.29	29.10	1.03	0.69	13.70	-0.34	-0.43	13.72
L7XP6H-5601	6.90	0.05	0.29	23.80	-4.27	-2.87	16.90	2.86	3.67 X	16.85 X
L8UPXA-5605	7.00	0.15	0.83	28.90	0.83	0.56	14.00	-0.04	-0.04	14.02
LAZKNK-5601	6.70	-0.15	-0.80	29.00	0.93	0.62	13.00	-1.04	-1.33	13.36
LNHCCR-5601	6.60	-0.25	-1.34	30.00	1.93	1.30	12.70	-1.34	-1.71	12.71
LQNX3D-5605	6.50	-0.35	-1.88	28.00	-0.07	-0.05	13.50	-0.54	-0.69	13.42
LYEH7P-5605	6.80	-0.05	-0.25	26.50	-1.57	-1.06	14.90	0.86	1.11	14.87
MAY6W7-5605	6.50	-0.35	-1.88	26.50	-1.57	-1.06	14.20	0.16	0.21	14.20
MBUZTA-5605	7.00	0.15	0.83	29.00	0.93	0.62	14.00	-0.04	-0.04	13.97
MM46QA-5601	6.80	-0.05	-0.25	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.06
MUN9WR-5601	6.83	-0.02	-0.09	29.32	1.25	0.84	13.50	-0.54	-0.69	13.47
MVEPU7-5601	7.31	0.46	2.52	26.69	-1.38	-0.93	15.90	1.86	2.39	15.90
NDBG7R-5605	7.20	0.35	1.92	30.20	2.13	1.43	14.00	-0.04	-0.04	13.79

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
NE46R9-5605	6.90	0.05	0.29	29.00	0.93	0.62	13.80	-0.24	-0.30	13.76
NEMGJ9-5605	6.80	-0.05	-0.25	28.93	0.86	0.58	13.59	-0.45	-0.57	13.59
NFXJ68-5605	6.80	-0.05	-0.25	27.30	-0.77	-0.52	14.00	-0.04	-0.04	14.42
NK9AEL-5605	0.78	-6.07	-32.96 X	3.05	-25.02	-16.80 X	14.80	0.76	0.98	14.82
NKEQT8-5605	6.00	-0.85	-4.60 X	25.00	-3.07	-2.06	14.00	-0.04	-0.04	13.89
NMEPU6-5601	7.00	0.15	0.83	30.00	1.93	1.30	13.49	-0.55	-0.70	13.49
NUHERC-5601	6.80	-0.05	-0.25	30.10	2.03	1.36	13.00	-1.04	-1.33	13.06
NUXWAN-5605	6.90	0.05	0.29	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.27
NXDR79-5605	6.83	-0.02	-0.09	29.26	1.19	0.80	14.00	-0.04	-0.04	13.50
NXHPLQ-5601	6.90	0.05	0.29	26.80	-1.27	-0.85	14.91	0.87	1.12	14.92
NYUPX8-5601	7.00	0.15	0.83	28.00	-0.07	-0.05	14.50	0.46	0.60	14.48
PC99FJ-5605	7.00	0.15	0.83	27.40	-0.67	-0.45	14.80	0.76	0.98	14.80
PDN9Y9-5601	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
PUR379-5605	7.00	0.15	0.83	30.00	1.93	1.30	13.00	-1.04	-1.33	13.49
PV8YX9-5601	6.80	-0.05	-0.25	30.60	2.53	1.70	12.84	-1.20	-1.53	12.84
Q2QPVM-5601	7.00	0.15	0.83	28.00	-0.07	-0.05	14.50	0.46	0.60	14.48
Q3JKHV-5605	6.80	-0.05	-0.25	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.06
Q6QZRM-5601	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
Q6RPX6-5605	6.00	-0.85	-4.60 X	25.00	-3.07	-2.06	14.00	-0.04	-0.04	13.89

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
QANG4G-5601	6.83	-0.02	-0.09	28.75	0.68	0.46	13.74	-0.30	-0.38	13.74
QHCD3W-5601	6.95	0.10	0.56	28.87	0.80	0.54	13.93	-0.11	-0.13	13.93
QM8YY7-5601	6.87	0.02	0.13	28.08	0.01	0.01	14.18	0.14	0.19	14.16
R4XU24-5601	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
R8QNJH-5605	2.13	-4.72	-25.62 X	8.41	-19.66	-13.20 X	14.70	0.66	0.85	14.67
R97M48-5601	7.00	0.15	0.83	29.60	1.53	1.03	13.68	-0.36	-0.45	13.68
REBQQK-5605	6.80	-0.05	-0.25	26.40	-1.67	-1.12	15.00	0.96	1.24	14.93
RGDLAM-5605	6.50	-0.35	-1.88	30.50	2.43	1.63	12.30	-1.74	-2.22	12.30
RPRBBG-5601	7.00	0.15	0.83	26.00	-2.07	-1.39	15.60	1.56	2.00	15.62
RR2BD3-5605	6.83	-0.02	-0.09	27.86	-0.21	-0.14	14.00	-0.04	-0.04	14.19
RRYQHM-5601	6.90	0.05	0.29	28.87	0.80	0.54	13.80	-0.24	-0.30	13.83
TADLBL-5601	6.90	0.05	0.29	28.40	0.33	0.22	14.10	0.06	0.08	14.06
TE6WKJ-5605	6.70	-0.15	-0.80	28.40	0.33	0.22	14.00	-0.04	-0.04	13.65
TZ9EVL-5601	6.83	-0.02	-0.09	29.60	1.53	1.03	13.30	-0.74	-0.94	13.34
U7BDY3-5605	7.11	0.27	1.44	28.96	0.88	0.59	14.00	-0.04	-0.04	14.22
U7UUYH-5605	6.50	-0.35	-1.88	27.50	-0.57	-0.38	14.00	-0.04	-0.04	13.67
UDU9M6-5601	6.00	-0.85	-4.60 X	22.00	-6.07	-4.08 X	15.82	1.78	2.29	15.83
UEKF6G-5605	0.83	-6.02	-32.68 X	3.29	-24.78	-16.64 X	14.60	0.56	0.72	14.61
UJEA3H-5605	6.90	0.05	0.29	28.00	-0.07	-0.05	14.30	0.26	0.34	14.27

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
ULKUR4-5601	8.00	1.15	6.26 X	30.00	1.93	1.30	15.00	0.96	1.24	15.47
UVT78L-5605	6.80	-0.05	-0.25	27.50	-0.57	-0.38	14.30	0.26	0.34	14.32
UYQMKF-5605	6.90	0.05	0.29	27.00	-1.07	-0.72	14.80	0.76	0.98	14.81
V6YY62-5605	6.91	0.06	0.34	25.62	-2.45	-1.65	15.30	1.26	1.62	15.65
VMT78J-5601	6.90	0.05	0.29	29.10	1.03	0.69	13.72	-0.32	-0.40	13.72
VV6FGX-5601	7.00	0.15	0.83	30.20	2.13	1.43	13.00	-1.04	-1.33	13.40
VXUUZG-5605	6.80	-0.05	-0.25	29.90	1.83	1.23	13.20	-0.84	-1.07	13.15
W4ZMUC-5601	6.80	-0.05	-0.25	28.40	0.33	0.22	14.00	-0.04	-0.04	13.85
W69MJY-5605	6.90	0.05	0.29	29.80	1.73	1.16	13.40	-0.64	-0.81	13.39
W8YYPC-5601	6.67	-0.18	-0.96	27.71	-0.36	-0.24	13.90	-0.14	-0.17	13.93
WBYAJQ-5601	7.00	0.15	0.83	30.00	1.93	1.30	13.50	-0.54	-0.69	13.49
WKM294-5605	6.80	-0.05	-0.25	28.80	0.73	0.49	13.70	-0.34	-0.43	13.66
WQTD8V-5605	6.50	-0.35	-1.88	26.50	-1.57	-1.06	14.30	0.26	0.34	14.20
WTT6VE-5605	7.00	0.15	0.83	28.00	-0.07	-0.05	14.00	-0.04	-0.04	14.48
X949WZ-5601	6.90	0.05	0.29	28.00	-0.07	-0.05	14.30	0.26	0.34	14.27
XC4G2A-5601	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
XJMK9C-5601	7.00	0.15	0.83	26.00	-2.07	-1.39	15.60	1.56	2.00	15.62
XR34QQ-5605							13.00	-1.04	-1.33	X
XT9NFC-5601	6.50	-0.35	-1.88	30.00	1.93	1.30	12.50	-1.54	-1.97	12.51

TABLE 1
Stain D, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
Y2HDUA-5601	7.00	0.15	0.83	29.00	0.93	0.62	14.00	-0.04	-0.04	13.97
YGDUJ9-5601	6.40	-0.45	-2.43	28.00	-0.07	-0.05	13.20	-0.84	-1.07	13.21
YHABV6-5605	6.00	-0.85	-4.60 X	28.00	-0.07	-0.05	12.37	-1.67	-2.13	12.37
YHNW68-5605	6.70	-0.15	-0.80	29.30	1.23	0.83	13.10	-0.94	-1.20	13.22
YX367B-5605	1.59	-5.26	-28.56 X	6.23	-21.84	-14.67 X	14.80	0.76	0.98	14.79
Z2G3BC-5605	6.80	-0.05	-0.25	30.20	2.13	1.43	13.00	-1.04	-1.33	13.01
Z7QBKU-5605	6.90	0.05	0.29	27.60	-0.47	-0.32	14.00	-0.04	-0.04	14.48
Z83TX8-5601	6.87	0.02	0.13	27.55	-0.52	-0.35	14.40	0.36	0.47	14.44
Z9Y9A6-5601	7.00	0.15	0.83	26.50	-1.57	-1.06	15.30	1.26	1.62	15.32
ZE624Z-5605	6.90	0.05	0.29	27.00	-1.07	-0.72	14.80	0.76	0.98	14.81
ZLN828-5605	6.58	-0.27	-1.45	28.17	0.10	0.07	13.51	-0.53	-0.67	13.51
ZP3679-5605	6.60	-0.25	-1.34	27.91	-0.16	-0.11	13.69	-0.35	-0.44	13.68
ZXHNP9-5601	6.60	-0.25	-1.34	28.80	0.73	0.49	13.20	-0.84	-1.07	13.25
ZYCAJY-5601	7.00	0.15	0.83	27.00	-1.07	-0.72	15.00	0.96	1.24	15.03
Grand Mean	6.85			28.07			14.04			14.09
Standard Deviation	0.18			1.49			0.78			0.77
Participants Included in calculations	170			177			181			181
Participants excluded from calculations (indicated by X)	14			7			4			4

Stain D Preparation Angle: 14.1°

TABLE 1
Stain E

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
2B2TBA-5605	7.80	0.29	1.23	14.40	0.46	0.92	32.80	0.18	0.13	32.80
2QBHNB-5601	8.00	0.49	2.07	14.20	0.26	0.52	34.30	1.68	1.18	34.29
2UVQZQ-5605	7.00	-0.51	-2.16	14.00	0.06	0.12	30.00	-2.62	-1.83	30.00
2XCUIJ8-5605	7.60	0.09	0.38	14.10	0.16	0.32	33.00	0.38	0.27	32.62
2XF9YT-5601	7.40	-0.11	-0.47	13.60	-0.34	-0.69	33.00	0.38	0.27	32.96
33KATV-5605	7.50	-0.01	-0.04	14.20	0.26	0.52	31.90	-0.72	-0.50	31.88
3CA32L-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
3LYTME-5601	7.58	0.07	0.30	14.19	0.25	0.50	32.30	-0.32	-0.22	32.29
3RJ9TW-5601	7.00	-0.51	-2.16	24.00	10.06	20.26 X	18.20	-14.42	-10.07 X	16.96 X
3V34U4-5601	7.30	-0.21	-0.89	13.50	-0.44	-0.89	32.70	0.08	0.06	32.73
46QA9M-5601	7.80	0.29	1.23	13.80	-0.14	-0.29	34.00	1.38	0.97	34.42
4DEAGJ-5605	7.60	0.09	0.38	15.00	1.06	2.13	30.40	-2.22	-1.55	30.44
4LR293-5605	7.60	0.09	0.38	13.80	-0.14	-0.29	33.20	0.58	0.41	33.42
4Q3EQ2-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
4U2QL2-5601	7.40	-0.11	-0.47	13.60	-0.34	-0.69	33.00	0.38	0.27	32.96
4YF94H-5605	7.50	-0.01	-0.04	13.00	-0.94	-1.90	35.00	2.38	1.66	35.23
6F327V-5605	7.30	-0.21	-0.89	13.30	-0.64	-1.29	33.30	0.68	0.48	33.29
6JJ9UU-5601	7.70	0.19	0.80	14.00	0.06	0.12	55.00	22.38	15.63 X	33.37
6NXYYP-5601	7.50	-0.01	-0.04	14.30	0.36	0.72	32.00	-0.62	-0.43	31.63

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
6REX4Q- 5605	7.30	-0.21	-0.89	13.40	-0.54	-1.09	32.00	-0.62	-0.43	33.01
6UH7E9- 5601	7.40	-0.11	-0.47	14.50	0.56	1.12	30.70	-1.92	-1.34	30.69
74PZA2- 5601	7.56	0.05	0.21	14.38	0.44	0.88	31.70	-0.92	-0.64	31.72
777TXA- 5605	7.19	-0.32	-1.35	13.63	-0.31	-0.63	32.00	-0.62	-0.43	31.85
78NEWR- 5601	7.50	-0.01	-0.04	14.50	0.56	1.12	31.00	-1.62	-1.13	31.15
79VU4X- 5605	7.39	-0.12	-0.51	13.84	-0.10	-0.21	32.27	-0.35	-0.24	32.27
7AAQNP- 5605	7.40	-0.11	-0.47	14.00	0.06	0.12	32.00	-0.62	-0.43	31.91
7B463L- 5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
7L78KX- 5601	7.50	-0.01	-0.04	13.00	-0.94	-1.90	35.20	2.58	1.80	35.23
7PJ8HP- 5605	7.00	-0.51	-2.16	13.00	-0.94	-1.90	32.00	-0.62	-0.43	32.58
7QGHB8- 5605	7.50	-0.01	-0.04	13.80	-0.14	-0.29	33.00	0.38	0.27	32.92
7XHPYM- 5605	7.30	-0.21	-0.89	14.10	0.16	0.32	31.00	-1.62	-1.13	31.18
7YTG6H- 5601	7.50	-0.01	-0.04	14.20	0.26	0.52	31.88	-0.74	-0.51	31.88
89QW9R- 5605	7.00	-0.51	-2.16	13.20	-0.74	-1.49	32.00	-0.62	-0.43	32.03
8CAR9Y- 5601	7.90	0.39	1.65	14.10	0.16	0.32	34.00	1.38	0.97	34.08
8JXE46- 5605	7.20	-0.31	-1.31	14.10	0.16	0.32	30.70	-1.92	-1.34	30.71
8XCUTL- 5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
8XVQC9- 5605	7.50	-0.01	-0.04	14.30	0.36	0.72	31.60	-1.02	-0.71	31.63
8YNEWP- 5605	7.50	-0.01	-0.04	13.80	-0.14	-0.29	33.00	0.38	0.27	32.92

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
93M8AK- 5601	7.20	-0.31	-1.31	14.00	0.06	0.12	30.90	-1.72	-1.20	30.95
9HBM8P- 5605	7.90	0.39	1.65	14.40	0.46	0.92	33.00	0.38	0.27	33.27
A67QM3- 5605	7.60	0.09	0.38	14.10	0.16	0.32	32.50	-0.12	-0.08	32.62
ALBX24- 5601	7.50	-0.01	-0.04	13.75	-0.19	-0.39	33.06	0.44	0.31	33.06
AWBNKQ- 5605	7.60	0.09	0.38	13.40	-0.54	-1.09	34.60	1.98	1.39	34.55
B7VEKN- 5605	6.50	-1.01	-4.28 X	12.00	-1.94	-3.91 X	32.80	0.18	0.13	32.80
BLAKT2- 5601	7.30	-0.21	-0.89	14.00	0.06	0.12	31.43	-1.19	-0.83	31.43
BNDFC6- 5605	7.40	-0.11	-0.47	14.20	0.26	0.52	31.00	-1.62	-1.13	31.41
BNF7JM- 5601	7.50	-0.01	-0.04	14.50	0.56	1.12	31.15	-1.47	-1.02	31.15
BU3TET- 5601	7.50	-0.01	-0.04	13.00	-0.94	-1.90	35.20	2.58	1.80	35.23
BWQ6DX- 5601	7.40	-0.11	-0.47	13.40	-0.54	-1.09	33.52	0.90	0.63	33.52
BWVTKK- 5601	7.50	-0.01	-0.04	14.50	0.56	1.12	31.10	-1.52	-1.06	31.15
C9EQWY- 5605	5.45	-2.06	-8.73 X	10.18	-3.76	-7.58 X	32.40	-0.22	-0.15	32.37
CBHLF2- 5601	7.51	0.00	0.00	14.18	0.24	0.48	32.00	-0.62	-0.43	31.98
CBK8BG- 5605	7.50	-0.01	-0.04	13.50	-0.44	-0.89	33.80	1.18	0.83	33.75
CDVLRH- 5605	7.50	-0.01	-0.04	15.00	1.06	2.13	30.00	-2.62	-1.83	30.00
CEKH8G- 5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.30	-0.32	-0.22	32.39
CK8D3U- 5601	7.60	0.09	0.38	13.80	-0.14	-0.29	33.40	0.78	0.55	33.42
CP4YRB- 5605	7.70	0.19	0.80	13.60	-0.34	-0.69	34.48	1.86	1.30	34.48

