DNA Interpretation Test No. 19-589
Summary Report

Each participant received a sample pack consisting of a digital download packet through the CTS portal containing electropherograms and raw data files which they were requested to evaluate using their existing protocols. Data were returned from 38 participants and are compiled into the following tables:

Manufacturer's Information

Each sample pack contained digital files consisting of electropherograms from DNA profiles of two known samples (Items 1 & 2) and two questioned samples (Items 3 & 4). Participants were requested to evaluate the electropherograms and interpret the data using their existing protocols.

SAMPLE PREPARATION: Item 1 was created using blood collected from a male donor. Item 2 was created using blood collected from a female donor. The Item 3 mixture was created by combining two parts of blood from the Item 2 female donor and three parts of blood from a 3rd party female donor. The Item 4 mixture was created by combining five parts of blood from the Item 2 female donor, two parts of blood from a 3rd party male donor, and two parts of blood from a 4th party female donor.

SAMPLE SET ASSEMBLY: Once sample preparation and verification was completed, the digital upload was checked to ensure all items were accessible.

VERIFICATION: Laboratories that conducted predistribution testing of the electropherograms reported consistent results for all loci. All associations were consistent amongst the predistribution laboratories.

Consensus data on the following pages was determined by ensuring at least 10 participants returned results for the locus. Each allele listed was determined by ensuring that at least 75% of participants that returned data for that specific locus and item had reported the same allele.

Amelogenin and STR Results

Results compiled by predistribution laboratories and a consensus of participants.

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		
1	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17	2		
2	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19
	NM	NM	NM	NM		
3	12,13,16,16.3†	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NM	NM	NM	NM		
3major	*	*	11	*	13	*
	*	13	20	10	12	*
	14	28	15	X,X	11	22,24
	*	*	*	6	8	15
	NM	NM	NM	NM		
3minor	*	*	11	*	13	*
	*	*	*	*	*	*
	*	*	*	X,X	11	22
	*	*	*	*	8	*
	NM	NM	NM	NM		
4	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
	6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11	20	17	2		

NM - Non-Male profile, YSTR results not expected.

* Results were not received from a minimum of 10 participants for the loci indicated.

† Additional alleles may be present depending on laboratory thresholds and/or amplification kit used.

YSTR Results

Results compiled from predistribution laboratories and a consensus of participants.

Item	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389-I DYS439 DYS576	DYS389-II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533
1	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		
4	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

(4)

Summary Comments

This test was designed to allow participants to assess their proficiency in evaluating electropherograms (EPGs) and interpreting data. Each participant received electropherograms (in FSA, HID, and PDF formats, as available) of two reference items and two evidence items. The EPG data included were produced from the following amplification kits: GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, YFiler™, PowerPlex® Y23.

Item 1 was the male victim's reference sample. Item 2 was the female suspect's reference sample. Item 3 was a mixture of samples from two individuals, the female suspect and a 3rd party female contributor for whom no reference sample was provided (2:3 ratio respectively). Item 4 was a mixture of samples from three individuals including the female suspect, a 4th party female contributor, and a 3rd party male contributor (5:2:2 ratio respectively); no reference samples were provided for the 4th party female or 3rd party male in Item 4.

Consensus results for each item were determined per allele for each locus. Allele determinations were identified by ensuring that at least 10 participants reported results for the locus and that of these participants, 75% of them reported the same allele(s). Results that differed from the consensus were further compared to the participant's reported interpretation guidelines.

STR Data
Thirty-eight participants evaluated the provided STR data. The most frequently reported amplification kit utilized was GlobalFiler™. For reference Item 1, 35 participants reported data that were concordant with the consensus. For reference Item 2, 37 participants reported data that were concordant with the consensus.

For questioned Item 3, 10 participants attempted the deconvolution of this mixture reporting both a major and a minor profile. A consensus was formed for major and minor profiles at 15 and six loci, respectively. All 10 participants reported major and minor profiles concordant with the consensus. A consensus was achieved for the full Item 3 profile (unseparated), with some participants reporting additional alleles at D1S1656 when utilizing differing analytical thresholds and/or amplification kits for interpretation. Thirty-seven participants reported results in line with the consensus and their reported interpretation guidelines. One participant reported an inconsistency at SE33.