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
CT63LJ- 5605	7.00	-0.51	-2.16	12.00	-1.94	-3.91 X	35.00	2.38	1.66	35.69
DGMH2M- 5601	7.60	0.09	0.38	14.20	0.26	0.52	32.30	-0.32	-0.22	32.36
DJVX9T- 5601	7.50	-0.01	-0.04	13.50	-0.44	-0.89	34.00	1.38	0.97	33.75
DTGYN3- 5601	7.53	0.02	0.08	14.19	0.25	0.50	32.00	-0.62	-0.43	32.05
DV8ZUQ- 5601	7.50	-0.01	-0.04	12.80	-1.14	-2.30	35.90	3.28	2.29	35.87
DXX7C3- 5601	7.50	-0.01	-0.04	13.80	-0.14	-0.29	32.92	0.30	0.21	32.92
DZJ9VW- 5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
E32PNZ- 5601	7.60	0.09	0.38	14.00	0.06	0.12	32.90	0.28	0.20	32.88
EBJT4E- 5605	7.50	-0.01	-0.04	13.50	-0.44	-0.89	34.00	1.38	0.97	33.75
EEFPKT- 5601	7.69	0.18	0.76	13.76	-0.18	-0.37	34.00	1.38	0.97	33.98
EGL8HP- 5601	8.00	0.49	2.07	12.00	-1.94	-3.91 X	42.00	9.38	6.55 X	41.81 X
ENKWZT- 5605	7.00	-0.51	-2.16	13.00	-0.94	-1.90	32.60	-0.02	-0.01	32.58
EQUAWH- 5601	7.50	-0.01	-0.04	15.00	1.06	2.13	30.00	-2.62	-1.83	30.00
EXRC72- 5605	7.50	-0.01	-0.04	14.20	0.26	0.52	31.90	-0.72	-0.50	31.88
EZYU6W- 5605	7.40	-0.11	-0.47	13.40	-0.54	-1.09	34.00	1.38	0.97	33.52
F8RLPV- 5605	7.60	0.09	0.38	13.90	-0.04	-0.08	33.20	0.58	0.41	33.15
FT9RHC- 5605	7.40	-0.11	-0.47	13.70	-0.24	-0.49	32.70	0.08	0.06	32.69
FYZ2TB- 5605	8.30	0.79	3.35 X	14.20	0.26	0.52	36.00	3.38	2.36	35.77
G6398D- 5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
GNEY4N-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
GQMEBU-5605	1.33	-6.18	-26.18 X	2.45	-11.49	-23.15 X	33.00	0.38	0.27	32.88
GVCRCRCH-5601	7.50	-0.01	-0.04	15.00	1.06	2.13	30.00	-2.62	-1.83	30.00
H6HH9C-5605	7.00	-0.51	-2.16	13.20	-0.74	-1.49	32.20	-0.42	-0.29	32.03
H9WT8E-5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
HBZNPW-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
HCGKGW-5601	7.50	-0.01	-0.04	13.50	-0.44	-0.89	33.70	1.08	0.76	33.75
HGQVAQ-5605	7.90	0.39	1.65	15.50	1.56	3.14 X	31.00	-1.62	-1.13	30.64
HKQAVU-5605	7.70	0.19	0.80	14.00	0.06	0.12	33.00	0.38	0.27	33.37
HKRY2D-5605	6.00	-1.51	-6.40 X	13.00	-0.94	-1.90	27.00	-5.62	-3.92 X	27.49 X
HTLCEE-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
HX389B-5601	7.73	0.22	0.93	13.50	-0.44	-0.89	34.93	2.31	1.62	34.93
J2WT9D-5605	8.00	0.49	2.07	15.00	1.06	2.13	32.00	-0.62	-0.43	32.23
JG76QD-5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
JHYBGW-5605	7.50	-0.01	-0.04	14.10	0.16	0.32	32.10	-0.52	-0.36	32.13
JLLCEC-5605	7.40	-0.11	-0.47	13.60	-0.34	-0.69	33.00	0.38	0.27	32.96
K28R3L-5601	7.60	0.09	0.38	14.00	0.06	0.12	32.90	0.28	0.20	32.88
K6BMLP-5605	7.00	-0.51	-2.16	14.00	0.06	0.12	30.00	-2.62	-1.83	30.00
KBYBGU-5601	7.40	-0.11	-0.47	14.40	0.46	0.92	30.92	-1.70	-1.18	30.92

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
KFQHZ3-5601	7.74	0.23	0.97	14.43	0.49	0.98	32.43	-0.19	-0.13	32.44
KGZKNM-5601	7.66	0.15	0.63	14.61	0.67	1.35	31.62	-1.00	-0.70	31.62
KHV7GD-5605	8.00	0.49	2.07	13.50	-0.44	-0.89	36.30	3.68	2.57	36.34
KK4HWU-5605	7.40	-0.11	-0.47	13.80	-0.14	-0.29	33.00	0.38	0.27	32.43
KLVELN-5605	7.60	0.09	0.38	14.00	0.06	0.12	33.00	0.38	0.27	32.88
KTH48J-5601	7.50	-0.01	-0.04	12.50	-1.44	-2.90	36.80	4.18	2.92	36.87
KWFKKD-5601	7.50	-0.01	-0.04	14.20	0.26	0.52	31.90	-0.72	-0.50	31.88
L7XP6H-5601	7.50	-0.01	-0.04	12.90	-1.04	-2.10	35.50	2.88	2.01	35.55
L8UPXA-5605	7.40	-0.11	-0.47	14.00	0.06	0.12	32.00	-0.62	-0.43	31.91
LAZKNK-5601	7.60	0.09	0.38	14.00	0.06	0.12	33.00	0.38	0.27	32.88
LNHCCR-5601	7.80	0.29	1.23	15.00	1.06	2.13	31.30	-1.32	-0.92	31.33
LQNX3D-5605	7.00	-0.51	-2.16	15.00	1.06	2.13	28.00	-4.62	-3.22 X	27.82 X
LYEH7P-5605	7.60	0.09	0.38	14.00	0.06	0.12	32.90	0.28	0.20	32.88
MAY6W7-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
MBUZTA-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
MM46QA-5601	7.50	-0.01	-0.04	13.60	-0.34	-0.69	33.00	0.38	0.27	33.47
MUN9WR-5601	7.49	-0.02	-0.09	14.25	0.31	0.62	31.70	-0.92	-0.64	31.71
MVEPU7-5601	7.80	0.29	1.23	13.69	-0.25	-0.51	34.70	2.08	1.46	34.73
NDBG7R-5605	8.00	0.49	2.07	14.40	0.46	0.92	34.00	1.38	0.97	33.75

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
NE46R9-5605	7.60	0.09	0.38	13.40	-0.54	-1.09	34.50	1.88	1.32	34.55
NEMGJ9-5605	7.57	0.06	0.25	13.75	-0.19	-0.39	33.40	0.78	0.55	33.40
NFXJ68-5605	7.40	-0.11	-0.47	13.80	-0.14	-0.29	32.00	-0.62	-0.43	32.43
NK9AEL-5605	1.14	-6.37	-26.98 X	2.11	-11.83	-23.84 X	32.70	0.08	0.06	32.70
NKEQT8-5605	8.00	0.49	2.07	15.00	1.06	2.13	32.00	-0.62	-0.43	32.23
NMEPU6-5601	8.00	0.49	2.07	14.00	0.06	0.12	34.85	2.23	1.56	34.85
NUHERC-5601	7.60	0.09	0.38	14.50	0.56	1.12	31.00	-1.62	-1.13	31.61
NUXWAN-5605	7.50	-0.01	-0.04	14.20	0.26	0.52	32.00	-0.62	-0.43	31.88
NXDR79-5605	7.60	0.09	0.38	13.76	-0.18	-0.37	34.00	1.38	0.97	33.53
NXHPLQ-5601	7.60	0.09	0.38	13.60	-0.34	-0.69	33.97	1.35	0.95	33.97
NYUPX8-5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
PC99FJ-5605	7.90	0.39	1.65	13.90	-0.04	-0.08	34.60	1.98	1.39	34.63
PDN9Y9-5601	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
PUR379-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
PV8YX9-5601	7.50	-0.01	-0.04	14.80	0.86	1.73	30.45	-2.17	-1.51	30.45
Q2QPVM-5601	8.00	0.49	2.07	13.00	-0.94	-1.90	38.00	5.38	3.76 X	37.98 X
Q3JKHV-5605	7.60	0.09	0.38	14.00	0.06	0.12	33.00	0.38	0.27	32.88
Q6QZRM-5601	7.80	0.29	1.23	14.20	0.26	0.52	33.30	0.68	0.48	33.32
Q6RPX6-5605	7.00	-0.51	-2.16	13.00	-0.94	-1.90	32.00	-0.62	-0.43	32.58

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
QANG4G-5601	7.59	0.08	0.34	14.32	0.38	0.76	32.01	-0.61	-0.42	32.01
QHCD3W-5601	7.58	0.07	0.30	14.49	0.55	1.10	31.54	-1.08	-0.75	31.54
QM8YY7-5601	7.56	0.05	0.21	13.95	0.01	0.02	32.83	0.21	0.15	32.82
R4XU24-5601	7.00	-0.51	-2.16	15.00	1.06	2.13	27.80	-4.82	-3.36 X	27.82 X
R8QNJH-5605	5.26	-2.25	-9.53 X	9.86	-4.08	-8.22 X	32.20	-0.42	-0.29	32.24
R97M48-5601	7.60	0.09	0.38	14.60	0.66	1.33	31.37	-1.25	-0.87	31.37
REBQQK-5605	7.40	-0.11	-0.47	14.00	0.06	0.12	32.00	-0.62	-0.43	31.91
RGDLAM-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39
RPRBBG-5601	7.80	0.29	1.23	13.30	-0.64	-1.29	36.00	3.38	2.36	35.91
RR2BD3-5605	7.47	-0.04	-0.17	14.02	0.08	0.16	32.00	-0.62	-0.43	32.20
RRYQHM-5601	7.63	0.12	0.51	14.29	0.35	0.70	32.30	-0.32	-0.22	32.27
TADLBL-5601	7.50	-0.01	-0.04	13.50	-0.44	-0.89	33.70	1.08	0.76	33.75
TE6WKJ-5605	7.70	0.19	0.80	13.80	-0.14	-0.29	34.00	1.38	0.97	33.92
TZ9EVL-5601	7.50	-0.01	-0.04	14.60	0.66	1.33	30.90	-1.72	-1.20	30.91
U7BDY3-5605	7.62	0.11	0.47	14.22	0.28	0.57	32.00	-0.62	-0.43	32.39
U7UUYH-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
UDU9M6-5601	8.00	0.49	2.07	15.00	1.06	2.13	32.23	-0.39	-0.27	32.23
UEKF6G-5605	1.99	-5.52	-23.38 X	3.64	-10.30	-20.76 X	33.10	0.48	0.34	33.14
UJEA3H-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.40	-0.22	-0.15	32.39

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
ULKUR4-5601	8.00	0.49	2.07	15.00	1.06	2.13	32.00	-0.62	-0.43	32.23
UVT78L-5605	7.40	-0.11	-0.47	13.80	-0.14	-0.29	32.40	-0.22	-0.15	32.43
UYQMKF-5605	7.60	0.09	0.38	14.00	0.06	0.12	32.90	0.28	0.20	32.88
V6YY62-5605	7.59	0.08	0.34	13.79	-0.15	-0.31	33.70	1.08	0.76	33.39
VMT78J-5601	7.50	-0.01	-0.04	14.60	0.66	1.33	30.91	-1.71	-1.19	30.91
VV6FGX-5601	7.60	0.09	0.38	14.10	0.16	0.32	33.00	0.38	0.27	32.62
VXUUZG-5605	7.60	0.09	0.38	13.80	-0.14	-0.29	33.60	0.98	0.69	33.42
W4ZMUC-5601	7.40	-0.11	-0.47	13.90	-0.04	-0.08	32.00	-0.62	-0.43	32.17
W69MJY-5605	7.50	-0.01	-0.04	13.50	-0.44	-0.89	33.70	1.08	0.76	33.75
W8YYPC-5601	7.22	-0.29	-1.23	13.48	-0.46	-0.93	32.40	-0.22	-0.15	32.39
WBYAJQ-5601	8.00	0.49	2.07	19.00	5.06	10.19 X	24.90	-7.72	-5.39 X	24.90 X
WKM294-5605	7.40	-0.11	-0.47	14.10	0.16	0.32	31.70	-0.92	-0.64	31.66
WQTD8V-5605	7.50	-0.01	-0.04	13.50	-0.44	-0.89	33.80	1.18	0.83	33.75
WTT6VE-5605	7.00	-0.51	-2.16	14.00	0.06	0.12	30.00	-2.62	-1.83	30.00
X949WZ-5601	7.60	0.09	0.38	13.00	-0.94	-1.90	35.80	3.18	2.22	35.78
XC4G2A-5601	7.60	0.09	0.38	13.00	-0.94	-1.90	36.00	3.38	2.36	35.78
XJMK9C-5601	7.60	0.09	0.38	13.10	-0.84	-1.70	35.50	2.88	2.01	35.46
XR34QQ-5605							31.00	-1.62	-1.13	X
XT9NFC-5601	7.00	-0.51	-2.16	14.50	0.56	1.12	28.90	-3.72	-2.60	28.87

TABLE 1
Stain E, continued

WebCode- Test	Width			Length			Angle			CalcAng
	mm	Diff	CPV	mm	Diff	CPV	Deg.	Diff	CPV	
Y2HDUA-5601	8.00	0.49	2.07	14.00	0.06	0.12	35.00	2.38	1.66	34.85
YGDUJ9-5601	7.40	-0.11	-0.47	14.40	0.46	0.92	30.90	-1.72	-1.20	30.92
YHABV6-5605	7.00	-0.51	-2.16	14.00	0.06	0.12	30.00	-2.62	-1.83	30.00
YHNW68-5605	6.70	-0.81	-3.43 X	13.30	-0.64	-1.29	30.00	-2.62	-1.83	30.25
YX367B-5605	3.42	-4.09	-17.32 X	6.12	-7.82	-15.76 X	34.00	1.38	0.97	33.97
Z2G3BC-5605	7.50	-0.01	-0.04	14.00	0.06	0.12	32.00	-0.62	-0.43	32.39
Z7QBKU-5605	7.50	-0.01	-0.04	13.80	-0.14	-0.29	33.00	0.38	0.27	32.92
Z83TX8-5601	7.56	0.05	0.21	14.09	0.15	0.30	32.50	-0.12	-0.08	32.45
Z9Y9A6-5601	7.20	-0.31	-1.31	14.00	0.06	0.12	31.90	-0.72	-0.50	30.95
ZE624Z-5605	7.60	0.09	0.38	13.50	-0.44	-0.89	34.30	1.68	1.18	34.26
ZLN828-5605	7.18	-0.33	-1.40	13.64	-0.30	-0.61	31.77	-0.85	-0.59	31.76
ZP3679-5605	7.32	-0.19	-0.81	13.99	0.05	0.10	31.52	-1.10	-0.77	31.55
ZXHNP9-5601	7.20	-0.31	-1.31	13.60	-0.34	-0.69	32.00	-0.62	-0.43	31.97
ZYCAJY-5601	7.00	-0.51	-2.16	14.00	0.06	0.12	30.00	-2.62	-1.83	30.00
Grand Mean	7.51			13.94			32.62			32.66
Standard Deviation	0.24			0.50			1.43			1.41
Participants Included in calculations	174			172			177			177
Participants excluded from calculations (indicated by X)	10			12			8			8

Stain E Preparation Angle: 28.2°

Pattern Description, Part 1

For each of the following patterns, indicate the single pattern type that best describes the image.

TABLE 2: Single Pattern Recognition

Item 2

WebCode-Test	Pattern Type	WebCode-Test	Pattern Type
2B2TBA-5605	Cast-off Pattern	6JJ9UU-5601	Cast-off Pattern
2QBHNB-5601	Cast-off Pattern	6NXYY-5601	Cast-off Pattern
2UVQZQ-5605	Cast-off Pattern	6REX4Q-5605	Cast-off Pattern
2XCUJ8-5605	Cast-off Pattern	6UH7E9-5601	Cast-off Pattern
2XF9YT-5601	Cast-off Pattern	6YEQJT-5601	Cast-off Pattern
33KATV-5605	Cast-off Pattern	74PZA2-5601	Cast-off Pattern
3CA32L-5605	Cast-off Pattern	777TXA-5605	Cast-off Pattern
3LYTME-5601	Cast-off Pattern	78NEWR-5601	Cast-off Pattern
3RJ9TW-5601	Cast-off Pattern	79VU4X-5605	Cast-off Pattern
3V34U4-5601	Cast-off Pattern	7AAQNP-5605	Cast-off Pattern
46QA9M-5601	Cast-off Pattern	7B463L-5605	Cast-off Pattern
4DEAGJ-5605	Cast-off Pattern	7L78KX-5601	Cast-off Pattern
4LR293-5605	Cast-off Pattern	7PJ8HP-5605	Cast-off Pattern
4Q3EQ2-5605	Cast-off Pattern	7QGHB8-5605	Cast-off Pattern
4U2QL2-5601	Cast-off Pattern	7XHPYM-5605	Cast-off Pattern
4YF94H-5605	Cast-off Pattern	7YTG6H-5601	Cast-off Pattern
6F327V-5605	Cast-off Pattern	89QW9R-5605	Cast-off Pattern

TABLE 2: Single Pattern Recognition

Item 2, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
8CAR9Y- 5601	Cast-off Pattern	C9EQWY- 5605	Cast-off Pattern
8JXE46- 5605	Cast-off Pattern	CBHLF2- 5601	Cast-off Pattern
8N8RL3- 5601	Cast-off Pattern	CBK8BG- 5605	Cast-off Pattern
8T3GBM- 5601	Cast-off Pattern	CDVLRH- 5605	Cast-off Pattern
8XCUTL- 5601	Cast-off Pattern	CEKH8G- 5601	Cast-off Pattern
8XVQC9- 5605	Cast-off Pattern	CK8D3U- 5601	Cast-off Pattern
8YNEWP- 5605	Cast-off Pattern	CP4YRB- 5605	Cast-off Pattern
93M8AK- 5601	Cast-off Pattern	CT63LJ- 5605	Cast-off Pattern
9HBM8P- 5605	Cast-off Pattern	DGMH2M- 5601	Cast-off Pattern
A67QM3- 5605	Cast-off Pattern	DJVX9T- 5601	Cast-off Pattern
ALBX24- 5601	Cast-off Pattern	DTGYN3- 5601	Cast-off Pattern
AWBNKQ- 5605	Cast-off Pattern	DV8ZUQ- 5601	Cast-off Pattern
B7VEKN- 5605	Cast-off Pattern	DXX7C3- 5601	Cast-off Pattern
BLAKT2- 5601	Impact Pattern	DY4NBX- 5601	Cast-off Pattern
BNDFC6- 5605	Cast-off Pattern	DZJ9VV- 5605	Cast-off Pattern
BNF7JM- 5601	Cast-off Pattern	E32PNZ- 5601	Cast-off Pattern
BU3TET- 5601	Cast-off Pattern	EBJT4E- 5605	Cast-off Pattern
BWQ6DX- 5601	Cast-off Pattern	EEFPKT- 5601	Cast-off Pattern
BWVKTK- 5601	Cast-off Pattern	EGL8HP- 5601	Cast-off Pattern

TABLE 2: Single Pattern Recognition

Item 2, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
ENKWZT- 5605	Cast-off Pattern	HX389B- 5601	Cast-off Pattern
EQUAWH- 5601	Cast-off Pattern	J2WT9D- 5605	Cast-off Pattern
EXRC72- 5605	Cast-off Pattern	JG76QD- 5601	Cast-off Pattern
EZYU6W- 5605	Cast-off Pattern	JHYBGW- 5605	Cast-off Pattern
F8RLPV- 5605	Cast-off Pattern	JLLCEC- 5605	Cast-off Pattern
FT9RHC- 5605	Cast-off Pattern	JVQWMR- 5601	Cast-off Pattern
FYZ2TB- 5605	Cast-off Pattern	K28R3L- 5601	Cast-off Pattern
G6398D- 5601	Cast-off Pattern	K6BMLP- 5605	Cast-off Pattern
GNEY4N- 5605	Cast-off Pattern	KBYBGU- 5601	Cast-off Pattern
GQMEBU- 5605	Cast-off Pattern	KFQHZ3- 5601	Cast-off Pattern
GVCRCH- 5601	Cast-off Pattern	KGZKNM- 5601	Cast-off Pattern
H6HH9C- 5605	Cast-off Pattern	KHV7GD- 5605	Wipe
H9WT8E- 5601	Cast-off Pattern	KK4HWU- 5605	Cast-off Pattern
HBZNPW- 5605	Cast-off Pattern	KLVELN- 5605	Cast-off Pattern
HCGKGW- 5601	Cast-off Pattern	KTH48J- 5601	Cast-off Pattern
HGQVAQ- 5605	Cast-off Pattern	KWFKKD- 5601	Cast-off Pattern
HKQAVU- 5605	Cast-off Pattern	L7XP6H- 5601	Cast-off Pattern
HKRY2D- 5605	Cast-off Pattern	L8UPXA- 5605	Cast-off Pattern
HTLCEE- 5605	Cast-off Pattern	LAZKNK- 5601	Cast-off Pattern