For questioned Item 4, two participants attempted the deconvolution of this mixture. Therefore, no consensus was formed for major and minor profiles. When using their indicated interpretation guidelines and amplification kit data, all participants reported results in line with the consensus except for one participant that reported an inconsistent result at FGA.

YSTR Data
Twenty-six participants reported YSTR results.

For reference Item 1, all participants reported allelic responses that were concordant with the consensus.

For questioned Item 4, all respondents reported results that were concordant with the consensus except for five participants. Two participants reported inconsistent results at DYS385 and DYS389-I. When using their indicated interpretation guidelines and amplification kit data, three participants reported "24,25" at DYS390 whereas consensus was "25".

Conclusions
For Item 3, 35 participants reported two (or at least two) contributors and three participants did not report for number of contributors. When comparing the Item 3 mixture profile with the Item 1 (victim) reference profile, all participants reported that the victim was excluded as a component of the mixture. When comparing the Item 3 mixture profile with the Item 2 (suspect) reference profile, all participants reported that the suspect was included as a component of the mixture.

For Item 4, 35 participants reported that three (or at least three) individuals contributed to the mixture and two did not report a response for number of contributors. One participant reported greater than three contributors. When comparing the Item 4 mixture profile with the Item 1 (victim) reference profile, 31 participants reported that the victim was excluded as a component of the mixture and seven reported inconclusive/uninterpretable. When comparing the Item 4 mixture profile with the Item 2 (suspect) reference profile, 29 participants reported that the victim was included as a component of the mixture and nine reported inconclusive/uninterpretable.

Interpretation Guidelines

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
29L4L4	[Participant did not provide interpretation guidelines]		
2X3NH2	75 rfu	60%	75 rfu
3GXG4Y	STR B:45, G:72, Y:38, R:70, P:55. Y-STR B:57, G:57, Y:41, R:28	60	132
4N93P9	75	60	100
733884	90 rfu: (GlobalFiler)	60%: (GlobalFiler)	400 rfu: (GlobalFiler)
AFYKVQ	190	50%	1160
AGBJQY	150 / 75	60% / 50%	700 / 75
AQZ8MM	1160	50	190
C72T4E	75	60	230
EMZPCN	STR Analysis: 200 rfu, YSTR Analysis: 50 rfu	STR Analysis: 70%, YSTR Analysis: 70%	STR Analysis: 800 rfu, YSTR Analysis: 200 rfu
FJVGLJ	100	60	100
FY8V3G	190	50	1160
G3QA7G	190 rfu	50%	1160 rfu
GXRVJR	75 rfu	60%	100 rfu
GZZ8ZT	40RFU (GF, PPF5C, PPF6C, Investigator, PPY23, YF)	NA (Probabilistic Genotyping)	NA (Probabilistic Genotyping)
HBZXJF	75	60	100
HJ738P	100 RFU	55-100%	325 RFU
JLR7H9	150 RFU	70%	600 RFU
K6XYXF	150 rfu	60% >2000 rfu and >35% <2000 rfu	750 rfu
KBP98D	190 rfu	50%	1160 rfu
KNVYAL	No Interp guidlines for autosomal profiling systems included with this test.		
L48ZJG	100 rfu	60%	300 rfu
LRT3ED	75 rfu	60%(STR Analysis), 50%(YSTR Analysis)	100rfu(STR Analysis), 75rfu(YSTR Analysis)
LVQJQ8	Dye channel-specific: Blue: 345 RFU/ Green:125 RFU/ Yellow: 240 RFU/ Red: 155 RFU/ Purple: 130 RFU	Locus-specific, minimum PHR (%) ranging between 61% 81%	Dye channel-specific: Blue: 820 RFU/ Green: 430 RFU/ Yellow: 735 RFU/ Red: 650 RFU/ Purple: 500 RFU
LWNUKP	75rfu (GF & yFiler)	60% (GF), 50% (yFiler)	100rfu (GF), 75rfu (yFiler)
N34BTG	75	60	100
NNJWPH	75,50	70,60	200,175
NWHQ2H	70	60	500

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
P9K89B	75 rfu	60%	100 rfu
QL6949	190 RFU	50%	1160 RFU
UKZM6X	175 rfu	50%	1000 rfu
V49CTF	75 rfu, 75 rfu	60%, 50%	100 rfu, 75 rfu
VU7RT9	75	60	100
W6YVA8	75 rfu (we used your guidlines because we believe this treshold is laboratory specific and cannot be used to interpret foreign profiles)	60%(we used your guidlines because we believe this treshold is laboratory specific and cannot be used to interpret foreign profiles)	100 rfu (we used your guidlines because we believe this treshold is laboratory specific and cannot be used to interpret foreign profiles)
WBP6K7	[Participant did not provide interpretation guidelines]		
ZBXHF4	STR: 75 RFU - YSTR: 75 RFU	STR: 60 % - YSTR: 50 %	STR: 100 RFU - YSTR: 75 RFU
ZHFNEW	190	50	1160
ZVZW34	B 125RFU, GY 150RFU, P 175 RFU, R 225RFU	50	900 single source, 2000 mixtures

STR & Amelogenin Results

TABLE 2

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

29L4L4	GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17	2		

2X3NH2	GlobalFiler™					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9,9					

3GXG4Y	PowerPlex® Fusion 6C (PDF Format), (HID Format)					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17			

4N93P9	GlobalFiler™ (PDF Format)					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

733884	GlobalFiler™ (PDF Format)					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9,9			2		

AFYKVQ	PowerPlex® Fusion 5C (FSA Format)					
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11		8,9.3	6,8	14,16
	9					

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

AGBJQY　　GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

AQZ8MM　　PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,INC	30,INC	15,18	X,Y	10,10	25,28
	9,12	10,11		8,9.3	6,8	14,16
	9					

C72T4E　　PowerPlex® Fusion 6C (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17			

EMZPCN　　GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	-	-	17,27.2	8,9.3	6,8	14,16
	9	-	-	2		

FJVGLJ　　GlobalFiler™, PowerPlex® Fusion 5C (FSA Format), (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9			2		

FY8V3G　　PowerPlex® Fusion 5C (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11		8,9.3	6,8	14,16
	9					

G3QA7G　　PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,inc.	30,inc.	15,18	X,Y	10,10	25,28
	9,12	10,11	not tested	8,9.3	6,8	14,16
	9	not tested	not tested	not tested		

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

GXRVJR   GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format), (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9,9	17	17	2		

GZZ8ZT   GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17	2		

HBZXJF   GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

HJ738P   GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

JLR7H9   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

K6XYXF   GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

KBP98D   PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11		8,9.3	6,8	14,16
	9					

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

KNVYAL   GlobalFiler™

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
		17,27.2	8,9.3	6,8	14,16
9,9			2		

L48ZJG   GlobalFiler™ (PDF Format), (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
		17,27.2	8,9.3	6,8	14,16
9			2		

LRT3ED   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17	2		

LVQJQ8   PowerPlex® Fusion 6C (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17			

LWNUKP   GlobalFiler™ (PDF Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
N/A	N/A	17,27.2	8,9.3	6,8	14,16
9	N/A	N/A	2		

N34BTG   GlobalFiler™ (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
-	-	17,27.2	8,9.3	6,8	14,16
9	-	-	2		

NNJWPH   PowerPlex® Fusion 6C (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17			

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

NWHQ2H   GlobalFiler™ (FSA Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
		17,27.2	8,9.3	6,8	14,16
9			2		

(Item 1)

P9K89B   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17	2		

(Item 1)

QL6949   PowerPlex® Fusion 5C (FSA Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
9,12	10,11	NT	8,9.3	6,8	14,16
9	NT	NT	NT		

(Item 1)

UKZM6X   GlobalFiler™ (PDF Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
		17,27.2	8,9.3	6,8	14,16
9			2		

(Item 1)

V49CTF   PowerPlex® Fusion 6C (HID Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17			

(Item 1)

VU7RT9   GlobalFiler™ (PDF Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12,12	9,12	12,13
13,13	30,30	15,18	X,Y	10,10	25,28
		17,27.2	8,9.3	6,8	14,16
9			2		

(Item 1)

W6YVA8   PowerPlex® Fusion 6C (PDF Format)

11,16	19,22	10,11	15,16	11,12	9,10
11,15	13,14	18,19	12	9,12	12,13
13	30	15,18	X,Y	10	25,28
9,12	10,11	17,27.2	8,9.3	6,8	14,16
9	17	17			

(Item 1)

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

WBP6K7 GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30,30	15,18	X,Y	10,10	25,28
	9,12	10,11	17,27.2	8,9.3	6,8	14,16
	9	17	17	2		