TABLE 2: Single Pattern Recognition

Item 2, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
LNHCCR-5601	Cast-off Pattern	NYUPX8-5601	Cast-off Pattern
LQNX3D-5605	Cast-off Pattern	PC99FJ-5605	Cast-off Pattern
LYEH7P-5605	Cast-off Pattern	PDN9Y9-5601	Projected Pattern
MAY6W7-5605	Cast-off Pattern	PUR379-5605	Cast-off Pattern
MBUZTA-5605	Cast-off Pattern	PV8YX9-5601	Cast-off Pattern
MM46QA-5601	Cast-off Pattern	Q2QPVM-5601	Cast-off Pattern
MUN9WR-5601	Cast-off Pattern	Q3JKHV-5605	Cast-off Pattern
MVEPU7-5601	Cast-off Pattern	Q6QZRM-5601	Cast-off Pattern
NDBG7R-5605	Cast-off Pattern	Q6RPX6-5605	Cast-off Pattern
NE46R9-5605	Cast-off Pattern	QANG4G-5601	Cast-off Pattern
NEMGJ9-5605	Cast-off Pattern	QHCD3W-5601	Cast-off Pattern
NFXJ68-5605	Cast-off Pattern	QM8YY7-5601	Cast-off Pattern
NK9AEL-5605	Cast-off Pattern	R4XU24-5601	Cast-off Pattern
NKEQT8-5605	Cast-off Pattern	R8QNJH-5605	Cast-off Pattern
NMEPU6-5601	Cast-off Pattern	R97M48-5601	Cast-off Pattern
NUHERC-5601	Cast-off Pattern	R9L7M4-5605	Cast-off Pattern
NUXWAN-5605	Cast-off Pattern	REBQQK-5605	Cast-off Pattern
NXDR79-5605	Cast-off Pattern	RGDLAM-5605	Cast-off Pattern
NXHPLQ-5601	Cast-off Pattern	RPRBBG-5601	Cast-off Pattern

TABLE 2: Single Pattern Recognition

Item 2, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
RR2BD3- 5605	Cast-off Pattern	W69MJY- 5605	Cast-off Pattern
RRYQHM- 5601	Cast-off Pattern	W8YYPC- 5601	Cast-off Pattern
TADLBL- 5601	Cast-off Pattern	WBYAJQ- 5601	Cast-off Pattern
TE6WKJ- 5605	Cast-off Pattern	WKM294- 5605	Cast-off Pattern
TX6M48- 5601	Cast-off Pattern	WQTD8V- 5605	Cast-off Pattern
TZ9EVL- 5601	Cast-off Pattern	WTT6VE- 5605	Cast-off Pattern
U7BDY3- 5605	Cast-off Pattern	X949WZ- 5601	Cast-off Pattern
U7UUYH- 5605	Cast-off Pattern	XC4G2A- 5601	Cast-off Pattern
UDU9M6- 5601	Cast-off Pattern	XGJPPA- 5605	Cast-off Pattern
UEKF6G- 5605	Cast-off Pattern	XJMK9C- 5601	Cast-off Pattern
UJEA3H- 5605	Cast-off Pattern	XR34QQ- 5605	Cast-off Pattern
ULKUR4- 5601	Cast-off Pattern	XT9NFC- 5601	Cast-off Pattern
UVT78L- 5605	Cast-off Pattern	Y2HDUA- 5601	Cast-off Pattern
UYQMKF- 5605	Cast-off Pattern	YGDUJ9- 5601	Cast-off Pattern
V6YY62- 5605	Cast-off Pattern	YHABV6- 5605	Cast-off Pattern
VMT78J- 5601	Cast-off Pattern	YHNNW68- 5605	Cast-off Pattern
VV6FGX- 5601	Cast-off Pattern	YX367B- 5605	Cast-off Pattern
VXUUZG- 5605	Cast-off Pattern	Z2G3BC- 5605	Cast-off Pattern
W4ZMUC- 5601	Cast-off Pattern	Z7QBKU- 5605	Cast-off Pattern

TABLE 2: Single Pattern Recognition

Item 2, continued

WebCode-Test	Pattern Type	WebCode-Test	Pattern Type
Z83TX8-5601	Cast-off Pattern		
Z9Y9A6-5601	Cast-off Pattern		
ZE624Z-5605	Cast-off Pattern		
ZLN828-5605	Cast-off Pattern		
ZP3679-5605	Cast-off Pattern		
ZXHNP9-5601	Cast-off Pattern		
ZYCAJY-5601	Cast-off Pattern		

**Pattern Types reported for Item 2
(Total Participants Responding = 193)**

<u>Pattern Type</u>	<u>Percent Reported</u>
Cast-off Pattern	190 (98.4%)
Impact Pattern	1 (0.5%)
Projected Pattern	1 (0.5%)
Wipe	1 (0.5%)

TABLE 2: Single Pattern Recognition

Item 3

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
2B2TBA- 5605	Wipe	6REX4Q- 5605	Wipe
2QBHNB- 5601	Wipe	6UH7E9- 5601	Wipe
2UVQZQ- 5605	Wipe	6YEQJT- 5601	Wipe
2XCUJ8- 5605	Wipe	74PZA2- 5601	Wipe
2XF9YT- 5601	Wipe	777TXA- 5605	Wipe
33KATV- 5605	Swipe	78NEWR- 5601	Wipe
3CA32L- 5605	Wipe	79VU4X- 5605	Wipe
3LYTME- 5601	Wipe	7AAQNP- 5605	Wipe
3RJ9TW- 5601	Wipe	7B463L- 5605	Wipe
3V34U4- 5601	Wipe	7L78KX- 5601	Wipe
46QA9M- 5601	Wipe	7PJ8HP- 5605	Wipe
4DEAGJ- 5605	Wipe	7QGHB8- 5605	Wipe
4LR293- 5605	Wipe	7XHPYM- 5605	Wipe
4Q3EQ2- 5605	Wipe	7YTG6H- 5601	Wipe
4U2QL2- 5601	Wipe	89QW9R- 5605	Wipe
4YF94H- 5605	Wipe	8CAR9Y- 5601	Wipe
6F327V- 5605	Wipe	8JXE46- 5605	Transfer Stain
6JJ9UU- 5601	Wipe	8N8RL3- 5601	Wipe
6NXYP- 5601	Wipe	8T3GBM- 5601	Wipe

TABLE 2: Single Pattern Recognition

Item 3, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
8XCUTL- 5601	Wipe	CEKH8G- 5601	Wipe
8XVQC9- 5605	Wipe	CK8D3U- 5601	Wipe
8YNEWP- 5605	Wipe	CP4YRB- 5605	Wipe
93M8AK- 5601	Wipe	CT63LJ- 5605	Wipe
9HBM8P- 5605	Wipe	DGMH2M- 5601	Wipe
A67QM3- 5605	Wipe	DJX9T- 5601	Wipe
ALBX24- 5601	Wipe	DTGYN3- 5601	Wipe
AWBNKQ- 5605	Wipe	DV8ZUQ- 5601	Wipe
B7VEKN- 5605	Wipe	DXX7C3- 5601	Wipe
BLAKT2- 5601	Wipe	DY4NBX- 5601	Wipe
BNDFC6- 5605	Wipe	DZJ9VV- 5605	Wipe
BNF7JM- 5601	Wipe	E32PNZ- 5601	Wipe
BU3TET- 5601	Wipe	EBJT4E- 5605	Wipe
BWQ6DX- 5601	Wipe	EEFPKT- 5601	Wipe
BWVTKK- 5601	Wipe	EGL8HP- 5601	Wipe
C9EQWY- 5605	Wipe	ENKWZT- 5605	Wipe
CBHLF2- 5601	Wipe	EQUAWH- 5601	Wipe
CBK8BG- 5605	Wipe	EXRC72- 5605	Wipe
CDVLRH- 5605	Wipe	EZYU6W- 5605	Wipe

TABLE 2: Single Pattern Recognition

Item 3, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
F8RLPV- 5605	Wipe	JLLCEC- 5605	Wipe
FT9RHC- 5605	Wipe	JVQWMR- 5601	Wipe
FYZ2TB- 5605	Wipe	K28R3L- 5601	Wipe
G6398D- 5601	Wipe	K6BMLP- 5605	Wipe
GNEY4N- 5605	Wipe	KBYBGU- 5601	Wipe
GQMEBU- 5605	Wipe	KFQHZ3- 5601	Wipe
GVCRCR- 5601	Wipe	KGZKNM- 5601	Wipe
H6HH9C- 5605	Swipe	KHV7GD- 5605	Saturation Stain
H9WT8E- 5601	Wipe	KK4HWU- 5605	Wipe
HBZNPW- 5605	Wipe	KLVELN- 5605	Wipe
HCGKGW- 5601	Wipe	KTH48J- 5601	Wipe
HGQVAQ- 5605	Wipe	KWFKKD- 5601	Wipe
HKQAVU- 5605	Wipe	L7XP6H- 5601	Wipe
HKRY2D- 5605	Wipe	L8UPXA- 5605	Wipe
HTLCEE- 5605	Wipe	LAZKNK- 5601	Wipe
HX389B- 5601	Wipe	LNHCCR- 5601	Wipe
J2WT9D- 5605	Wipe	LQNX3D- 5605	Wipe
JG76QD- 5601	Wipe	LYEH7P- 5605	Wipe
JHYBGW- 5605	Wipe	MAY6W7- 5605	Wipe

TABLE 2: Single Pattern Recognition

Item 3, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
MBUZTA- 5605	Wipe	PV8YX9- 5601	Wipe
MM46QA- 5601	Wipe	Q2QPVM- 5601	Wipe
MUN9WR- 5601	Wipe	Q3JKHV- 5605	Wipe
MVEPU7- 5601	Wipe	Q6QZRM- 5601	Wipe
NDBG7R- 5605	Wipe	Q6RPX6- 5605	Wipe
NE46R9- 5605	Wipe	QANG4G- 5601	Wipe
NEMGJ9- 5605	Wipe	QHCD3W- 5601	Wipe
NFXJ68- 5605	Wipe	QM8YY7- 5601	Wipe Pattern
NK9AEL- 5605	Wipe	R4XU24- 5601	Wipe
NKEQT8- 5605	Wipe	R8QNJH- 5605	Wipe
NMEPU6- 5601	Wipe	R97M48- 5601	Wipe
NUHERC- 5601	Swipe	R9L7M4- 5605	Swipe
NUXWAN- 5605	Wipe	REBQQK- 5605	Wipe
NXDR79- 5605	Wipe	RGDLAM- 5605	Wipe
NXHPLQ- 5601	Wipe	RPRBBG- 5601	Wipe
NYUPX8- 5601	Wipe	RR2BD3- 5605	Wipe
PC99FJ- 5605	Wipe	RRYQHM- 5601	Wipe
PDN9Y9- 5601	Wipe	TADLBL- 5601	Wipe
PUR379- 5605	Wipe	TE6WKJ- 5605	Transfer Stain

TABLE 2: Single Pattern Recognition

Item 3, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
TX6M48- 5601	Transfer Stain	WQTD8V- 5605	Wipe
TZ9EVL- 5601	Wipe	WTT6VE- 5605	Wipe
U7BDY3- 5605	Wipe	X949WZ- 5601	Wipe
U7UUYH- 5605	Wipe	XC4G2A- 5601	Wipe
UDU9M6- 5601	Wipe	XGJPPA- 5605	Wipe
UEKF6G- 5605	Wipe	XJMK9C- 5601	Wipe
UJEA3H- 5605	Wipe	XR34QQ- 5605	Wipe
ULKUR4- 5601	Wipe	XT9NFC- 5601	Wipe
UVT78L- 5605	Wipe	Y2HDUA- 5601	Wipe
UYQMKF- 5605	Wipe	YGDUJ9- 5601	Wipe
V6YY62- 5605	Wipe	YHABV6- 5605	Wipe
VMT78J- 5601	Wipe	YHNV68- 5605	Wipe
W6FGX- 5601	Wipe	YX367B- 5605	Swipe
VXUUZG- 5605	Wipe	Z2G3BC- 5605	Wipe
W4ZMUC- 5601	Wipe	Z7QBKU- 5605	Wipe
W69MJY- 5605	Wipe	Z83TX8- 5601	Wipe
W8YYPC- 5601	Wipe	Z9Y9A6- 5601	Wipe
WBYAJQ- 5601	Wipe	ZE624Z- 5605	Wipe
WKM294- 5605	Wipe	ZLN828- 5605	Wipe

TABLE 2: Single Pattern Recognition

Item 3, continued

WebCode-Test	Pattern Type	WebCode-Test	Pattern Type
ZP3679-5605	Wipe		
ZXHNP9-5601	Wipe		
ZYCAJY-5601	Swipe		

**Pattern Types reported for Item 3
(Total Participants Responding = 193)**

<u>Pattern Type</u>	<u>Percent Reported</u>
Wipe	182 (94.3%)
Swipe	6 (3.1%)
Transfer Stain	3 (1.6%)
Saturation Stain	1 (0.5%)
Wipe Pattern	1 (0.5%)

TABLE 2: Single Pattern Recognition

Item 4

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
2B2TBA-5605	Saturation Stain	6REX4Q-5605	Saturation Stain
2QBHNB-5601	Drip Stain	6UH7E9-5601	Saturation Stain
2UVQZQ-5605	Saturation Stain	6YEQJT-5601	Saturation Stain
2XCUJ8-5605	Saturation Stain	74PZA2-5601	Saturation Stain
2XF9YT-5601	Saturation Stain	777TXA-5605	Saturation Stain
33KATV-5605	Saturation Stain	78NEWR-5601	Drip Stain
3CA32L-5605	Saturation Stain	79VU4X-5605	Saturation Stain
3LYTME-5601	Saturation Stain	7AAQNP-5605	Saturation Stain
3RJ9TW-5601	Saturation Stain	7B463L-5605	Saturation Stain
3V34U4-5601	Saturation Stain	7L78KX-5601	Saturation Stain
46QA9M-5601	Saturation Stain	7PJ8HP-5605	Saturation Stain
4DEAGJ-5605	Saturation Stain	7QGHB8-5605	Saturation Stain
4LR293-5605	Saturation Stain	7XHPYM-5605	Saturation Stain
4Q3EQ2-5605	Saturation Stain	7YTG6H-5601	Drip Stain
4U2QL2-5601	Saturation Stain	89QW9R-5605	Drip Stain
4YF94H-5605	Saturation Stain	8CAR9Y-5601	Saturation Stain
6F327V-5605	Saturation Stain	8JXE46-5605	Saturation Stain
6JJ9UU-5601	Saturation Stain	8N8RL3-5601	Saturation Stain
6NXYYP-5601	Saturation Stain	8T3GBM-5601	Saturation Stain

TABLE 2: Single Pattern Recognition

Item 4, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
8XCUTL- 5601	Drip Stain	CEKH8G- 5601	Saturation Stain
8XVQC9- 5605	Saturation Stain	CK8D3U- 5601	Saturation Stain
8YNEWP- 5605	Drip Stain	CP4YRB- 5605	Drip Pattern
93M8AK- 5601	Saturation Stain	CT63LJ- 5605	Saturation Stain
9HBM8P- 5605	Saturation Stain	DGMH2M- 5601	Saturation Stain
A67QM3- 5605	Saturation Stain	DJX9T- 5601	Saturation Stain
ALBX24- 5601	Saturation Stain	DTGYN3- 5601	Saturation Stain
AWBNKQ- 5605	Drip Stain	DV8ZUQ- 5601	Saturation Stain
B7VEKN- 5605	Saturation Stain	DXX7C3- 5601	Saturation Stain
BLAKT2- 5601	Saturation Stain	DY4NBX- 5601	Saturation Stain
BNDFC6- 5605	Saturation Stain	DZJ9VV- 5605	Saturation Stain
BNF7JM- 5601	Saturation Stain	E32PNZ- 5601	Saturation Stain
BU3TET- 5601	Saturation Stain	EBJT4E- 5605	Saturation Stain
BWQ6DX- 5601	Drip Stain	EEFPKT- 5601	Saturation Stain
BWVGTK- 5601	Saturation Stain	EGL8HP- 5601	Saturation Stain
C9EQWY- 5605	Saturation Stain	ENKWZT- 5605	Saturation Stain
CBHLF2- 5601	Saturation Stain	EQUAWH- 5601	Saturation Stain
CBK8BG- 5605	Saturation Stain	EXRC72- 5605	Saturation Stain
CDVLRH- 5605	Drip Stain	EZYU6W- 5605	Saturation Stain

TABLE 2: Single Pattern Recognition

Item 4, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
F8RLPV- 5605	Drip Pattern	JLLCEC- 5605	Saturation Stain
FT9RHC- 5605	Saturation Stain	JVQWMR- 5601	Saturation Stain
FYZ2TB- 5605	Saturation Stain	K28R3L- 5601	Saturation Stain
G6398D- 5601	Saturation Stain	K6BMLP- 5605	Saturation Stain
GNEY4N- 5605	Saturation Stain	KBYBGU- 5601	Saturation Stain
GQMEBU- 5605	Saturation Stain	KFQHZ3- 5601	Saturation Stain
GVCRCRCH- 5601	Saturation Stain	KGZKNM- 5601	Saturation Stain
H6HH9C- 5605	Saturation Stain	KHV7GD- 5605	Swipe
H9WT8E- 5601	Saturation Stain	KK4HWU- 5605	Saturation Stain
HBZNPW- 5605	Saturation Stain	KLVELN- 5605	Saturation Stain
HCGKGW- 5601	Saturation Stain	KTH48J- 5601	Saturation Stain
HGQVAQ- 5605	Saturation Stain	KWFKKD- 5601	Saturation Stain
HKQAVU- 5605	Saturation Stain	L7XP6H- 5601	Saturation Stain
HKRY2D- 5605	Saturation Stain	L8UPXA- 5605	Saturation Stain
HTLCEE- 5605	Saturation Stain	LAZKNK- 5601	Saturation Stain
HX389B- 5601	Saturation Stain	LNHCCR- 5601	Saturation Stain
J2WT9D- 5605	Saturation Stain	LQNX3D- 5605	Drip Stain
JG76QD- 5601	Drip Stain	LYEH7P- 5605	Saturation Stain
JHYBGW- 5605	Saturation Stain	MAY6W7- 5605	Saturation Stain

TABLE 2: Single Pattern Recognition

Item 4, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
MBUZTA-5605	Saturation Stain	PV8YX9-5601	Saturation Stain
MM46QA-5601	Saturation Stain	Q2QPVM-5601	Saturation Stain
MUN9WR-5601	Saturation Stain	Q3JKHV-5605	Saturation Stain
MVEPU7-5601	Saturation Stain	Q6QZRM-5601	Saturation Stain
NDBG7R-5605	Saturation Stain	Q6RPX6-5605	Saturation Stain
NE46R9-5605	Saturation Stain	QANG4G-5601	Saturation Stain
NEMGJ9-5605	Saturation Stain	QHCD3W-5601	Saturation Stain
NFXJ68-5605	Saturation Stain	QM8YY7-5601	Saturation Stain
NK9AEL-5605	Saturation Stain	R4XU24-5601	Drip Stain
NKEQT8-5605	Drip Stain	R8QNJH-5605	Saturation Stain
NMEPU6-5601	Saturation Stain	R97M48-5601	Saturation Stain
NUHERC-5601	Saturation Stain	R9L7M4-5605	Saturation Stain
NUXWAN-5605	Saturation Stain	REBQQK-5605	Saturation Stain
NXDR79-5605	Saturation Stain	RGDLAM-5605	Saturation Stain
NXHPLQ-5601	Saturation Stain	RPRBBG-5601	Saturation Stain
NYUPX8-5601	Saturation Stain	RR2BD3-5605	Saturation Stain
PC99FJ-5605	Saturation Stain	RRYQHM-5601	Saturation Stain
PDN9Y9-5601	Saturation Stain	TADLBL-5601	Saturation Stain
PUR379-5605	Saturation Stain	TE6WKJ-5605	Saturation Stain