ZBXHF4 GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12	9,12	12,13
1	13	30	15,18	X,Y	10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

ZHFNEW PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,inconclusive	30,inconclusive	15,18	X,Y	10,10	25,28
	9,12	10,11	not tested	8,9.3	6,8	14,16
	9	not tested	not tested	not tested		

ZVZW34 GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	11,16	19,22	10,11	15,16	11,12	9,10
	11,15	13,14	18,19	12,12	9,12	12,13
1	13,13	30	15,18	X,Y	10,10	25,28
			17,27.2	8,9.3	6,8	14,16
	9			2		

WebCode	Amplification Kits (File Format)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

29L4L4 — GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19
	-	-	-	-		

2X3NH2 — GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

3GXG4Y — PowerPlex® Fusion 6C (PDF Format), (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

4N93P9 — GlobalFiler™ (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
			21,28.2	6,9	8,9	15,19

733884 — GlobalFiler™

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

AFYKVQ — PowerPlex® Fusion 5C (FSA Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12		6,9	8,9	15,19
	ND					

AGBJQY — GlobalFiler™ (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

AQZ8MM — PowerPlex® Fusion 5C (FSA Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12		6,9	8,9	15,19
ND					

Item: 2

C72T4E — PowerPlex® Fusion 6C (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19

Item: 2

EMZPCN — GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
-	-	21,28.2	6,9	8,9	15,19
-	-	-	-	-	

Item: 2

FJVGLJ — GlobalFiler™, PowerPlex® Fusion 5C (FSA Format), (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19

Item: 2

FY8V3G — PowerPlex® Fusion 5C (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12		6,9	8,9	15,19
ND					

Item: 2

G3QA7G — PowerPlex® Fusion 5C (FSA Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12	not tested	6,9	8,9	15,19
ND	not tested	not tested	not tested		

Item: 2

GXRVJR — GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19
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Item: 2

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

GZZ8ZT　　GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

HBZXJF　　GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19
	NM			NM		

HJ738P　　GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19
	NR			NR		

JLR7H9　　GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19
	NR			NR		

K6XYXF　　GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
			21,28.2	6,9	8,9	15,19
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KBP98D　　PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12		6,9	8,9	15,19
	ND					

KNVYAL　　GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

WebCode	Amplification Kits (File Format)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

L48ZJG   GlobalFiler™ (PDF Format), (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
		21,28.2	6,9	8,9	15,19
-			-		

(Item 2)

LRT3ED   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19

(Item 2)

LVQJQ8   PowerPlex® Fusion 6C (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19

(Item 2)

LWNUKP   GlobalFiler™ (PDF Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
N/A	N/A	21,28.2	6,9	8,9	15,19
NSD	N/A	N/A	NSD		

(Item 2)

N34BTG   GlobalFiler™ (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
-	-	21,28.2	6,9	8,9	15,19
NM	-	-	NM		

(Item 2)

NNJWPH   PowerPlex® Fusion 6C (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
8,12	11,12	21,28.2	6,9	8,9	15,19

(Item 2)

NWHQ2H   GlobalFiler™ (FSA Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
		21,28.2	6,9	8,9	15,19

(Item 2)

WebCode	Amplification Kits (File Format)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

P9K89B GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

QL6949 PowerPlex® Fusion 5C (FSA Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	NT	6,9	8,9	15,19
	ND	NT	NT	NT		

UKZM6X GlobalFiler™ (PDF Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

V49CTF PowerPlex® Fusion 6C (HID Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

VU7RT9 GlobalFiler™ (PDF Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19

W6YVA8 PowerPlex® Fusion 6C (PDF Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

WBP6K7 GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format)

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
2	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	21,28.2	6,9	8,9	15,19

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

ZBXHF4   GlobalFiler™ (HID Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X	10,11	22,24
		21,28.2	6,9	8,9	15,19

2

ZHFNEW   PowerPlex® Fusion 5C (FSA Format)

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12	not tested	6,9	8,9	15,19
not detected	not tested	not tested	not tested		

2

ZVZW34   GlobalFiler™

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
		21,28.2	6,9	8,9	15,19
NR			NR		

2

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

29L4L4 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
-	-	-	-		

Item: 3

2X3NH2 GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,15,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

3GXG4Y PowerPlex® Fusion 6C (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

4N93P9 GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

733884 GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,15,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

AFYKVQ　　　PowerPlex® Fusion 5C (FSA Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3 14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12		6,9,9.3	8,9	15,18,19
ND					

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
3major 14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12		6,9	8,9	15,19
ND					

12,13	16,18	11,11	17,18	10,13	10,11
12,14	13,16	19,Inc.	9,10	9,12	15,19
3minor 14,15	28,32.2	11,15	X,X	11,13	22,24
12,12	10,Inc.		6,9.3	8,8	15,18
ND					

AGBJQY　　　GlobalFiler™ (PDF Format)

12,13,15,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3 14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

AQZ8MM　　　PowerPlex® Fusion 5C (FSA Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3 14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
8,12	10,11,12		6,9,9.3	8,9	15,18,19
ND					

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
3major 14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12		6,9	8,9	15,19
ND					

12,13	16,18	11,INC	17,18	10,13	10,11
12,14	13,16	19,INC	9,10	9,12	15,19
3minor 15,INC	32.2,INC	11,INC	X,X	11,13	22,INC / 24,INC
12,INC	10,INC		9.3,INC	8,INC	18,INC
ND					

C72T4E　　　PowerPlex® Fusion 6C (HID Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3 14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

EMZPCN   GlobalFiler™ (HID Format)

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
-	-	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
-	-	-	-		

3major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13	16,18	11,11	17,18	10,13	10,11
12,14	13,16	19,20	9,10	9,12	15,19
14,15	28,32.2	11,15	X,X	11,13	22,24
-	-	15,27.2	6,9.3	8,8	15,18
-	-	-	-		

3minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
-	-	21,28.2	6,9	8,9	15,19
-	-	-	-		

FJVGLJ   GlobalFiler™, PowerPlex® Fusion 5C (FSA Format), (PDF Format)

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

FY8V3G   PowerPlex® Fusion 5C (PDF Format)

Item 3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12		6,9,9.3	8,9	15,18,19
ND					

3major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12		6,9	8,9	15,19
ND					

3minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,13	16,18	11,11	17,18	10,13	10,11
12,14	13,16	19,20	9,10	9,12	15,19
14,15	28,32.2	11,15	X,X	11,13	22,24
12,12	10,12		6,9.3	8,8	15,18
ND					

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

G3QA7G PowerPlex® Fusion 5C (FSA Format)

3	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	not tested	6,9,9.3	8,9	15,18,19
	ND	not tested	not tested	not tested		

3major						
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12		6,9	8,9	15,19
	ND					

3minor						
	12,13	16,18	11,11	17,18	10,13	10,11
	12,14	13,16	19,inc	9,10	9,12	15,19
	15,inc	32.2,inc	11,inc	X,X	11,13	22,inc 24,inc
	12,12	10,inc		9.3,inc	8,inc	18,inc
	ND					

GXRVJR GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format), (HID Format)

3	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
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GZZ8ZT GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

3	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

HBZXJF GlobalFiler™ (HID Format)

3	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NM			NM		

WebCode	Amplification Kits (File Format)				
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D7S820**
	D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
Item	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
	Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
	DYS391	**DYS570**	**DYS576**	**Y Indel**		

Item 3 - STR Results

HJ738P   GlobalFiler™ (PDF Format)

Item	D1S1656 / D8S1179 / D19S433 / Penta D / DYS391	D2S1338 / D10S1248 / D21S11 / Penta E / DYS570	D2S441 / D12S391 / D22S1045 / SE33 / DYS576	D3S1358 / D13S317 / Amelogenin / TH01 / Y Indel	D5S818 / D16S539 / CSF1PO / TPOX	D7S820 / D18S51 / FGA / vWA
3	12,13,16,16.3	16,18,(19),24	11,(11.3)	15,16,17,18	10,(11),13	8,10,11,13
	12,13,14,15	13,(15),(16)	19,20,(22)	9,10,(12)	9,11,12	12,14,15,19
	14,(14.2),15	28,(30),32.2	11,15,(16)	X,X	(10),11,13	22,24
			15,21,27.2,28.2	6,(9),9.3	8,(9)	15,(18),(19)
	NR			NR		
3major	12,13	16,18	11,11	17,18	10,13	10,11
	12,14	13,16	19,20	9,10	9,12	15,19
	14,15	28,32.2	11,15	X,X	11,13	22,24
			15,27.2	6,9.3	8,8	15,18
3minor	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
	14,14.2	28,30	15,16	X,X	10,11	22,24
			21,28.2	6,9	8,9	15,19
	NR			NR		