TABLE 2: Single Pattern Recognition

Item 4, continued

WebCode- Test	Pattern Type	WebCode- Test	Pattern Type
TX6M48-5601	Saturation Stain	WQTD8V-5605	Saturation Stain
TZ9EVL-5601	Saturation Stain	WTT6VE-5605	Saturation Stain
U7BDY3-5605	Saturation Stain	X949WZ-5601	Saturation Stain
U7UUYH-5605	Saturation Stain	XC4G2A-5601	Saturation Stain
UDU9M6-5601	Saturation Stain	XGJPPA-5605	Drip Pattern
UEKF6G-5605	Saturation Stain	XJMK9C-5601	Saturation Stain
UJEA3H-5605	Saturation Stain	XR34QQ-5605	Saturation Stain
ULKUR4-5601	Drip Stain	XT9NFC-5601	Saturation Stain
UVT78L-5605	Saturation Stain	Y2HDUA-5601	Saturation Stain
UYQMKF-5605	Saturation Stain	YGDUIJ9-5601	Saturation Stain
V6YY62-5605	Saturation Stain	YHABV6-5605	Transfer Stain
VMT78J-5601	Saturation Stain	YHNW68-5605	Saturation Stain
W6FGX-5601	Drip Stain	YX367B-5605	Saturation Stain
VXUUZG-5605	Saturation Stain	Z2G3BC-5605	Saturation Stain
W4ZMUC-5601	Saturation Stain	Z7QBKU-5605	Saturation Stain
W69MJY-5605	Saturation Stain	Z83TX8-5601	Saturation Stain
W8YYPC-5601	Saturation Stain	Z9Y9A6-5601	Saturation Stain
WBYAJQ-5601	Saturation Stain	ZE624Z-5605	Saturation Stain
WKM294-5605	Saturation Stain	ZLN828-5605	Saturation Stain

TABLE 2: Single Pattern Recognition

Item 4, continued

WebCode-Test	Pattern Type	WebCode-Test	Pattern Type
ZP3679-5605	Saturation Stain		
ZXHNP9-5601	Saturation Stain		
ZYCAJY-5601	Drip Stain		

**Pattern Types reported for Item 4
(Total Participants Responding = 193)**

<u>Pattern Type</u>	<u>Percent Reported</u>
Saturation Stain	172 (89.1%)
Drip Stain	16 (8.3%)
Drip Pattern	3 (1.6%)
Swipe	1 (0.5%)
Transfer Stain	1 (0.5%)

Pattern Description, Part 2

TABLE 3: Recognition and Description

Item 5

WebCode-Test	Detailed Pattern Description
2B2TBA-5605	Stains consistent with a projected pattern were present on the wall. Flows were noted on the wall below the larger stains. Wipes were noted through some of the flow.
2QBHNB-5601	The pattern on the wall is consistent with a projected pattern (ejected blood under pressure). These are higher volume events which are shown by the size of the stains and the lines (flow) of blood down the wall due to gravity. The patterns going left to right (Less blood in system = less pressure). There are wipes through the middle and right stains. Both wipes are going up and to the right at approximate 30 degree angles.
2UVQZQ-5605	Projected stains with flow were present on the drywall. Some flow had been wiped through, leaving perimeter stains.
2XCUJ8-5605	A projected pattern (three irregular stains with flows) could be observed on a photo taking into account information that "pattern was found on a wall next to a deceased victim with a laceration to the throat" (Item 5 description). Altered stains could be also observed on flows of two of stains (first and second calculating from a right) creating a projected pattern (it looks like an effect of strong blast of air).
2XF9YT-5601	Three projected patterns are observed: one at the upper left-hand corner, another slightly downwards and to the right of that, and another to the middle-right portion of the photo. All three projected patterns resulted in a flow of the blood on the target. Some satellite stains are noted around the middle, projected pattern. Both the middle and right-most projected patterns also exhibiting wipes in an upward, diagonal motion to the right (as you face the photo). The wipes appear to have occurred while the blood was still flowing, as a skeletonized outline of the flow pattern is noted, and the flow continued over the skeletonized stains.
33KATV-5605	Projected pattern, 3 larger drops has hit the wall. Flow pattern downwards from the projected stains. Wipe pattern from left to right on the flowpatterns in the middle and to the right.
3CA32L-5605	Three projected bloodstains are observed across the top of the image. The projected bloodstain pattern resulted from the ejection of blood under hydraulic pressure, possibly from a breach in the circulatory system. Multiple flow stains are observed originating from the projected bloodstains in the image. The flow stains have a downward movement on the surface due to gravity. Wipe bloodstains are observed across the flow stains originating from the center and right projected stains in the image. The wipe bloodstains are altered stains resulting from an object moving through the preexisting flow bloodstain. The directionality of the wipe pattern is from left to right across the image.
3LYTME-5601	There is a projected pattern with associated flow on the target surface. Areas of the projected pattern have been altered by wipes with visible perimeter staining present.
3RJ9TW-5601	A projected pattern with multiple flows which include satellite droplets in a downward motion due to gravity. A wipe pattern from the middle segment of the pattern in a diagonal direction (up-right) to the 3rd segment on the right. Drip pattern in the bottom right, which is a part of the projected pattern mentioned above.
3V34U4-5601	A complex bloodstain pattern consisting of a projected bloodstain pattern with flow and wipes was distributed over the entire 250mm x 300mm image. Three irregularly-shaped primary (parent) bloodstains with well-defined and smooth margins are distributed across the width of the photo and from slightly above the center of the photo to the top. The size of each of the primary bloodstains are as follows, from left to right, ~25mm x 45mm, ~11mm x 25mm, and ~20mm x 20mm. Each of the three primary bloodstains exhibited associated flow in the general downward directionality and runs through the bottom of the image. Overall, there are at least 8 separate flow patterns. The two flow patterns from the middle primary bloodstain and the right primary

TABLE 3: Recognition and Description

Item 5, continued

WebCode- Test	Detailed Pattern Description
	bloodstain and its three associated flow patterns all include alterations. Striations and feathering at the right ends of the wipes indicate left to right wipes (slight upward directionality) of the pre-existing stains. Faint perimeter staining is also present where the flow patterns have been wiped through.
46QA9M- 5601	The image contains a projected bloodstain pattern that consists of three projected stains on the upper half of the image that are descending in height of deposition on the wall from the left of the image to the right. Each of the three projected stains have associated flow patterns running down past the bottom of the image. The flow patterns associated with the two projected stains to the right and middle of the image have been altered as the result of an object moving through the stains causing a wipe pattern.
4DEAGJ- 5605	Three separated groups of projected - directionality left to right - patterns are joined by multiple flow patterns. The order of these groups is questionable. Flow patterns in the middle and right groups are altered by wipe pattern from left to right. Wipe must happen right after projections, because flows continued after this altering. If it was a single wipe, the wiping object should have been at least 10 cm in size, and soft (for example a piece of sponge) as the altered pattern is not uniform.
4LR293- 5605	With the photograph in the proper orientation, there were three (3) stains that were roughly elliptical when they were deposited. The stains were 45mm x 15mm (1.8 x 0.6"), 20mm x 15mm (0.8 x 0.6"), and 45mm x 30mm (1.8 x 1.2"). These stains had large enough volumes of blood to have flow downward from each of them. The stains were arranged in a roughly linear orientation. The directionality of the stains was from left to right. This was a projected pattern. Near the middle stain of the projected pattern were at least seven (7) small stains, circular to oval to elliptical in shape with regular margins. The stains indicated directionality upward and slightly to the left. These stains all were spatter stains. It is not possible to tell from the photograph if the spatter stains came before or after the projected pattern. Within and around the flows that extended from the middle and right projected stains were several stains with feathered edges and striations within the stains. There were faint perimeter stains of the parallel edges of the flows. These were wipes created when an object wiped through the flows within seconds after the flows were deposited. There was sufficient volume within some of the flows to recreate part of the flows after the wipes were created. The directionality of the feathered edges of the wipes indicate the object that created the wipes was moving from lower left to the upper right of the photo. There were darker spots within some of the flows. They were an effect of rougher areas of the target surface.
4Q3EQ2- 5605	There are three parent reddish-brown stains across the top of the overall pattern, with two or more flow patterns originating from each of these parent reddish-brown stains. This pattern is consistent with a projected pattern. There are wipe patterns through two of the parent reddish-brown stains traveling towards the right side of the overall pattern.
4U2QL2- 5601	The bloodstain on item 5 is located on a vertical painted drywall surface. Three elliptical stains are distributed in a linear pattern along the wall. The ellipses are large, between 2 and 5 centimeters in length. There are flow patterns in each stain due to the volume of the blood in the stains. This pattern is consistent with a projected pattern, where blood is ejected under pressure, typically from a breached artery. The scene description indicated the victim was found with a laceration to the throat, which is consistent with a projected bloodstain pattern. Additionally, the pattern has been disturbed and therefore should be considered an altered stain. Movement is observed in the flow patterns of two of the elliptical stains, where the original flow pattern has been disturbed by an object contacting the flow patterns and moving upwards and left to right. This movement is consistent with a wipe pattern. Some skeletonization is observed in the flow patterns; however, it appears some blood continued to flow down the wall after the wipe occurred.

TABLE 3: Recognition and Description

Item 5, continued

WebCode- Test	Detailed Pattern Description
4YF94H- 5605	<p>A projected pattern is observed overall in the image. Projected pattern: A bloodstain pattern resulting from the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system. Multiple flows were observed extending downward from the projected stains. Flow: A bloodstain resulting from the movement of a volume of blood on a surface due to gravity or movement of the target. A wipe is observed on the right half of the image, intersecting the downward flows. The directionality of the wipe is from left to right and slightly upward. Wipe: An altered stain resulting from an object moving through a preexisting wet bloodstain. Directionality: The characteristic of a bloodstain that indicates the direction blood was moving at the time of deposition.</p>
6F327V- 5605	<p>Item 5 is an image with an 'L' scale positioned in the top left corner of the photograph. This photograph depicts staining characteristic of a projected pattern. When discussing each of the projected patterns within this image, the stains were arbitrarily numbered as 1, 2, and 3 (from left to right), by the analyst. Each of these three projected patterns flow downward on this vertical plane. A wipe going from left to right and slightly upward was present through blood flowing downward from projected stains 2 and 3. Each of the two flow stains coming from projected stain 2 were wiped separately, with the alteration/wipe to the flow on the right occurring prior to the flow on the left. The wiping of each blood flow occurred separately and not one fluid motion over the entire wall. After the flow from projected stains 2 and 3 were wiped; additional blood began to flow again. Perimeter stains were present after the initial wiping of these flowing bloodstains. Drip stains were present from the left projected stain and at the bottom of the image, beneath projected stain 3. Each of these drip stains flowed downward on this vertical surface. Small spatter stains (less than 1mm) were present near the top of projected pattern 2. Small stains (less than 1mm), with an upward directionality, were visible intermittently throughout areas of this wall.</p>
6JJ9UU- 5601	<p>The target contains three projected patterns, each with blood flow toward gravity. There are at least four sections of the blood flow (under two projected pattern areas) that are altered. It appears that an unknown force altered these areas of blood flow in a slightly upward direction, left to right, as the blood was actively flowing.</p>
6NXYY- 5601	<p>There were red/brown coloured stains with the appearance of blood on the painted drywall (item 5). In my opinion, these probable bloodstains consisted of a projected pattern that was made up by three individual projected stains. Two of these projected stains, in my opinion have been subsequently wiped through, with the object or objects moving through the stains from left to right and slightly upwards.</p>
6REX4Q- 5605	<p>Projected pattern from left to right with associated downward flow pattern. Parts of the flow pattern have been altered by a wipe from the lower left towards the upper right.</p>
6UH7E9- 5601	<p>There is a projected pattern with associated flow on the target. Part of the pattern was altered via wipes, leaving perimeter stains.</p>
6YEQJT- 5601	<p>There is a pattern of projected blood, i.e. that formed as a result of the ejection of blood under pressure from a wound. The projected blood has been intercepted by the vertical surface and has flowed down the surface under gravity. Subsequent to its deposition on and running down the vertical surface, the blood staining has been wiped in a bottom left to top right direction. The period of time between the deposition/running of the blood and the wiping was sufficient to allow partial drying of the staining at the edges of the flow patterns. Following the wiping action, further blood has flowed down the surface under gravity.</p>
74PZA2- 5601	<p>There is a projected pattern on the drywall that exhibits large volume staining with associated flow and some satellite stains. Wipes have altered sections of the existing bloodstaining leaving behind perimeter staining.</p>

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
777TXA-5605	<p>The photograph marked Item #5 contains a complex bloodstain pattern consistent with a projected bloodstain pattern and a wipe bloodstain pattern. The overall pattern consists of a series of related large elliptical bloodstains with significant volume in an arch or possible serpentine shape. Bloodstaining appears to continue outside the frame of the photograph and that possibly the entire pattern was not captured for analysis; therefore, overall pattern size is undetermined. The three large semi-elliptical bloodstains range from approximately 2.5 cm to 1.5 cm in width and approximately 1 cm to 1.3 cm in length, with approximately 6 cm between each bloodstain. The large volume in the elliptical bloodstains is evident in the individual bloodstains by the amount of downward flow observed. The flow continues down with a minimum length of 29 cm as the flow continues outside the frame of the submitted photograph. The downward flowing bloodstains beneath two of the ellipses (on the right half of the photograph) appear to have been wiped. The wipe appears to have occurred in a left to right and upward motion based on the feather present and the altered result (perimeter staining) of the preexisting flow bloodstain. In addition, the volume of the elliptical bloodstains appears sufficient to allow flow down after the wiping occurred. Conclusion: The photograph contains a complex bloodstain pattern consistent with a projected bloodstain, a bloodstain resulting from the ejection of blood under hydraulic pressure; and a wipe pattern, an altered stain resulting from an object moving through a preexisting wet bloodstain.</p>
78NEWR-5601	<p>Item 5 shows a projected pattern of blood staining caused by blood hitting the target drywall under pressure and subsequently flowing downward under gravity. This pattern is comprised of three adjacent flows of blood which decrease in height from left to right, possibly caused by a decrease in pressure. The second and third flow of blood have subsequently been altered by a wipe action from left to right in a slight upward direction. In our opinion, this pattern could be explained by the deceased having been upright when he sustained the injury to his throat, causing his blood to be projected under pressure on to the drywall with a loss in blood pressure as he moved from left to right. Some of the blood has then been altered by movement of a person or object moving through the wet blood.</p>
79VU4X-5605	<p>Three projected are present with accompanying flow patterns downward from the main stains. The second and third stains from the left show wipes through the flow patterns in a slightly upward diagonal path from left to right resulting in perimeter stains in the flow patterns.</p>
7AAQNP-5605	<p>Item 5 shown 3 groups of projected pattern. 2 in 3 groups (middle and right groups) has a wipe pattern in direction upward and left to right.</p>
7B463L-5605	<p>This is a projected pattern with three individual projected stains in the top plane of the image, as indicated by the large volume of blood at the top and blood flow, due to gravity, from these larger stains. Both the center stain and the stain on the right side have a wipe pattern through them. The stain in the center has a wipe pattern through the blood flow, and the stain on the right has a wipe primarily through the flow, but also through portions of the projected stain at the top. The wipe pattern has a left to right directionality. After the wipe pattern occurred, blood continued to flow down as the flow is deposited on top of portions of the wipe pattern. Perimeter stains, as a result of the wipe, are also observed in the blood flow.</p>
7L78KX-5601	<p>The three blood stain patterns present on the wall are projected patterns. These three projected patterns have a flow in a downward direction due to gravity. The two projected patterns on the right have wipe stains present through the patterns, which were caused by an unknown object or item that moved from left to right through the preexisting blood stains present on the wall.</p>
7PJ8HP-5605	<p>I saw in this target an arterial spurting or arterial gush pattern (projected pattern) resulting from the throat laceration and cause the ejection of the blood under hydraulic pressure, and an a wipe pattern from left to right making a transfer of blood to an unstained blood surface.</p>

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
7QGH8-5605	The result of my evaluation is as follows: Three projected bloodstains were present on the upper portion of the image. Each projected bloodstain had an associated downward flow pattern. Two of the three projected bloodstains exhibited wipe patterns that appeared to travel in left to right direction.
7XHPYM-5605	The projected pattern consisted of three large stains with left to right directionality on the drywall. There were multiple flow patterns from each of the stains. From the flow and from one of the large stains were multiple wipe patterns and perimeter stains. The wipes were left to right with a slight upward directionality.
7YT6H-5601	Three blood patterns are observed corresponding to projections possibly ejected from the throat cut found in the victim (according to contextual data provided) and expelled from it under blood pressure. In each of them, a flow pattern produced by the vertical drop in blood volume on the target, previously projected and due to gravity, is also observed. In the two patterns on the right, wipe patterns are also observed produced by the support of a clean surface on the flow patterns and then sliding from left to right and from bottom to top. To sum up: there are projection patterns, flow patterns and wipe patterns.
89QW9R-5605	Projected patter with a flow pattern. Two of the flow patterns have secondary wipe patterns with the direction of movements being lower-left to upper-right. Apparent pooling at bottom of image which is not completely visible in image.
8CAR9Y-5601	Complex bloodstain pattern over the entire 10.5" x 11" frame of the image. Three irregular shaped spatter bloodstains at the top of the pattern, each with smooth margins and flow. The general size of the irregular shaped parent stains are, from left to right: 3x4cm, 1x2cm, and 2x3cm. All flow is downward and runs through the bottom of the submitted image. The flow pattern from the middle stain and both the flow and parent stain on the right all include alterations (including perimeter stains) with distribution and striations indicating left to right and slightly upward wipes of the pre-existing stains. A 2.5x12mm elliptical drip bloodstain parallel to the flow is in the lower right corner of the image. Conclusions: Projected pattern with flow and wipes.
8JXE46-5605	A pattern consistent with a projected pattern is observed from the upper left of the photo (corner next to the scale)to the middle of the right side of the photo. Wipes are observed through the flow in two of the projected stains.
8N8RL3-5601	The pattern consists of 3 projected bloodstain patterns with flow patterns in the downward direction. The bloodstain patterns located in the center and right have altered stains from wipes that occur in a left to right direction. There are perimeter stains present on the stains that have been altered.
8T3GBM-5601	The pattern consists of three general areas with an arc distribution. The three areas or bloodstains have a bulbous end with linear flow running down the vertical plane. The flow stains measure ~5mm in width. Based on the size, shape, distribution and location of the bloodstains the pattern is consistent with projected. Towards the bottom and right of the projected pattern there is a disturbed area. The disturbed area consists of feathering and perimeter staining towards the right and up. The disturbed or altered area is ~7 1/2" x ~3 1/2" (at it widest). Based on the size, shape, distribution and location the altered area is indicative of a wipe.
8XCUTL-5601	Projected bloodstain pattern with associated flow patterns. Some of the pre-existing flow patterns have been wiped through by an unknown object whilst the blood was wet. Direction of wipes is left to right of the photograph.
8XVQC9-5605	This complex pattern consists of three (3) separate projected bloodstains with associated flow from each. Traversing the flow associated with the center and right projected stains, a wipe, moving from left to right and generally upward, crosses. Perimeter staining is noted in the areas