JLR7H9   GlobalFiler™

Item	D1S1656 / D8S1179 / D19S433 / Penta D / DYS391	D2S1338 / D10S1248 / D21S11 / Penta E / DYS570	D2S441 / D12S391 / D22S1045 / SE33 / DYS576	D3S1358 / D13S317 / Amelogenin / TH01 / Y Indel	D5S818 / D16S539 / CSF1PO / TPOX	D7S820 / D18S51 / FGA / vWA
3	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NR			NR		

K6XYXF   GlobalFiler™ (PDF Format)

Item	D1S1656 / D8S1179 / D19S433 / Penta D / DYS391	D2S1338 / D10S1248 / D21S11 / Penta E / DYS570	D2S441 / D12S391 / D22S1045 / SE33 / DYS576	D3S1358 / D13S317 / Amelogenin / TH01 / Y Indel	D5S818 / D16S539 / CSF1PO / TPOX	D7S820 / D18S51 / FGA / vWA
3	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
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KBP98D   PowerPlex® Fusion 5C (FSA Format)

Item	D1S1656 / D8S1179 / D19S433 / Penta D / DYS391	D2S1338 / D10S1248 / D21S11 / Penta E / DYS570	D2S441 / D12S391 / D22S1045 / SE33 / DYS576	D3S1358 / D13S317 / Amelogenin / TH01 / Y Indel	D5S818 / D16S539 / CSF1PO / TPOX	D7S820 / D18S51 / FGA / vWA
3	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12		6,9,9.3	8,9	15,18,19
	ND					
3major	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12		6,9	8,9	15,19
	ND					
3minor	12,13	16,18	11,11	17,18	10,13	10,11
	12,14	16,inc.	19,inc.	9,10	9,12	15,19
	15,inc.	32.2,inc.	11,inc.	X,X	11,13	22,inc./24,inc.
	12,12	10,inc.		9.3,inc.	8,inc.	18,inc.
	ND					

WebCode / Item	Amplification Kits (File Format)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

KNVYAL   GlobalFiler™ (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,15,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
			15,21,27.2,29.2	6,9,9.3	8,9	15,18,19

L48ZJG   GlobalFiler™ (PDF Format), (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	-			-		

LRT3ED   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

LVQJQ8   PowerPlex® Fusion 6C (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

LWNUKP   GlobalFiler™ (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	N/A	N/A	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NSD	N/A	N/A	NSD		

N34BTG   GlobalFiler™ (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
	-	-	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NM	-	-	NM		

NNJWPH   PowerPlex® Fusion 6C (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

NWHQ2H GlobalFiler™ (FSA Format)

12,13,15,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

P9K89B GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

QL6949 PowerPlex® Fusion 5C (FSA Format)

Item: 3

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	NT	6,9,9.3	8,9	15,18,19
ND	NT	NT	NT		

3major

16,16.3	19,24	11,11.3	15,16	11,13	8,13
13,15	13,15	20,22	10,12	11,12	12,14
14,14.2	28,30	15,16	X,X	10,11	22,24
8,12	11,12	NT	6,9	8,9	15,19
ND	NT	NT	NT		

3minor

12,13	16,18	11,11	17,18	10,INC	10,11
12,14	16,INC	19,INC	9,INC	9,INC	15,19
15,INC	32.2,INC	11,INC	X,X	11,13	22,24
12,12	10,INC	NT	9.3,INC	8,8	18,INC
ND	NT	NT	NT		

UKZM6X GlobalFiler™ (PDF Format), (HID Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
		15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

V49CTF PowerPlex® Fusion 6C (HID Format)

12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

Item: 3

WebCode	Amplification Kits (File Format)					
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D7S820**
	D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
Item	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
	Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
	DYS391	**DYS570**	**DYS576**	**Y Indel**		

Item 3 - STR Results

VU7RT9   GlobalFiler™ (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

W6YVA8   PowerPlex® Fusion 6C (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

WBP6K7   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
	8,12	10,11,12	15,21,27.2,28.2	6,9,9.3	8,9	15,18,19

ZBXHF4   GlobalFiler™ (HID Format)

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	12,13	16,18	11	17,18	10,13	10,11
	12,14	13,16	19,20	9,10	9,12	15,19
3major	14,15	28,32.2	11,15	X	11,13	22,24
			15,27.2	6,9.3	8	15,18
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
3minor	14,14.2	28,30	15,16	X	10,11	22,24
			21,28.2	6,9	8,9	15,19

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

ZHFNEW PowerPlex® Fusion 5C (FSA Format)

	D1S1656 / etc					
	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X	10,11,13	22,24
	8,12	10,11,12	not tested	6,9,9.3	8,9	15,18,19
	not detected	not tested	not tested	not tested		

	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
3major	14,14.2	28,30	15,16	X,X	10,11	22,24
	8,12	11,12	not applicable	6,9	8,9	15,19
	not detected	not applicable	not applicable	not applicable		

	12,13	16,18	11,11	17,18	10,13	10,11
	12,14	13,16	19,inconclusive	9,10	9,12	15,19
3minor	14,15	28,32.2	11,15	X,X	11,13	22,24/22,22/24,24
	12,12	10,inconclusive	not applicable	6,9.3	8,inconclusive	15,18
	not detected	not applicable	not applicable	not applicable		

ZVZW34 GlobalFiler™

	12,13,16,16.3	16,18,19,24	11,11.3	15,16,17,18	10,11,13	8,10,11,13
	12,13,14,15	13,15,16	19,20,22	9,10,12	9,11,12	12,14,15,19
3	14,14.2,15	28,30,32.2	11,15,16	X,X	10,11,13	22,24
			15,21,27.2,28.2	6,9,9.3	8,9	15,18,19
	NR			NR		

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

29L4L4 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17	2		

Item: 4

2X3NH2 GlobalFiler™

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11					

Item: 4

3GXG4Y (PDF Format), (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17			

Item: 4

4N93P9 GlobalFiler™ (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11			2		

Item: 4

733884 GlobalFiler™ (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11			2		

Item: 4

AFYKVQ PowerPlex® Fusion 5C (FSA Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
6,8,11,12,13	7,11,12,13		6,8,9,9.3	8,9,10,11	15,16,18,19
11					

Item: 4

AGBJQY GlobalFiler™ (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11			2		

Item: 4

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

AQZ8MM   PowerPlex® Fusion 5C (FSA Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
6,8,11,12,13	7,11,12,13		6,8,9,9.3	8,9,10,11	15,16,18,19
11					

(Item: 4)

C72T4E   PowerPlex® Fusion 6C (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17			

(Item: 4)

EMZPCN   GlobalFiler™ (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
-	-	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	-	-	2		

(Item: 4)

FJVGLJ   GlobalFiler™, PowerPlex® Fusion 5C (FSA Format), (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

(Item: 4)

FY8V3G   PowerPlex® Fusion 5C (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
6,8,11,12,13	7,11,12,13		6,8,9,9.3	8,9,10,11	15,16,18,19
11					

(Item: 4)

G3QA7G   PowerPlex® Fusion 5C (FSA Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
6,8,11,12,13	7,11,12,13	not tested	6,8,9,9.3	8,9,10,11	15,16,18,19
11	not tested	not tested	not tested		

(Item: 4)

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

GXRVJR — GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17	2		

(Item: 4)

4major

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	X,X	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A		

4minor

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	X,Y	N/A	N/A
		N/A	N/A	N/A	N/A
N/A			N/A		

GZZ8ZT — GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17	2		

(Item: 4)

HBZXJF — GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

(Item: 4)

HJ738P — GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
(15),16,16.3	19,(20),(21),(23),24	11,11.3,(13)	15,16	11,13	8,(9),(11),(13)
(10),(11),(12),13,15	13,14,15	(15),20,(21),22,(23)	(9),10,12	(9),11,12,(13)	12,(13),14,(15),(16)
13,14,14.2,(15)	28,(29),30,32.2	15,16	X,(Y)	(9),10,11	(18),22,(23),24,(26),(30)
		16,18,(19),21,(25.2),28.2	6,(8),9,(9.3)	8,(9),(10),(11)	15,16,(18),19
11			2		

(Item: 4)

JLR7H9 — GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

(Item: 4)

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

K6XYXF GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

Item: 4

KBP98D PowerPlex® Fusion 5C (FSA Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
6,8,11,12,13	7,11,12,13		6,8,9,9.3	8,9,10,11	15,16,18,19
11					