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
8YNEWP-5605	where the wipe traverses the flow.
93M8AK-5601	Pattern is consistent with multiple deposits with enough volume to produce a passive flow down the wall. After deposition an object wiped across the flow area from left to right. Item 5 (painted drywall – vertical plane): The wall section visible in the photograph contains three distinct bloodstains each decreasing in height on the wall from left to right. The stains were labeled as stains A, B and C where stain A is the left most stain, stain B is the middle stain and stain C is the right most stain. Stains A through C are all flow pattern stains, a bloodstain resulting from the movement of a volume of blood on a surface due to gravity or movement of the target, that appear to flow in a downward direction consistent with gravity. All stains have an irregularly shaped portion at the top of the stain that become multiple continuous elongated stains underneath. Both stain B and stain C also have a wipe pattern, an altered stain resulting from an object moving through a preexisting wet bloodstain, with directionality going from left to right and slightly upward. Lastly, underneath stain C, between the left most and middle elongated stains, is an elliptical drip stain, a bloodstain resulting from a falling drop that formed due to gravity, which was labeled as stain D.
9HBM8P-5605	High volume stains with associated flow patterns and some associated secondary spatter. The overall shape of some of the parent stains, though not distinct, gives an indication that they were travelling with an approximately horizontal trajectory. Displacement of flow patterns (especially those exhibiting a curved path) to the right of the parent stains indicate momentum moving from left to right – therefore source of blood is to the left of the pattern. Flow pattern/runs have been disturbed through contact by an object moving in a left to right and upward direction. This contact has occurred whilst the blood volume from the parent stains has still been running under gravity (ie soon after initial deposition). Projected pattern.
A67QM3-5605	There appears to be three possible projected patterns present in the image. One in the upper left, one just below and to the right, and a third below and to the right of the second pattern. Flow is present in all three of the projected patterns. There appears to be a wipe stain in the lower portion of the second projected pattern in the area of the blood flow. There is another wipe pattern in the blood flow from the third projected pattern. This wipe stain is just above and to the right of the first wipe stain. It appears that the second wipe pattern was a continuation of the first wipe stain. Both stains demonstrate possible directionality from lower left toward the upper right of the image. The flow patterns that contained the wipe marks both appear to have blood flow that occurred after the wipe was made.
ALBX24-5601	Three large volume stains with flow down the target. Large volume stains consistent with a projected pattern. Some of the flow patterns were altered with a wipe.
AWBNKQ-5605	Photo showing drywall in a vertical plane. Starting in the upper left hand corner is a projected pattern with the pattern continuing to the right and moving slightly lower on the drywall. The projected patterns all contain flow. The center and right most stains are altered, indicating movement to the right in a wipe pattern. Flow continues after the wipe pattern was created.
B7VEKN-5605	(3) large volume stains with elliptical leading edges, some satellite stains, left to right directionality. The physical characteristics of these stains provide support for their being projected stains. The volume of each of these (3) stains was great enough to rest in the formation of blood flows. The flows in the (2) of the large volume stains (middle & farthest to the right) were physically altered when something wiped through the flows. This wiping action was from left to right and upward. A minimal amount of periphery staining was observed within some of the altered flows.
BLAKT2-5601	This bloodstain pattern appears to be projected blood on a target surface (wall) from a wound, with gravitational flow down the vertical plane (wall). It is an altered stain with a wipe through it with left to right and slightly upward directionality and feathering. The edge characteristics of the

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	gravitational flow suggest the projected bloodstain was partially dry when an object wiped through it.
BNDFC6-5605	This item a photograph of what is reported to be a portion of vertical painted drywall with the request to describe the patterns noted in the photograph. The pattern depicted in this photograph is a series of three projection patterns spanning from the upper left corner to the middle of the image on the right side. All three projection stains have flow downward from them. The middle and right-most flows are disturbed with a wipe pattern going from left to right and slightly upward across the flow and into the right projection pattern.
BNF7JM-5601	The depicted photograph contains stains which were described as projected, wipe and flow patterns. For administrative purposes the three () main stains were labeled as A-C from left to right based on the included scale. Stains B and C displayed wipe patterns with directionally from left to right and upward.
BU3TET-5601	The pattern on the drywall is that of three projected patterns that have a directionality of left to right. After impact, the blood from each pattern flowed down the vertical plane. On the right two projected patterns, there are wipes that go from left to right, which occurred after the flow from the projected patterns.
BWQ6DX-5601	3 distinct projected bloodstain patterns displaying movement along the contours of the target surface. Wipe patterns with movement from left to right were observed in the center stain and the right stain.
BWVTK-5601	Three areas of bloodstaining were present adjacent to each other on the wall. All areas had flows of blood extending from the main bloodstain down the wall. Some small circular and elliptical bloodstains were also associated with these areas of bloodstaining. A reduction in the height of the three bloodstains was observed across the wall from left to right. These bloodstains are characteristic of a projected pattern, which is caused by the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system. Wispy/feathered bloodstaining extended from the flows in the second and third bloodstains across the wall. The remains of the outline of the flows were evident in these areas indicating these stains has been caused by an object moving across the projected pattern whilst it was still wet, resulting in what is termed a wipe pattern. The direction of this wipe pattern is slightly upwards from left to right for both areas.
C9EQWY-5605	There were three separate projected patterns (labeled A, B and C) distributed horizontally across the top of the target. Spatter stains (possibly satellite stains) and multiple flow patterns were visible under patterns A, B and C. Wipe stains (directionality of movement was 2 o'clock) were present in the flow patterns from B and C.
CBHLF2-5601	There is a projected pattern with associated flow on the target. Some of the staining on the center and right side of the target appears altered via wipes resulting in perimeter staining.
CBK8BG-5605	Item 5: Projected bloodstain patterns x 3 exhibiting flow patterns down the wall. For reference purposes, I have labelled the projected patterns 1, 2, and 3 from left to right across the wall. This referencing system is not intended to infer the deposition sequence of the patterns. Projected pattern 2 and 3 shows perimeter staining caused by a brief time delay between the generation of the flow patterns and subsequent wipe through by an unknown object from left to right through the areas of flow from the parent projected stain. The primary deposition site of projected pattern #2 also shows some smaller spattered stains, likely generated as a direct consequence of the mechanism used to create the projected pattern.
CDVLRH-5605	Found a projected bloodstain pattern and after that found wipe that has direction from bottom to top And from left to right
CEKH8G-5601	Three examples of projected patterns, decreasing in height from left to right, and each with associated flow patterns extending beyond the bottom of the image. The middle and right flow

TABLE 3: Recognition and Description

Item 5, continued

WebCode- Test	Detailed Pattern Description
CK8D3U- 5601	patterns also exhibit wipe patterns, indicating that a person or object has contacted the flow pattern with a motion/movement that goes towards the right of the image. It's possible that the wipe patterns were created by more than one event, due to a lack of continuation of the wipe pattern from one flow pattern to the next.
CP4YRB- 5605	Pattern consists of at least three projected bloodstain patterns with downward flow stains. Overall projected patterns range in size from 8.5"x2.25" to 12"x3". The flow bloodstains from the center and right-most projected patterns have wipe patterns through them. These wipe patterns have movement evident from left to right with feathering on the right hand side. Photo marked as Item #5 shows a Projected Pattern made up of 3 large volume blood drops resulting from the ejection of blood under hydraulic pressure and impacting the vertical surface. Due to the effects of gravity on the large volume of blood drops, the blood has flowed down the surface. Shortly after the Projected pattern was made, and before the blood dried, an unknown object came in contact with and moved through the center and right projected blood drops creating a Wipe Pattern. The Wipe pattern shows direction of movement left to right and upwards, altering the projected patterns appearance.
CT63LJ- 5605	The pattern seen in the photograph in item 5 is a projection pattern, also known as an arterial pattern. A bloodstain pattern resulting from the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system. A wipe pattern can also be seen, an altered stain resulting from an object moving through a pre-existing wet bloodstain.
DGMH2M- 5601	There are three projected patterns are from left to right on the target (Patterns 'A', 'B' & 'C'). Pattern 'A' originates between approximately 5mm to 35mm below the top edge of the target and approximately 1 mm to 30mm to the right of the left edge of the target. There is a three-pronged flow pattern traveling slightly left to the right and then from top to the bottom edge of the target. Pattern 'B' originates between approximately 55mm to 65mm below the top edge of the target and approximately 95mm to 123mm to the right of the left edge of the target. There is a two-pronged flow pattern traveling slightly left to the right and then from top to the bottom edge of the target. Pattern 'C' originates between approximately 95mm to 110mm below the top edge of the target and an unknown distance from the left edge of the target. There is a three-pronged flow pattern traveling slightly left to the right and then from top to bottom edge of the target. Pattern 'D' is a wipe pattern passing through Pattern 'B' approximately 175mm to 245mm below the top edge of the target. The wipe travels from left to right and from an 8 o'clock position to a 2 o'clock position. Pattern 'D' occurred after Pattern 'B'. The left prong of the flow pattern for Pattern 'B' continued after Pattern 'D'. Pattern 'E' is a wipe pattern passing through Pattern 'C' approximately 105mm to 200mm below the top edge of the target. The wipe travels from left to right and from a 7 o'clock position to a 1 o'clock position. Pattern 'E' occurred after Pattern 'C'.
DJVX9T- 5601	The image depicts at least 3 projected bloodstains deposited in a generally diagonal pattern between the upper left corner and the center right area of the target. Each of the three stains has associated flows extending to the bottom of the target and indicating volume. The margins of the projected stains are smooth and the stains are elongated horizontally. The left and right stains may have been created by more than one drop each as there are indications of overlapping stains in these deposits. The flows from the center stain and the right stain are each altered by wipes which removed a portion of the blood from these flows creating faint perimeter stains. The wipes moved across the flows upward to the right. Additional small (less than 1 mm diameter) spatter stains and a single vertical spatter stain with associated flow are also depicted, but could not definitively be associated with the projected bloodstain patterns.
DTGYN3- 5601	There are what appear to be at least three (3) large (over 2cm long) roughly elliptical stains across the top of the target. The stains exhibit directionality indicative of left to right motion when impacting the target. There are several flow patterns originating from the roughly elliptical stains.

TABLE 3: Recognition and Description

Item 5, continued

WebCode- Test	Detailed Pattern Description
	The combination of the large, roughly elliptical stains with associated flow indicates that these stains are part of a projected pattern. Lastly, several of the flows on the middle and right side of the target have been wiped through as evidenced by perimeter staining on some of the flows where the wipe occurred. There are also feathered edges to the right and above the altered areas of the flows indicating the wipe motion was from left to right and upward.
DV8ZUQ- 5601	Three separate projected bloodstains located at the top of the vertical plane which was resulted by an ejection of blood under pressure from a breached artery. The middle and far right projected bloodstain exhibited wipe patterns along a downward flow motion drip stain with skeletonization present.
DX7C3- 5601	Projected patterns are present on the target, consisting of upper stains with large volume, flow, and some satellite stains. The projected pattern on the left is undisturbed, but the center and right projected patterns are altered by at least one wipe through portions of each pattern, leaving visible perimeter stains.
DY4NBX- 5601	There are three apparent projected bloodstains on the drywall. There are flow patterns extending in a downward direction from each of the projected bloodstains. Some of the flow patterns have pooling on the lower portions of the stains. The flow patterns created from the center and right projected bloodstains have been altered creating a wipe pattern. The wipe patterns appear to have left to right directionality. Perimeter staining can be observed on several of the flow patterns that have been altered.
DZJ9VW- 5605	A projected pattern is shown on the target with three distinct stains. Each stain was voluminous enough to create flow that traveled down the wall. A wipe is though the subsequent flow of the middle and right stain. The wipes have movement of up and to the right on the target.
E32PNZ- 5601	A Projected Pattern was observed on the upper portion of this target. Flows associated with this projected pattern extend to the bottom of the target. Wipes were observed on the lower middle and right side of the target through portions of the flows.
EJ4E- 5605	There are three areas of bloodstains observed in the image of painted drywall in the vertical plane. Each of the three areas has a roughly oval shape at the top with a directionality going from left to right and they can be classified as a projected pattern. The upper stains had a large enough volume of blood to create flows down the wall. The flows beneath the right two upper stains have been altered by an apparently clean object creating a wipe pattern through them.
EEFKT- 5601	Three (3) projected patterns with associated flow were observed on the target. Wipes were observed through the associated flow of the middle projected pattern and through the right projected pattern and associated flow. Perimeter stains were observed in these areas.
EGL8HP- 5601	Item 5 shows a projected pattern in 3 different areas starting at the top left corner of the drywall ending at the center-right area of the drywall. Flow patterns can be observed running down from each of the 3 projected patterns. Wipes can also be observed at the center and right projected patterns with a right upward directionality.
ENKWZT- 5605	A minimum of (3) projected patterns are present with flow coming downward. At least (2) of the projected patterns had wiping through the flow.
EQUAWH- 5601	Image of an approximate 30.9 cm x 24.3 cm area of beige in color painted drywall in the vertical plane with a millimeter scale oriented in the upper left corner. In the upper left corner of the image, approximately 3 mm from the top edge and 1 mm from the left edge is a red in color stain with an outward undulating curvilinear perimeter at the top and left sides. The main body of the stain measures approximately 3 cm long at the top x 1.3 cm wide. Three downward flows emanate from the main body: One flow extends right and downward in a curvilinear path from the right side and continues in a straight downward path to the bottom of the image. The second flow extends downward from the lower right at a slight rightward angle and continues in a

TABLE 3: Recognition and Description

Item 5, continued

WebCode- Test	Detailed Pattern Description
	<p>straight downward path to the bottom of the image. The third flow extends straight downward from the lower center to the bottom of the image. Two semi-circular stains, one above the other and approximately 1 mm in diameter are toward the top and right side of the third flow. These two stains are tapered at the top with an up and leftward angle. Two additional red stains, approximately 1.5 mm and 2 mm in diameter, are to the right and below. A downward flow emanates from the 2 mm in diameter and lower of the stains for approximately 3.9 cm. In the upper center, approximately 5.6 cm below the top of the image is a red in color stain with a general curvilinear rhombic shape; the long axis is approximately horizontal. The main body of the stain measures approximately 2.5 cm long at the top x 1.1 cm wide. Two downward flows emanate from the main body: One flow extends right and downward in a curvilinear path from the right side and continues in a straight downward path to the bottom of the image. The second flow extends downward from the lower center to the bottom of the image. Spatter stains from approximately 1 mm to less than 1 mm in diameter are just below the main body at both sides of the center most flow. One less than 1 mm spatter stain is adjacent to the top edge of the main body. A wipe pattern alters both flows approximately 13.5 cm below the main body in an upward and right direction. The wipe pattern through the center flow is approximately 4.5 cm wide, the lower portion of which extends to the left wedge of the right side flow. A perimeter stain in the flow is visible at the wipe pattern contact area with a subsequent flow that continued downward approximately 3 cm along the original flow's path after the wiping action. The wipe pattern through the right side flow is approximately 6.5 cm wide. A perimeter stain in the flow is visible at the wipe pattern contact area with a subsequent flow that continued downward approximately 6 mm along the original flow's path after the wiping action. At the right side of the image, approximately 9.5 cm from the top edge and 3.6 cm from the right edge is a red in color stain with an outward curvilinear perimeter at the top and left sides. The main body of the stain measures approximately 2 cm long at the top x 2 cm wide. Three downward flows emanate from the main body: One flow extends right and downward in a curvilinear path from the right side and continues in a straight downward path to the bottom of the image. The second flow extends downward from the lower right at a slight rightward angle and continues in a downward path to the bottom of the image. The third flow extends straight downward from the lower center to the bottom of the image. A wipe pattern alters across these three flows just below the main body in an upward and right direction. Portions of the wipe pattern are continuous across all three flows. The wipe pattern is approximately 8.7 cm wide. A perimeter stain in the left most flow is visible at the wipe pattern contact area with a subsequent flow that continued downward approximately 1 cm along the original flow's path after the wiping action. There is an approximate 1.5 cm subsequent flow across the alteration in the center flow pattern. An approximate 3 mm in diameter oval shaped stain with a downward flow emanating from the bottom edge is in the lower right area of the image between the left and center flows. The main bodies of each flow pattern are in a linear distribution from the upper left corner toward the center right side of the image and are consistent with a projected pattern.</p>
EXRC72- 5605	<p>A series of three projected stains are distributed across the upper part of the target with associated satellite stains. The shape of these stains indicate a left to right directionality. There are flow patterns coming from each of the parent projected stains. The flow patterns from the middle and right parent projected stains have been altered with wipe patterns that exhibit an upward diagonal left to right directionality. There are several areas of these altered stains that have subsequent flow from the parent projected stain that occur after the wipe.</p>
EZYU6W- 5605	<p>There are three separate large volume irregular shaped central stains located at the top left of the page (pattern 1), the middle of the page (pattern 2) and the middle right of the page (pattern 3). They have an arch-like distribution. Each central stain has long thin projections flowing downward due to gravity to the bottom of the page. These are flow patterns. The three patterns 1,2 and 3 are consistent with being projected patterns. The secondary flow on patterns 2 and 3 are altered resulting in several wipe patterns.</p>

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
F8RLPV-5605	The vertical wall has 3 distinct patterns as look at the target from left to right. These patterns appear to be projected. These are consistent in size with downward flow patterns on each. They also actually appear to be declining in height from left to right. The middle stain and the right stain exhibit edge characteristics in the flow pattern that have been disturbed. This is a wipe.
FT9RHC-5605	Overall bloodstain patterns in Item 5 are flow, projected pattern, and wipe.
FY22TB-5605	There is a projected bloodstain pattern across the surface of the wall, with the source of blood decreasing slightly in height as you move from left to right. There are flow bloodstains running down the wall from the projected bloodstains. The flow patterns from the central and right projected bloodstains, and also part the right-most projected bloodstain itself, have been altered as a result of being wiped through in a left to right and slightly upward direction. This has resulted in wipe stains through the aforementioned flow and projected bloodstains.
G6398D-5601	In my opinion, bloodstains on the wall comprised a projected pattern, in which blood was applied to the target surface from left to right. The blood from the projected pattern had flowed mostly downwards. Soon after deposition, some of the blood that had flowed was smeared upwards and to the right, comprising a wipe pattern. A number of small spatter bloodstains were present on the wall, resulting from blood droplets travelling upwards and to the left.
GNEY4N-5605	This bloodstain seems to be a projected pattern resulting from blood ejected from the wound on victim's throat. And then, flow pattern appears to be formed from the projected bloodstain because of large amount of blood and gravity. Then wipe pattern was created by some object touching and moving to the right upper side on a part of the flow pattern on the wall.
GQMEBU-5605	There is linear spatter across the top of the pattern. The large individual spatter stains have volume with flow. The linear nature of the spatter stains along with the volume and flow support a projected pattern. The flow stains of the right two projected stains are altered with wipes. The flow stains were pre-existing to the wipes, indicated by the presence of perimeter staining of the flow stains.
GVCRCH-5601	Based on the choices provided by CTS, the following patterns were visible on the target surface: Projected bloodstains were visible across the wall. These stains were linear and had volume that created flow from the individual stains. Some of the projected patterns were disturbed, creating altered stains that were consistent with wipes.
H6HH9C-5605	Bloodstain Pattern Analysis Test No. 20-5605 Section II: Pattern Description [Name] [Laboratory] Crime Laboratory / Crime Scene Unit. In the photograph labeled "Item #5 (Painted drywall-vertical plane)" a complex bloodstain pattern was observed. The pattern consisted of three elliptical spatter stains in a linear orientation, with volume in individual stains, and flow emanating in a downward direction towards the bottom of the photograph. The stains formed a projected pattern with directionality indicating that the blood was deposited onto the target surface from left to right. There was a wipe stain through the preexisting downward flow patterns near the lower right portion of the photograph. The wipe displayed directionality from left to right at an upward angle.
H9WT8E-5601	Bloodstain pattern comprising transfer (parent) bloodstains x3 with associated flows, drip stains, satellite stains and bubble rings. A significant volume of blood present to create flows. Flows show downward directionality due to gravity and wipes are present through flows. Wipes have edge characteristics indicating movement and obliquely upward right directionality.
HBZNPW-5605	Item 5 Image labeled "Bloodstain Pattern Analysis Test 20-5605 Item 5 (painted drywall – vertical plane). Three lightly shaded irregular shaped bloodstains measuring between 2.5cm X 1 cm to 4cm X 2.5cm aligned diagonally between the top left corner and just above the center of the image on the right side. Circular and elongated bloodstains measuring between < 1 mm to

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	1 mm near (mostly below) the left and middle irregular shaped bloodstains (parent stains) – satellite stains. Linear, vertically oriented staining with well-defined edges, extending from the irregular shaped bloodstains or near them to the bottom of the image, a short distance from the irregular shaped bloodstains, or to apparent areas of disruption – flows – dark staining consistent with pooling observed at the bottom of some flows. Five flows associated with the middle and right irregular shaped bloodstains have areas of perimeter staining with the inner portion wiped up and to the right or apparently being mostly filled in with additional blood flow – most of the wipes have feathering and or points on the right edges. Elliptical bloodstain with leading edge at the top and disrupted edge and flow (see characteristics above) at the bottom located near the bottom of the image underneath the right most irregular shaped bloodstain – spatter/drip stain with downward directionality. Projected Pattern with satellite staining, flows, wipes, and a spatter/drip stain.
HCGKGW-5601	Three (3) projected patterns with associated flow were noted as present on the target. The flow in the center and right side of the target was altered by wipes with directionality from left to right and slightly upward.
HGQVAQ-5605	There can be a projected pattern observed from where several flow patterns derive. Through the flow pattern a wipe with motion from left to right can be detected.
HKQAVU-5605	An image of painted drywall in the vertical plane with multiple bloodstain patterns. I observed three projected patterns, each with their own downward flow stains due to gravity. Several flow stains exhibited a wipe pattern appearing to travel from left to right. Additionally, edge characteristics and perimeter staining could be observed in some of the flow stains with wipes.
HKRY2D-5605	I saw in this target an arterial gush pattern with an a wipe pattern from left to right making a transfer of blood to an unstained blood surface.
HTLCEE-5605	Multiple stain types were observed in this photo. There are three distinct projected patterns, each exhibiting multiple flows down the vertical surface due to gravity. The flows from the center and right projected patterns have been disturbed with wipe patterns moving up and to the right. In the lower right quadrant of the photo there is a distinct outlying drip stain.
HX389B-5601	A projected pattern of large volume bloodstain with flow primarily in a downward direction and some upper portions of the flow also showing a slight direction to the right. There are wipes through some of the flow with a direction of travel upward and to the right. Some perimeter stains were visible where the wipes moved through. Some flow continued after the wipes. Some spatter stains are located near the center stain of the projected pattern.
J2WT9D-5605	Projected pattern on drywall adjacent to deceased, relatively pale staining could be dilute but also due to surface effect. Pattern has been subsequently wiped.
JG76QD-5601	The bloodstain area shows a projected pattern exhibited by a linear deposition of large volume spatter stains. The large volume is evident in the individual stains due to the flow patterns from the individual spatter stains. Alterations in the form of a wipe pattern is present in the flow patterns. The wipe pattern was created by an object moving left to right through the already existing projected pattern.
JHYBGW-5605	Multiple blood stains on a vertical plane. A section of painted drywall had three main areas of blood staining left, middle and right. The left staining was a projected pattern with flow approximately 70mm wide and 300mm high (stain appeared to continue down, out of image). The middle area was a projected pattern with flow approximately 60mm wide and 250mm high (stain appeared to continue down, out of image). Approximately 45 mm from the bottom of the middle stain was a wipe pattern. The general directionality of the wipe pattern was slightly up and to the right. The right stain was a projected pattern with flow approximately 50mm wide and 225mm high (stain appeared to continue down, out of image). Approximately 100mm from the

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	bottom of the right stain was a wipe pattern. The general directionality of the wipe was slightly up and to the right.
JLLCEC-5605	3 shapes with a blood repartition linked to the Gravity, NO internal striation: Transfer stain. The shape is not recognizable then we can't identify the blood-bearing surface. several stripe-shapes linked to each Transfer stain, parallel edges: Flow. ovoid shapes, Width = 1-2mm, paths for the 3 biggest: vertical downwards for one, Left to right downwards for the other: Spatter (the two biggest spatters have a flow linked also). from the flows on the center and the right of the picture, there are shapes showing a heterogenous blood repartition and an internal striation: at least one wipe from the left to the right upwards. On few wipes, the flow comes again covering partially or totally the wipe done
JVQWMR-5601	There are three possible projected patterns on the target. The pattern on the left has flow patterns with pooling noted. The pattern in the center has flow patterns which both have a wipe pattern which runs left to right. The pattern on the right has flow patterns which all have wipe patterns that run left to right. The center and right patterns also have perimeter stains from the wipe patterns.
K28R3L-5601	Item 5 is a 1:1 scaled photograph of a complex bloodstain pattern reportedly on painted drywall in a vertical plane. There are three large spatter bloodstains in the top half of the image in a linear orientation. These spatter bloodstains are associated with a volume of blood with blood flows down to the bottom of the drywall in the picture. All three spatter bloodstains are slightly elliptical in shape and have a directionality of left to right. These spatter bloodstains were designated as stains A1, A2, and A3. Stain A1 is ~ 4 cm by 1.5 cm in size and is associated with three flows. Four additional spatter bloodstains are just below the main stain and range in size from ~ 3 mm by 1 mm to ~ 1.2 cm by 2 mm. All four of these additional spatter bloodstains have a general downward directionality and slightly to the right. The largest of these additional spatter bloodstains is associated with flow down the drywall. Stain A2 is ~ 2.5 cm by 1 cm and is associated with two flows. At least ten additional spatter bloodstains are just below the main stain. These additional spatter bloodstains range in size from less than 1 mm to ~ 1.5 mm by 1 mm and are near circular to slightly elliptical in shape. Stain A3 is ~ 2 cm by 1.5 cm in size and is associated with three flows. An additional spatter bloodstain is towards the bottom of the image in-between two of the flows and is ~ 3 mm by 1.1 cm in size. This spatter bloodstain is elliptical in shape with a downward direction. The flows associated with stains A2 and A3 are altered and have been wiped though in a left to right direction and upwards. The wipes are evident by the presence of striations in the body of the wipes and feathering at the right end of the wipes. Perimeter staining is also present in the flows where they have been wiped through, although the perimeters are thin (<1/2 mm) and blood flows continue a short distance over the areas wiped, indicating that the wipes likely occurred a short time after the deposition of the flows. This complex bloodstain pattern consists of a projected bloodstain pattern with wipes.
K6BMLP-5605	The different flows presents on the wall indicate that there was a certain amount of blood on the three bloodstains we can identify on the wall. Due to gravity, the blood went down the wall. On the flows coming from the second and third stains, we can also identify some alteration due to wipe patterns with a directionality from the left to the right and from down to up. About the pattern that originated the blood stains, if the borders of the stains are neat, we do not have round or oval bloodstains. Therefore, it cannot be drip stains. The lack of information on the laceration of the throat (cut arteries or not) and the none oval shape of the stains prevents us from concluding to a projected pattern (or arterial blood pattern). What may have caused these sort of stains could be a transfer from a object retaining a significant amount of blood. The contact on the wall left a transfer stain that flowed on the wall leaving the different flow patterns.
KBYBGU-5601	A projected pattern with associated flow was observed across the vertical target. A wipe is observed within the projected pattern near the center and to the right, resulting in perimeter stains in a portion of the projected pattern.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
KFQHZ3-5601	The pattern analysis suggests arterial spurting in motion from left to right against a vertical plane. Three arterial spurts are clearly identifiable. Additionally, it appears there is also a wipe which came after the initial arterial spurting through the second and third arterial spurt patterns also traveling left to right and in an upward direction.
KGZKNM-5601	There are several stains in the shape of an inverted v creating a projected pattern. The middle and rightmost portions of the projected pattern appear to be altered by wipes leaving behind some perimeter staining.
KHV7GD-5605	This image displays two cast-off patterns. One running from the upper right of the image to the lower right side of the image. The other runs from the upper left of the image to the lower left of the image towards the center bottom of the image.
KK4HWU-5605	A projected pattern with flow was present on the target with satellite stains near the larger projected stains. Some of these flow patterns have been altered by being wiped through, and perimeter staining remains. In some areas these flow patterns have replenished over-top the wiped areas.
KLVELN-5605	In the upper part of the image there is three large successive spatter stains. Flow patterns are originating from these three spatter stains. There is a wipe pattern going through the two right flow patterns from left to right, in an upward direction.
KTH48J-5601	Three projected patterns with downward flows are present with wipe patterns going through and altering two of the aforementioned projected patterns. Skeletonization is present to the two altered downward flow patterns.
KWFKKD-5601	The victim's throat was lacerated, indicating these stains are consistent with projected staining fairly uniform in horizontal spacing (aprox. 100mm) across the page. The three distant projected stains are at varying heights (aprox. 50mm spacing) on the top half of the page, and each have (2 or more) resulting flow patterns from them. Additionally, near the parent (projected) stains of the flow patters there are small (1mm or less in size) elliptical stains indicative of the projected staining. The flow patterns extend to the bottom of the page (the longest being 300+mm long). There is one elongated drip stain at the bottom right of the page, likely related to the projected stain on the far right, with flight flow from this stain as well. Of the 3 projected stains, two of the stains have wipe patters through their flow patterns. The wipes move from left to right and slightly upwards, with feathering on the right hand sides. Skeletonization/perimeter staining is seen in the flow patters where they were wiped through, however continued flow pattern from the parent stain appears to have occurred post-wipe (best example; see the flow pattern on the left from the middle projected stain). Side note, in this middle stain, there are also small elliptical stains (resulting from projected stain) that have been wiped through near the flow stain on the right hand side.
L7XP6H-5601	3 projected patterns in a left to right directionality impacted the vertical plane (with one pattern on the left side, one in the middle, and one on the right side). Droplets of blood from each projected pattern then flowed down the vertical plane. An unknown object then wiped through the flows of the 2 right-most patterns in a left to right direction.
L8UPXA-5605	The bloodstain pattern on the wall is a projected pattern with a flow pattern. The projected blood flowed down the vertical surface after impacting it. The bloodstains in the image are approximately 2-3 inches apart and decrease in height from left to right. Two of the bloodstains have a wipe going through them at an upward angle going from left to right.
LAZKNK-5601	Three (3) splash patterns with flows downward. A wipe through the flow patterns in direction left to right upwards. Some flow pattern is on top of the wipe.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
LNHCCR-5601	Three deposits of a volume of blood with a flow pattern were present. a wipe occurred after the flow from the lower middle of the target towards the upper right side of the target.
LQNX3D-5605	Projected pattern (x3) which has run down the target surface. Sections of the projected pattern have been wiped through with a textured object / surface, possibly hair / fringed item due to strand like visible effect
LYEH7P-5605	Toward the top of the photograph are three distinct but irregular red brown stains that exhibit both force and volume, leading to both vertical and near horizontal flow (angled down and to the right in the photograph). These stains together make up an apparent projected pattern, consistent with arterial spurt from the lacerated throat. The long linear flow stains from the two right projected stains are altered stains. Smears through these pre-existing flow stains point up and to the right of the photograph, leaving faint perimeter stains (from the flow) behind. These apparent wipes are possibly due to hair or some other stranded material moving across the wet flow stains. It is also interesting to note that vertical flow continued to occur following the completion of the wipes. There was a limited time between the projections and altering of the subsequent flow.
MAY6W7-5605	There are three projected bloodstains caused by blood being ejected under pressure. The volume of blood that was projected in these patterns is manifested by the vertical flows present on the target. The vertical flows on the center of the target and the right side of the target have wipe patterns in them. The wipe patterns are defined by the altered flow stains and the feathered edges on the wipe stains. The wipes move from a bottom left to top right directionality. There are also satellite stains, that formed from parent stains, as a result of the parent stains impacting the target. These satellite stains are primarily visible in the leftmost projected stain and the center projected stain, near the top of the parent stain.
MBUZTA-5605	The wall has three projected pattern stains, each with downward flow stains. The two projected pattern stains and flow stains on the right also have wipe patterns. The wipe patterns appear to go from left to right, in slightly upwards direction.
MM46QA-5601	From left to right, 3x projected patterns decreasing I height with associated blood flows running down the wall. On the middle and furthest right projected patterns there are wipes through the blood flows in a left to right, slightly upwards, diagonal direction.
MUN9WR-5601	There is a projected pattern across the target with several large volume stains with associated flow and some satellite stains. Some of the staining on the center and right side of the target appears altered via wipes, resulting in perimeter staining.
MVEPU7-5601	There are three stains with smooth rounded margins, in each of which a volume of blood has contacted the wall. From the left to right of the photo, the stains are progressively lower. There are some small directional spatter stains associated with each of these three stains, particularly the central one. Each of the three parent stains have flows that elongate down from them. In my opinion these three bloodstains are projected patterns. The similarity of the blood colour and distribution, along with the height variation, suggest that these projected patterns may have been created by circulatory blood being ejected under pressure and under the influence of a pulse-like action. The flows emanating from the central and right projected patterns have been altered by something contacting the surface while the blood was still wet, producing a wipe, which shows movement from the lower centre towards the upper right of the photograph. Some perimeter stains have been left where the blood has been removed from pre-existing flows. Some flows have occurred after the wipe action, running from the projected patterns down over the disrupted blood staining.
NDBG7R-5605	There are multiple projected patterns on the target. Several of the resulting flow patterns have been altered which created wipe patterns and perimeter stains.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
NE46R9-5605	On a vertical drywall painted surface with a bureau ruler on the top left corner of the photograph item 5 consists of three projected patterns with flow. The projected patterns start at the top left of the photographs and go into a downward direction with the third stain being the lowest on the wall. A wipe is going through the middle of the center projected pattern in an upward direction through the third projected pattern toward the right side of the photograph.
NEMGJ9-5605	The photo of Item 5 shows three sets of projected blood patterns in the upper left, upper middle, and upper right side of the photo. There are wipe patterns within the middle and right projected blood patterns where something wiped away some of the blood that was flowing downward.
NFXJ68-5605	Large, related stains and associated smaller stains are located across the top of the photograph. The stains are consistent with a projected pattern with downward flow patterns. The flow patterns originating from part of the projected pattern appear to have been altered by an object moving slightly upwards from left to right resulting in a wipe pattern. Perimeter stains were present on some of the wiped flow patterns.
NK9AEL-5605	A projected pattern was present on the target consisting of three separate stains, each with heavy volume and downward flow. The downward flow stains supported perimeter staining with wipes through them from left to right.
NKEQT8-5605	Projected Pattern of bloodstain from the ejection of blood from wound after have something wipe bloodstain Upward direction from left to right
NMEPU6-5601	Projected Pattern with flow and wipes.
NUHERC-5601	These are flow pattern bloodstains, possibly part of an arterial spurt. Some of the stains have been altered by a wipe. There is also a spatter or drip stain present in the lower right corner of the photograph.
NUXWAN-5605	I observed projected patterns with associated flow stains. Some of the flow stains have wipes with perimeter stains.
NXDR79-5605	There is a projected pattern going across the photo because there are a series of arced linear stains that appear to have been ejected onto the wall under pressure. Each individual arced stain has downward flows. Some of the flow stains are altered stains and appear to be wipes. The left edges of the altered flow stains are visible and the right sides are feathered outward to the right and upward.
NXHPLQ-5601	Projected patterns, with associated larger volume parent stains, satellite stains, and flows, are present on the target. The bloodstains of the middle and right projected patterns are altered stains with visible perimeter stains, indicating the altered stains are a result of at least one (1) wipe.
NYUPX8-5601	Three areas of volume staining observed along the upper third of the target consistent with projected stains. Each of the parent projected stains has associated downward flow stains. The middle and right flow stains have been altered and wiped through.
PC99FJ-5605	The digital photograph (item #1-5) was examined visually and microscopically using a magnifying lens and stereo microscope for the presence of apparent bloodstains and bloodstain patterns. The following are descriptions of the bloodstain patterns observed on the vertical painted drywall as viewed facing the photograph. A Projected pattern extends from left to right and top to bottom. The height of the stains decrease from left to right. A Wipe pattern extends from the lower middle to the upper right through the Projected pattern. The Wipe pattern has a left to right and upward directionality.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
PDN9Y9-5601	Blood projected onto wall in three separate areas with some satellite staining formed as a result. Each area of projected blood shows significant downward flow with some stains having been wiped during the period of flow.
PUR379-5605	Blood was deposited onto the drywall with sufficient volume to result in flow patterns. Some of those flows were wiped through, leaving perimeter stains.
PV8YX9-5601	There is a projected pattern with associated blood flows travelling in a downward direction. Some blood flows have been further disrupted by a wiping motion diagonally up to the right.
Q2QPVM-5601	Three primary stains each with gravity flow were observed. The first of the stains appears in the upper left corner, the second slightly lower and center of target and the third approximately middle of the target along the right edge. The stain in the middle of the target and the one on the right side of target have a wipe/swipe event with a direction of lower left to upper middle right with most of the disturbance through the gravity flow portions of the pattern. It appears additional gravity flow occurred after the wipe/swipe as there is some flow pattern on top of the wipe/swipe.
Q3JKHV-5605	Three projected bloodstain patterns are observed in the image. The three projected bloodstain patterns display decreasing height on the wall from left to right. Flow bloodstain patterns are observed associated with each of the three projected bloodstain patterns. The flow bloodstain patterns display a downward directionality. Wipe bloodstain patterns are observed through the flow bloodstain patterns of the center and right projected bloodstain patterns. The directionality of the wipe bloodstain patterns is from left to right and upward.
Q6QZRM-5601	Starting in the upper left-hand side of the image and moving downward and to the right-hand side there are three irregular shaped bloodstains. The larger of these three bloodstains is in the upper left-hand corner and measures approximately 4 cm by 3 cm. Each of the three bloodstains have flow patterns associated with them, the longest of which measures approximately 29.5 cm in length. The flow patterns of the middle stain and the right-hand stain have been disturbed creating altered stains which appear as wipe patterns. This bloodstain pattern is suggestive of a projected pattern.
Q6RPX6-5605	Blood stain suggest a splash pattern, caused by an injury to a mayor artery or a big wound. The second and third portion of the pattern suggest an wipe pattern, altering the original splash pattern and movement for left to right.
QANG4G-5601	Item 5 shows a projected pattern with associated flow. Wipe patterns with associated perimeter staining are observed in the patterns in the middle and the right of the target.
QHCD3W-5601	Three projected bloodstains, i.e. a projected pattern, each exhibiting flow. The second and third, numbered 1-3 from left-to-right, are altered stains with wipes left-to-right through the flow.
QM8YY7-5601	Three projected bloodstains with downward flow patterns. The center bloodstain and the bloodstain on the right side of the photograph are altered stains, the edge characteristics are indicative of a wipe moving from left to right and upwards.
R4XU24-5601	The painted drywall surface contains a projected pattern with three separate areas of bloodstains making up the projected pattern. Each of the three separate areas of bloodstains in the projected pattern had corresponding flow stains. The individual flow stains were formed consistent with the effects of gravity and/or the travel along the painted drywall surface. Wipe stains are present in the areas of the flow stains that correspond to the center and right bloodstains, as viewed in the image, of the projected pattern. The wipe stains were formed with an object moving from left to right and in a slightly upward direction.
R8QNJH-5605	A projected pattern with multiple downward flow patterns is observed across most of the image. A wipe that goes through some of the flow patterns is also observed. The wipe appears to go

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	from the lower center of the image in a slightly upward angle towards the middle right side of the target.
R97M48-5601	Based on the choices provided, the following patterns were observed: Areas of projected bloodstains were visible across the wall. These spatter stains were linear and had volume in the individual stains. Some of the projected patterns were disturbed, which is consistent with wipes. Wipes occur when a stain is altered from an object moving through a pre-existing wet bloodstain.
R9L7M4-5605	Three projected stains in descending height (on wall) from left to right. Flow pattern where blood had ran down wall. Area of staining of left, unaltered. Two other areas of staining altered with a wipe. Direction of wipe upwards @~45 degrees angle.
REBQQK-5605	There are three areas of staining consistent with projected pattern(s) and associated flow. Some of the flow is altered in a left to right, upward/diagonal direction creating wipes and perimeter stains.
RGDLAM-5605	This is a complex stain which appears to originate from a projected pattern. There are several large volume stains with accompanying flow patterns. There are also some wipe patterns through the flow patterns indicating movement through these stains.
RPRBBG-5601	Projected Pattern is created from the ejection of blood under hydraulic pressure, typically from the breach of an artery. The pattern shown shows to start in the top left corner of the image with three distinct projected stains. The three stains have a descending sequence from left to right with approximately twenty centimeter between each stain pattern and a twenty to forty centimeter descent between them. Amongst the three projected stains, associated flow patterns area observed caused by gravitational forces. Wipe pattern is observed as a pre-existing bloodstain (middle and right projected stain patterns) where altered by an object morning though the original stain. Feathered boundaries with diminished volume with movement indicated from left to right with a slight upward movement. Located in the area of the lower middle of the images and right center of the images. The lower middle pattern moves through the flow of the middle projected pattern with additional flow continuing through the left edge of the wipe pattern. The Right center pattern moves through the lower body of the projected pattern and the associated flow of the parent stain. The flow continues through the lower portions of the wipe pattern.
RR2BD3-5605	Three projected patterns were observed on the top half of the image. Wipe patterns were observed across the two projected patterns on the right. Flow patterns were observed from the projected patterns.
RRYQHM-5601	A projected pattern with multiple areas of flow was observed on the target. The middle and right areas of flow were altered by a wipe.
TADLBL-5601	There are three (3) projected patterns, with associated flow and satellite stains, located on the drywall and arranged in decreasing heights from left to right. The associated flow of the two (2) right-most projected patterns are altered by a wipe or wipes with directionality from the lower left to the upper right.
TE6WKJ-5605	Item 5 depicts a pattern of three large bloodstains arcing downward from left to right each with downward flow, which is representative of a projected pattern. The middle stain, of the three, has several satellite stains near it. The streaming downward blood flow emanating from the middle and right-most stains have wipes going through them, from left to right in a slightly upward motion (indicated by the feathered edges) and leaving perimeter stains in the flow patterns. The flow continued streaming down the wall after the wipes occurred, as additional flow is present over the wipes.
TX6M48-5601	Three large volume bloodstains each with assoc. flows of blood in a downward direction into these are the result of projected bloodstaining. There are some satellite spatter visible,

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	particularly around the central large vol. bloodstain. Two of the areas of projected bloodstaining, specifically the assoc. flows of the central and right-sided stains, have been altered by being wiped through (left to right wipe action). This alteration occurred after the projected blood & flows were deposited but while they were still a bit wet. You can see skeletonised edges of the flows indicating the blood had started to dry prior to being wiped through. Smaller downward spot/drip stain in bottom right corner, likely assoc. with the projected bloodstain pattern.
TZ9EVL-5601	There is a projected pattern on the drywall target with associated flow. Several wipes appear to alter the middle and right areas of staining leaving some perimeter staining.
U7BDY3-5605	Item 5 is an image of bloodstains deposited on painted drywall in the vertical plane. The image contains three projected patterns deposited on the wall in a descending fashion from left to right (as facing). Each of the three projected patterns also has an accompanying flow pattern where the blood has flowed down the wall as a result of gravity. There is an apparent bubble ring visible in the middle pattern. The overall appearance of the projected patterns, and their accompanying flow patterns, are most consistent with the blood being deposited on the vertical surface due to arterial spurting. The middle and right (as facing) flow patterns have also been altered. There are perimeter stains present within the flow patterns that have clear edge characteristics. The flow patterns had dried slightly before an unknown object moved through the flow patterns from left to right (as facing) and slightly down to up. This alteration of the middle and right (as facing) flow patterns are characteristic of a wipe pattern. There is also small spatter visible in Item 5. The spatter could be satellite stains, smaller bloodstains originating during the formation of the projected patterns when the blood struck the vertical surface, or they could be stains resulting from a separate parent pattern that was not included in the photograph.
U7UUYH-5605	Item 5 was an image of painted drywall in the vertical plane with multiple bloodstains. I examined Item 5 and observed the following: projected patterns, flow stains, wipe stains, and perimeter stains.
UDU9M6-5601	A projected pattern with multiple flows which include satellite droplets in a downward motion due to gravity. A wipe pattern from the middle segment of the pattern in a diagonal direction (up-right) to the 3rd segment on the right. Drip pattern in the bottom right, which is a part of the projected pattern mentioned above.
UEKF6G-5605	Three distinct areas of bloodstaining with heavy/moderate downward flow. The first pattern starts approximately 3mm from the top of the page and extends down through the entire photo. The second pattern begins approximately 5.5cm from the top of the target and extends down through the entire photo. The third pattern begins approximately 9.5cm from the top of the target and extends down through the entire photo. All three patterns consistent with projected patterns. Patterns 2 and 3 have indications of a wipe(s) pattern with movement through the patterns from left to right and upward. In addition, downward flow occurred both before and after the wipe(s).
UJEA3H-5605	Item 5 is a complex pattern consisting of a projected pattern of three apparent spurts, with volume and flow and a small amount of spatter, on the vertical painted drywall target. Two of the apparent spurts have been altered by wipes. Perimeter staining and feathering were observed in the wipes, with directionality in an upward diagonal, from left to right.
ULKUR4-5601	Projected bloodstains with associated flow as I would expect if an individual with a breach to the circulatory system has been in the area beside the wall. Also wipes of the flows of blood indicating that someone or something has come into contact with the blood on the wall and moved from direction of left to right.
UVT78L-5605	Three (3) patterns consistent with projected patterns with associated and subsequent flow patterns. A pattern consistent with a wipe pattern is observed on the middle and far right bloodstain, with continued flow patterns after wipe stains created.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
UYQMKF-5605	In the upper part of the image there is three large spatter stains. Flow patterns are originating from these three spatter stains. There are wipe patterns going through the flow patterns (from left to right, in a upward direction). The movement through the existing flow patterns occurred before the blood had dried.
V6YY62-5605	Item 5 shows three distinct bloodstain patterns across the width the photo. Each bloodstain is similar in appearance. The overall stain can be divided into three roughly arc shaped stains across the top half of the image with the left stain being higher in the image than the middle and right stains. The middle stain and the stain on the right of the image show the flow bloodstains were altered by wiping left to right and slightly upward. There are perimeter stains with edge characteristics visible that show where the original flow occurred. The overall bloodstain has the appearance of a "projected pattern", a bloodstain pattern that results from the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system.
VMT78J-5601	On this target, there is a projected pattern with associated flow. Some of the projected pattern has been altered via a wipe or multiple wipes resulting in perimeter staining.
V6FGX-5601	Projected pattern on vertical surface, with wipe from left to right impacting on 5 of the associated flow patterns.
VXUUZG-5605	Red-brown stains consistent with a projected pattern with downward flow were noted. Some of the stains within this pattern were altered and wipes were noted.
W4ZMUC-5601	The bloodstains within the context of this photograph are most consistent with that of a "Projected Pattern", "Flow Pattern", "Void", and a "Wipe Pattern".
W69MJY-5605	There are three primary stained areas. The upper portion of each area is characterized by large (>25mm) stains with circular to elliptical and irregular shapes. Flow patterns emanate from the upper areas downward. The right most 2 stained areas also exhibit striated bloodstains with directionality from left to right and slightly upward. All exhibited characteristic support that this is a projected pattern that was subsequently altered resulting in wipe pattern through the flow patterns of the right two primary areas. Due to additional volume of blood flowing down after the wipe is created indicates that the wipe occurred in a relatively soon after the initial flows were created, since a volume of wet blood was still present above the wipe patterns.
W8YYPC-5601	Projected pattern observed throughout target. Multiple flow patterns observed in projected pattern. Multiple wipes with associated perimeter staining observed in projected pattern in middle and right area.
WBYAJQ-5601	Three (3) projected stains with excess volume flow. From left to right, stains are labeled as A, B and C. Stains B and C also contain wipe patterns with an upward, left to right movement. Perimeter stains that indicate the wipe patterns are visible in the downward flows of projected stains B and C. Stain B also displays small impact pattern stains surrounding the initial contact point of the projected stain.
WKM294-5605	Two kinds of patterns can be found in the vertical plane: projected pattern and wipe. The projected patterns were formed when the blood sources projected upward to the plane from lower positions. When the blood reached the highest positions, they flowed down. Before the bloodstains dried, something wiped through the middle and left ones and formed the wipe pattern.
WQTD8V-5605	The image displays a projected pattern, with 3 x apparent projections and associated flow patterns. Wipe marks are present in 2 of the flow patterns, affecting the flow patterns on the middle and right of the image. The movement of the wipe stains is from left to right.
WTT6VE-5605	Red-brown stains, consistent with a projected pattern were observed. Wipes were observed through some of the flow within the projected pattern.

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
X949WZ-5601	There is a group of three bloodstains consisting of relatively large volumes of blood deposited onto the target (wall) that have flowed vertically (under gravity), forming runs of blood/blood flows. Additional very small satellite stains observed close to the parent stains. Initial blood deposits form a diagonal line (top left towards lower right). In my opinion, these are the result of blood being projected onto the target (wall) forming a projected pattern. Several runs/blood flows in two of the projected bloodstains have been wiped, whilst still wet, in a left to right direction (and slightly upwards). In my opinion, the wipes of all the blood flows could have been caused at the same time (i.e. by the same action).
XC4G2A-5601	Item 5 is a complex pattern on a vertical surface. The pattern consists of three projected stains that range in size from 4 cm by 2 cm to 1 cm by 2.5 cm. The projected stains also have associated downward flows the longest measured 28 cm. Wipe patterns were observed on several of the downward flows. Perimeter stains were observed in several of these downward flows from the movement through them. The movement of the wipe is left to right and slightly upward. Feathering was observed on the upper right portions of the wipe stains. No spines or radiating spatter stains were observed.
XGJPPA-5605	The pattern in this image consists of the following: 1) A projected pattern(s) with associated flow; 2) A wipe pattern. The projected pattern(s) is made up of three areas or events decreasing in height from left to right. Due to the volume of blood deposited each of these stains has a number of descending flows. The middle and right projected patterns appear to have been altered by an object passing through them resulting in a wipe pattern from left to right.
XJMK9C-5601	There is a projected pattern on the wall consisting of three total stains with sufficient volume to create flow patterns. From left to right the strains decrease in height. The two right flows as well as the upper part of the last projected pattern have been wiped through from left to right and upward.
XR34QQ-5605	The observed blood pattern features three distinct blood deposits with flows due to high blood volume and gravity. A suchlike pattern may be commonly observed with arterial gushes. Additionally, the middle and the right flow patterns exhibit an interference of the linear flows, caused by a wipe motion directed right-upwards. The resulting wipe patterns all follow the same direction and appear parallel, therefore, a single wipe action may be possible. Within the right flow pattern, at the bottom of the image, a single spatter stain appeared not being obviously linked to the presumed gush patterns. However, an origin within the right-hand blood deposit followed by separation of a small blood portion caused by a rather high impact energy has to be discussed, particularly with regard to the left-hand pattern exhibiting a likewise feature.
XT9NFC-5601	Projected pattern resulting from ejection of blood under hydraulic pressure, typically from breach of circulatory system. Each of three projected patterns has a corresponding flow pattern of blood down the wall, from the movement of blood due to gravity. The middle and right flow patterns have wipe patterns through them, left to right, caused by movement of object through preexisting wet blood stain.
Y2HDUA-5601	A projected pattern on a vertical wall with flow down the wall. Areas of wipe in pattern in a left to right direction facing the wall.
YGDUJ9-5601	Projected patterns are present on the left, central, and right sides of the target with associated flow. Wipes have altered the flow present on the central and right side projected patterns.
YHABV6-5605	The pattern is consistent with projected blood which could be attributed to arterial spurting. Subsequent to the projected pattern being deposited, there is a wipe from left to right through the existing pattern.
YHNW68-5605	Three projected stains with flows with a downward direction to the bottom of the wall. zooming in on the photo, it looks like the projected stains are diluted. Between the primary stains there are

TABLE 3: Recognition and Description

Item 5, continued

WebCode-Test	Detailed Pattern Description
	also some satellite stains present. In some of them are bubble rings visible. In the second and third flow patterns the flows are wiped out in the directionality from left to right on the far right the primary projected stains and the flows are wiped out also in the directionality from left to right in a slightly angle to the top. when zooming in on the photo, there are some vague patterns of an unknown object visible in the wipes
YX367B-5605	Opinion for Item #5: Projected, Flow, Wipe. There are three projected stains on the wall with flow in the downward direction of all three. The flow of two of the projected stains were altered with a wipe from left to right.
Z2G3BC-5605	There are three different Projected Patterns at the top of the photograph which were traveling from left to right when they were deposited. The volume of the stains coupled with gravity caused a Flow Pattern which traveled downward on the wall. There is a Wipe Pattern that travels through the flow patterns of two of the projected stains. The wipe pattern is moving from left to right and slightly upward.
Z7QBKU-5605	The bloodstain patterns on the wall consist of three projected patterns with associated flow patterns and wipes. The directionality of the projected patterns is from left to right. There are just a few satellite stains, indicating low pressure projecting blood. Through the flow from two projected patterns wipes are seen. The directionalities of the wipes are from lower left to upper right, possibly made in one single movement. The edge characteristics of the altered part of the flows indicate that the wipes are made just a short time after the projection of blood.
Z83TX8-5601	Three (3) projected patterns, each with downward flow, were observed on the target. The downward flow from two (2) of the projected patterns exhibit wipes.
Z9Y9A6-5601	Projected pattern with downward flow. Wipe stain passing though the flow portion with left to right directionality.
ZE624Z-5605	The target is a vertical surface with at least three projected stains and associated flow patterns. The middle and right patterns have been altered while still wet. Perimeter stains on some of the flow patterns indicate that the flow patterns were altered by a wiping mechanism. The wipes travel in a left to right upward diagonal direction.
ZLN828-5605	Three projected patterns from left top corner to right side of target's surface developed/becoming into three flow bloodstains. Followed by two wipes (left to right and bottom to top) of the flow stains at both the middle and right projected patterns.
ZP3679-5605	On the drywall were three areas of bloodstains deposited in series. Evident in the bloodstains were large individual stains with associated downward flows. These features were indicative of a projected pattern. Within the pattern were elliptical stains and small spatter stains. In addition, part of the flows on the right side were wiped diagonally upwards from left to right.
ZXHNP9-5601	The image depicts three large individual projected bloodstains with associated downward flows that extended off the bottom of the image. The projected bloodstains are irregular to elliptical in shape and exhibit a descending height of deposition from left to right. The downward flows associated with the middle and the right projected bloodstains were wiped through from left to right and at a slightly upwards angle creating perimeter stains within the downward flows.
ZYCAJY-5601	Projected bloodstain pattern on vertical wall, consisting of three (3) distinct stains of significant blood volume each with downward flow. Stains 2 and 3 (from left to right) each have a left to right upward wipe.

Additional Comments

TABLE 4

WebCode-Test	Additional Comments
6YEQT-5601	Section 1 [Table 1: Angle of Impact Determination] not completed as test not routinely carried out at this laboratory.
777TXA-5605	Item #4 Note: As the instructions only allow for one bloodstain to be reported the saturation bloodstain on the washrag will be the bloodstain reported, not the drip bloodstain on the vinyl tile.
7YTG6H-5601	In item 4 only the observable stain was considered in what was described as an objective in the exercise (vinyl tile). In the case of considering the tile and the washrag, two types of patterns are observed, a drip stain on the tile and a saturation stain on the cloth.
8N8RL3-5601	No results are being reported in section 1 (angle of impact determination) due to the laboratory's policy of not conducting angle of impact examinations for bloodstains. Our laboratory currently limits bloodstain pattern analysis to pattern analysis (classification, shape, distribution, etc.) and documentation of the patterns with limited reconstruction conclusions.
8T3GBM-5601	Section 4.17, Bloodstain Pattern Analysis, of the Crime Scene Investigation manual does not include procedures for the determination of the angle of impact and this is not an analytical procedure that is performed during any bloodstain pattern analysis within the laboratory. Therefore, this section will not be completed for this proficiency test.
BNDFC6-5605	Inclusion of courtesy copy of midrange photos was not helpful. They were not distinguished as to which photos were the courtesy ones and which were to be evaluated and the image of stain 2 also included flow pattern in the lower left corner. Image 4 was also two stain types with the saturation stain on the "washrag" and an additional pool stain under the rag.
BNF7JM-5601	All references to bloodstains are considered suspected based on presumptive testing. DNA testing and further information available to the analyst may lead to further findings and supplemental reports(s).
C9EQWY-5605	The narrative for Item 4 should indicate which pattern/stain is to be described/identified. There are obviously two pattern types present which caused confusion. *angle of impact stains not measured in mm. PowerPoint was used to measure length and width of the stains.
DY4NBX-5601	No results are being reported in section 1 (angle of impact determination) due to the laboratory's policy of not conducting angle of impact examinations for bloodstains. Our laboratory currently limits bloodstain pattern analysis to pattern analysis (classification, shape, distribution, etc.) and documentation of the patterns with limited reconstruction conclusions.
GQMEBU-5605	For Item 1: Angle of Impact Determination: PowerPoint was used to discern stain sizes. Therefore, the measurements documented for the length and width of each stain are not in mm and were used solely as a ratio to calculate the angle.
GVCRCH-5601	Item 1: The stains used in the "Angle of Impact" portion of the test were not done well. Some of the stains were irregularly shaped and bleeding into the target surface, which made measuring more difficult. Other stains would have been chosen in casework. Item 4: Actually had two target surfaces visible, the tile and the cloth. It was unclear which surface should have been used to answer the question. Based on the scenario and the choices given by CTS, it appears they were asking for the stain present on the "washrag".
H6HH9C-5605	*NOTE: Limitations exist when basing conclusions on photographic evidence alone.
HBZNPW-5605	Item 2 Image labeled "Bloodstain Pattern Analysis Test 20-5605 Item 2 (painted drywall – vertical plane) w/ scale. Purple background. ~30 mostly elliptical bloodstains with several having apparent pooling (dark red shading) at the bottom, measuring between < 1mm and 4mm wide (majority – 2mm to 4mm), and most having rounded leading edges at the top and disrupted edges at the bottoms – spatter stains with some having downward and downward to the right

TABLE 4

WebCode-Test	Additional Comments
	<p>directionality. Grouping of ~10 spatter stains on the right of the image with apparent linear arrangement aligned diagonally from the upper right to the bottom center of the image. Grouping of ~ 15 spatter stains on the left of the image with apparent linear arrangement aligned diagonally from the upper left to the bottom center of the image. Cast-off pattern Item 3 Image labeled "Bloodstain Pattern Analysis Test 20-5605 Item 3 (vinyl tile – horizontal plane) w/ scale. Wood grain tile appearance. Bloodstain measuring ~2cm X 22cm with upper left to lower right orientation (as viewed on image), having a well-defined half circle (top half) perimeter stain with a diameter measuring ~2.2cm originating at the upper left, lighter shading on the ends including within the perimeter stain, darker shading in the center and feathering at the lower right. Wipe with down to the right movement Item 4 Image labeled "Bloodstain Pattern Analysis Test 20-5605 Item 4 (vinyl tile – horizontal plane) w/ scale. Vinyl tile floor with apparent folded white cloth. Bottom half of a circular bloodstain with well-defined raised, slightly scalloped edges on lower left quadrant of tile having a diameter measuring ~3cm, even shading within, possible cracking, and area without staining at the intersection with the cloth – pool w/ circular bloodstain measuring ~1 mm on tile below pool – has some characteristics of a drip stain but indeterminate due to size and partiality of staining. Irregular shaped darkly shaded saturation stain ~2.5cm X 7.5cm on white cloth above the top half of pool/possible drip stain. Pool on target (tile) and saturation stain on target (cloth).</p>
HTLCEE-5605	<p>Zooming into the photo approximately five sub-millimeter spatter stains with upward directionality were observed. The volume of the of these stains is far too small for a typical impact pattern and their significance is unknown.</p>
JLLCEC-5605	<p>The laceration of the throat lets thinking that a arterial wound exists then we expect a projected pattern. The shapes of the Item 5 are close to the projected pattern shape BUT we haven't spines on the mother stain and there're not enough satellite stains converging to those mother stain. Without those criteria, the patterns on the painted drywall couldn't be Projected pattern. So, at least one not identified blood-bearing surface contacts the painted drywall causing also the flows. After those contacts but before blood was dried, a unknown surface came through the flows , upwards from the left to the right, causing at least one wipe.</p>
JVQWMR-5601	<p>No results are being reported in section 1 (angle of impact determination) due to the laboratory's policy of not conducting angle of impact examinations for bloodstains. Our laboratory currently limits bloodstain pattern analysis to pattern analysis (classification, shape, distribution, etc.) and documentation of the patterns with limited reconstruction conclusions.</p>
KLVELN-5605	<p>If I may comment: The spatter stains are quite bizarre... Not nice. Look like a projected pattern by a seringue or maybe a cast-off pattern by soaked fabric with blood ???</p>
KWFKKD-5601	<p>Additional measurements can be documented upon request.</p>
LQNX3D-5605	<p>item 3 -main pattern is a drip stain which in addition has begun to cause saturation to the fabric surface</p>
LYEH7P-5605	<p>The terms utilized to define particular bloodstain patterns were derived from the International Association of Bloodstain Pattern Analysts (IABPA) and ASB Technical Report 033, First Edition 2017 terminology lists. Identifying particular stain patterns does not necessarily constitute a complete bloodstain pattern analysis scene reconstruction. These conclusions are based upon training, experience and knowledge of the case facts available at this time. Additional information could change the conclusions and opinions in this report. Bloodstain pattern - A grouping or distribution of bloodstains that indicates through regular or repetitive form, order, or arrangement the manner in which the pattern was deposited. Cast-off Pattern - A bloodstain pattern resulting from blood drops released from an object due to its motion. Cessation Cast-off Pattern - A bloodstain pattern resulting from blood drops released from an object due to its rapid deceleration. Directionality - The characteristic of a bloodstain that indicates the direction blood was moving at the time of deposition. Drip Pattern - A bloodstain pattern resulting from a liquid that dripped into another liquid, at least one of which was blood. Drip Stain - A bloodstain</p>

TABLE 4

WebCode- Test	Additional Comments
	<p>resulting from a falling drop that formed due to gravity. Drip Trail - A bloodstain pattern resulting from the movement of a source of drip stains between two points. Expiration Pattern - A bloodstain pattern resulting from blood forced by airflow out of the nose, mouth, or a wound. Flow Pattern - A bloodstain pattern resulting from the movement of a volume of blood on a surface due to gravity or movement of the target. Forward Spatter Pattern - A bloodstain pattern resulting from blood drops that traveled in the same direction as the impact force. Impact Pattern - A bloodstain pattern resulting from an object striking liquid blood. Pool - A bloodstain resulting from an accumulation of liquid blood on a surface. Projected Pattern - A bloodstain pattern resulting from the ejection of a volume of blood under pressure. Satellite Stain - A smaller bloodstain that originated during the formation of the parent stain as a result of blood impacting a surface. Saturation Stain - A bloodstain resulting from the accumulation of liquid blood in an absorbent material. Spatter Stain - A bloodstain resulting from a blood drop dispersed through the air due to an external force applied to a source of liquid blood. Swipe Pattern - A bloodstain pattern resulting from the transfer of blood from a blood-bearing surface onto another surface, with characteristics that indicate relative motion between the two surfaces. Target - A surface onto which blood has been deposited. Transfer Stain - A bloodstain resulting from contact between a blood-bearing surface and another surface. Void - An absence of blood in an otherwise continuous bloodstain or bloodstain pattern. Wipe Pattern - An altered bloodstain pattern resulting from an object moving through a preexisting wet bloodstain.</p>
MAY6W7- 5605	<p>Regarding Pattern Description, Part 1, Item 2: this pattern is a cast-off pattern because the stains are spatter, they are linear, there are no flows in the individual stains, and there is a progressive consistent impact angle change. Regarding Pattern Description, Part 1, Item 3: this pattern is a wipe pattern because the stains are non-spatter, they have an irregular margin, there are no spatter/spines, and the original perimeter of the pre-existing stain is visible. Regarding Pattern Description, Part 1, Item 4: this pattern is a saturation stain because on the washrag is a saturation stain which is non-spatter, it has a regular margin, and it is absorbed into the washrag. On the floor is a drip stain, indicated by its spatter appearance, no linear orientation, its random distribution and no radiating pattern.</p>
MBUZTA- 5605	<p>For Item 4: The conclusion of only a single type of pattern is difficult. There is possibly a drip stain or pool on the tile under the rag – it's difficult to tell since the rag could be covering more stain which might provide more information. Next to the larger stain on the tile is a tiny stain that could be a satellite stain if the parent stain is a drip. Part of the covered stain on the tile appears to have been absorbed by the rag. The rag has a large saturation stain that seems to be more blood than what would be absorbed from the small stain on the tile, but it appears that there definitely is a saturation stain in this photo.</p>
MVEPU7- 5601	<p>The fact that flows from the projected patterns over-ran the wiped blood shows that the projected patterns occurred only a very short time before the wipe occurred, as the blood was still flowing from the projected patterns after the wipe. The farthest right of the flows from each of the projected patterns has travelled towards the right before turning and running vertically down under the force of gravity. In my opinion this shows that the blood creating the projected patterns was travelling from the left towards the right when it contacted the wall. I have been unable to download the additional files provided, which may be due to an inadequacy in my home wifi.</p>
NK9AEL- 5605	<p>PowerPoint was used for Section I [Table 1: Angle of Impact Determination] measurements for angle of impact; these measurements are in inches rather than mm.</p>
NMEPU6- 5601	<p>Some of the projected pattern stains have been altered as some of them have been wiped through, which also created perimeter stains.</p>
NUHERC- 5601	<p>If I were reporting the angles from Item 1, I would characterize them as follows: Bloodstain A = 48 +/- 3 degrees. Bloodstain B = 21 +/- 1 degrees. Bloodstain C = 16 +/- 1 degrees. Bloodstain D = 13 +/- 1 degrees. Bloodstain E = 31 +/- 1 degrees.</p>
PDN9Y9- 5601	<p>A replenishing source of blood (e.g. a laceration to the throat), has been close to the wall (would not rule out some contact with the wall). This has resulted in blood being projected/spurting onto</p>

TABLE 4

WebCode-Test	Additional Comments
	the wall with sufficient force that some satellite spatter is formed. The projected blood is in sufficient quantity that blood has run down the wall. In two areas the staining has been wiped/smeared across and up the wall with blood flow then continuing over the wiped area.
R8QNJH-5605	Angle of impact was determined using PowerPoint measurements in CM instead of MM. Angle of impact stains for Section I [Table 1: Angle of Impact Determination] have a shadow appearance on stains A, B, C, and E as captured on the image.
R97M48-5601	Section 1 [Table 1: Angle of Impact Determination]: I do not believe this portion of the test was well made. The bleeding of the stains and discoloration made it very difficult to accurately and consistently measure the stains. Item 4: It was not clear to which stain the test was referring.
TE6WKJ-5605	In casework, I would call the stain in Item 3 a smear, due to the lack of detail that would allow me to call it either a wipe or a swipe. As the term "transfer pattern" is inclusive of all contact stains, whether motion occurred or not, we prefer to use the term "smear."
U7BDY3-5605	1. The angle of impact exercise should allow for measurements to be made in mm or inches. 2. The angle of impact should be reported as approximate and not an absolute angle since we are calculating an estimate.
UEKF6G-5605	Item 1 - Measurements not in mm. Data imported into program to identify ratio of width/length to determine angle of origin. Item 4 - Saturation stain refers to stain on fabric.
UVT78L-5605	Item 4: Stains consistent with both a drip stain (on floor) and a saturation stain (on washrag) are present and both would be reported in normal case work.
VV6FGX-5601	Re item 4: Saturation on cloth.
VXUJZG-5605	For Item 4, it is unclear from the question if the pattern of interest is the one on the tile or the one on the washrag. My answer is the pattern type on the washrag. When there are multiple potential targets and multiple pattern types in a photo, please have the question specify which target we should be examining for the single pattern type determination.
W4ZMUC-5601	All references to blood are suspected blood until confirmed through DNA testing. This report was issued based on the information and evidence available to the analyst and may be subject to change as new information becomes available.
WKM294-5605	The blood was projected to the vertical plane for at least three times and formed three bloodstains of projected pattern. Before the stains in middle and right dried, something wiped through them from left to right and formed the wipe pattern. After the bloodstains were wiped, blood in some places still flowed and covered some wiped stains.
WQTD8V-5605	Item 4 displays 2 distinct pattern types. A drop which is passive and has fallen due to gravity and there is a saturation stain on the towel/rag. Therefore, the 2 pattern types observed are: Drip stain, Saturation stain. Only one can be entered into the online submission.
XT9NFC-5601	For pattern 4, apparent drip stain is also present but trial setters only allow choice of one pattern type.
YX367B-5605	Item #1 not in mm. Measured on screen via computer program, unit arbitrary.

**-End of Report-
(Appendix may follow)**

Collaborative Testing Services ~ Forensic Testing Program

Test No. 20-5601: Bloodstain Pattern Analysis

DATA MUST BE SUBMITTED BY **Aug. 24, 2020, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: MEPE84

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.

This test is divided into two sections: Angle of Impact Determination and Pattern Description.

Patterns provided in the Pattern Description section of the test include a simulated scenario for each item.

As a courtesy, a medium-range shot of the entire pattern target (Items 2-5) has been provided in a digital download supplemental on the CTS customer portal. You must claim a test on the portal to have access to the supplemental download found on the data entry form.

For the digital supplemental material, 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 BSP - Photographs):

Item 1: Angle of Impact Determination (Stains A through E)

Items 2-4: Pattern Description: Part 1

Item 5: Pattern Description: Part 2

Appendix: Suggested Terminology Glossary

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

20-5601_5 Supplemental Images.zip MD5 hash value: aaa1a3cf4e5008f95019ec09d70c4779

20-5601_5 Supplemental Images.zip SHA1 hash value: 7eb7f127f638e5092af4314fcc4b9c4fea8c2dce

Section I: ANGLE OF IMPACT DETERMINATION

Examine bloodstains A-E and report the length and width of each stain along with the calculated angle of impact. For all stains the blood was dropped from a pipette onto white posterboard targets at predetermined angles from the vertical.

Please report a single value for each measurement/calculation, not a range of values.

<u>Stain</u>	<u>Width (mm)</u>	<u>Length (mm)</u>	<u>Angle of Impact (degrees)</u>
A	<input type="text"/>	<input type="text"/>	<input type="text"/>
B	<input type="text"/>	<input type="text"/>	<input type="text"/>
C	<input type="text"/>	<input type="text"/>	<input type="text"/>
D	<input type="text"/>	<input type="text"/>	<input type="text"/>
E	<input type="text"/>	<input type="text"/>	<input type="text"/>

PATTERN DESCRIPTION, PART 1

NOTE: The Pattern Description section is divided into two parts. Please read the instructions carefully prior to filling out the data sheet.

Single Pattern Recognition: For each of the following patterns, indicate the single pattern type that best describes the image. Although you may use different terminology in your casework, in order to standardize responses for this exercise, please make your selection using the terminology provided.

Item 2: Target is painted drywall in the vertical plane. Pattern was found in a room containing a deceased victim with multiple stab wounds.

- | | | |
|--|---|--------------------------------------|
| <input type="radio"/> Cast-off Pattern | <input type="radio"/> Forward Spatter Pattern | <input type="radio"/> Splash Pattern |
| <input type="radio"/> Cessation Pattern | <input type="radio"/> Impact Pattern | <input type="radio"/> Swipe |
| <input type="radio"/> Drip Pattern | <input type="radio"/> Projected Pattern | <input type="radio"/> Transfer Stain |
| <input type="radio"/> Drip Stain | <input type="radio"/> Saturation Stain | <input type="radio"/> Wipe |
| <input type="radio"/> Expiration Pattern | | |

Item 3: Target is a vinyl tile in the horizontal plane. Pattern was found in a bedroom where linens appear to have been removed from the bed.

- | | | |
|--|---|--------------------------------------|
| <input type="radio"/> Cast-off Pattern | <input type="radio"/> Forward Spatter Pattern | <input type="radio"/> Splash Pattern |
| <input type="radio"/> Cessation Pattern | <input type="radio"/> Impact Pattern | <input type="radio"/> Swipe |
| <input type="radio"/> Drip Pattern | <input type="radio"/> Projected Pattern | <input type="radio"/> Transfer Stain |
| <input type="radio"/> Drip Stain | <input type="radio"/> Saturation Stain | <input type="radio"/> Wipe |
| <input type="radio"/> Expiration Pattern | | |

Item 4: Target is a vinyl tile containing a washrag in the horizontal plane. Pattern was found in a bathroom next to a deceased victim of a possible slip and fall.

- | | | |
|--|---|--------------------------------------|
| <input type="radio"/> Cast-off Pattern | <input type="radio"/> Forward Spatter Pattern | <input type="radio"/> Splash Pattern |
| <input type="radio"/> Cessation Pattern | <input type="radio"/> Impact Pattern | <input type="radio"/> Swipe |
| <input type="radio"/> Drip Pattern | <input type="radio"/> Projected Pattern | <input type="radio"/> Transfer Stain |
| <input type="radio"/> Drip Stain | <input type="radio"/> Saturation Stain | <input type="radio"/> Wipe |
| <input type="radio"/> Expiration Pattern | | |

Section II: PATTERN DESCRIPTION cont.

Part 2 - Recognition and Description : For the following pattern, please write a brief description using the Suggested Terminology Glossary provided in the Appendix. Although you may use different terminology in your casework, in order to standardize responses for this exercise, please write your description using the suggested terminology.

Note: This part of the test is not a reconstruction of a scenario, but simply a test of pattern recognition and description.

***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.*

Item 5: Target is painted drywall in the vertical plane. Pattern was found on a wall next to a deceased victim with a laceration to the throat.

Additional Comments

Appendix: Suggested Terminology Glossary*

Accompanying Drop

A small blood drop produced as a by-product of drop formation.

Altered Stain

A bloodstain with characteristics that indicate a physical change has occurred.

Angle of Impact

The angle (alpha), relative to the plane of a target, at which a blood drop strikes the target.

Area of Convergence

The space in two dimensions to which the directionalities of spatter stains can be retraced to determine the location of the spatter producing event.

Area of Origin

The space in three dimensions to which the trajectories of spatter can be utilized to determine the location of the spatter producing event.

Backspatter Pattern

A bloodstain pattern resulting from blood drops which can be produced when a projectile creates an entrance wound.

Blood Clot

A gelatinous mass formed by a complex mechanism involving red blood cells, fibrinogen, platelets, and other clotting factors.

Bloodstain

A deposit of blood on a surface.

Bloodstain Pattern

A grouping or distribution of bloodstains that indicates through regular or repetitive form, order, or arrangement the manner in which the pattern was deposited.

Bubble Ring

An outline within a bloodstain resulting from air in the blood.

Cast-off Pattern

A bloodstain pattern resulting from blood drops released from an object due to its motion.

Cessation Pattern

A bloodstain pattern resulting from blood drops released from an object due to its abrupt deceleration.

Directional Angle

The angle (gamma) between the long axis of a spatter stain and a defined reference line on the target.

Directionality

The characteristic of a bloodstain that indicates the direction blood was moving at the time of deposition.

Drip Pattern

A bloodstain pattern resulting from a liquid that dripped into another liquid, at least one of which was blood.

Drip Stain

A bloodstain resulting from a falling drop that formed due to gravity.

Drip Trail

A bloodstain pattern resulting from the movement of a source of drip stains between two points.

Edge Characteristic

A physical feature of the periphery of a bloodstain.

Expiration Pattern

A bloodstain pattern resulting from blood forced by airflow out of the nose, mouth, or a wound.

Flow

A bloodstain resulting from the movement of a volume of blood on a surface due to gravity or movement of the target

Forward Spatter Pattern

A bloodstain pattern resulting from blood drops which can be produced when a projectile creates an exit wound.

Impact Pattern

A bloodstain pattern resulting from an object striking liquid blood.

Insect Stain

A bloodstain resulting from insect activity.

Parent Stain

A bloodstain from which a satellite stain(s) originated.

Perimeter Stain

An altered stain consisting of its edge characteristics, the central area having been partially or entirely removed.

Pool

A bloodstain resulting from an accumulation of liquid blood on a surface.

Projected Pattern

A bloodstain pattern resulting from the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system.

Satellite Stain

A smaller bloodstain that originated during the formation of the parent stain as a result of blood impacting a surface.

Saturation Stain

A bloodstain resulting from the accumulation of liquid blood in an absorbent material.

Serum Stain

The stain resulting from the liquid portion of blood (serum) that separates during coagulation.

Spatter Stain

A bloodstain resulting from an airborne blood drop created when external force is applied to liquid blood.

Splash Pattern

A bloodstain pattern created from a large volume of liquid blood falling onto a surface.

Swipe

A bloodstain resulting from the transfer of blood from a blood-bearing surface onto another surface, with characteristics that indicate relative motion between the two surfaces.

Target

A surface onto which blood has been deposited.

Transfer Stain

A bloodstain resulting from contact between a blood-bearing surface and another surface.

Void

An absence of blood in an otherwise continuous bloodstain or bloodstain pattern.

Wipe

An altered stain resulting from an object moving through a preexisting wet bloodstain.

* As established by the AAFS Standards Board (ASB) - 2017

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)