Item: 4

KNVYAL GlobalFiler™

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11			2		

Item: 4

L48ZJG GlobalFiler™ (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

Item: 4

LRT3ED GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17	2		

Item: 4

LVQJQ8 PowerPlex® Fusion 6C (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17			

Item: 4

LWNUKP GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	INC
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
N/A	N/A	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	N/A	N/A	2		

Item: 4

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

N34BTG   GlobalFiler™ (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
-	-	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	-	-	2		

Item: 4

NNJWPH   PowerPlex® Fusion 6C (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17			

Item: 4

NWHQ2H   GlobalFiler™ (FSA Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
10,11			2		

Item: 4

P9K89B   GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17	2		

Item: 4

QL6949   PowerPlex® Fusion 5C (FSA Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	NT	6,8,9,9.3	8,9,10,11	15,16,18,19
11	NT	NT	NT		

Item: 4

UKZM6X   GlobalFiler™ (PDF Format), (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
		16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11			2		

Item: 4

V49CTF   PowerPlex® Fusion 6C (HID Format)

15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
11	20	17			

Item: 4

WebCode	Amplification Kits (File Format)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

VU7RT9　　GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16		9,10,11	18,22,23,24,26,30
			16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11			2		

W6YVA8　　PowerPlex® Fusion 6C (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
	6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11	20	17			

WBP6K7　　GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (FSA Format), (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
	6,8,11,12,13	7,11,12,13	16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11	20	17	2		

ZBXHF4　　GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
			16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11			2		

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,16.3	19,24	11,11.3	15,16	11,13	8,13
	13,15	13,15	20,22	10,12	11,12	12,14
4major	14,14.2	28,30	15,16	X	10,11	22,24
			21,28.2	6,9	8,9	15,19
	—			—		

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23	11,11.3,13	15,16	11,13	8,9,11
	10,11,12,13	13,14,15	15,21,22,23	9,10,12	9,11,12,13	12,13,15,16
4minor	13,14,15	29,30,32.2	15,16	X,Y	9,10,11	18,23,26,30
			16,18,19,25.2	8,9,9.3	8,10,11	16,18
	11			2		

ZHFNEW　　PowerPlex® Fusion 5C (FSA Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	22,23,24,26,30
	6,8,11,12,13	7,11,12,13	not tested	6,8,9,9.3	8,9,10,11	15,16,18,19
	11	not tested	not tested	not tested		

WebCode	Amplification Kits (File Format)				
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

ZVZW34   GlobalFiler™

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	15,16,16.3	19,20,21,23,24	11,11.3,13	15,16	11,13	8,9,11,13
	10,11,12,13,15	13,14,15	15,20,21,22,23	9,10,12	9,11,12,13	12,13,14,15,16
4	13,14,14.2,15	28,29,30,32.2	15,16	X,Y	9,10,11	18,22,23,24,26,30
			16,18,19,21,25.2,28.2	6,8,9,9.3	8,9,10,11	15,16,18,19
	11			2		

YSTR Results

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 1 - YSTR Results

29L4L4 — Yfiler®, PowerPlex® Y23 (PDF Format)

1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

3GXG4Y — PowerPlex® Y23 (FSA Format), (PDF Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

4N93P9 — Yfiler® (PDF Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17		
				21		11		

733884 — Yfiler®

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17		
				21		11		

AFYKVQ — PowerPlex® Y23 (FSA Format)

1								
	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

AGBJQY — Yfiler® (PDF Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17		
				21		11		

EMZPCN — Yfiler® (FSA Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	-	-
	-	-	-	21	-	11		

FJVGLJ — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

GXRVJR — Yfiler®, PowerPlex® Y23 (PDF Format), (HID Format)

1								
	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 1 - YSTR Results

GZZ8ZT — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format), (HID Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

HBZXJF — Yfiler® (FSA Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17		
				21		11		

KNVYAL

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

L48ZJG — PowerPlex® Y23 (PDF Format), (HID Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

LRT3ED — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format), (HID Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

LVQJQ8 — Yfiler® (PDF Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17		
				21		11		

LWNUKP — Yfiler® (PDF Format)

Item								
	16	12,12	14	29	25	9	11	14
1	15	10	11	21	13	17	N/A	N/A
	N/A	N/A	N/A	21	N/A	11		

N34BTG — Yfiler® (FSA Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	-	-
	-	-	-	21	-	11		

NNJWPH — PowerPlex® Y23 (HID Format)

Item								
	16	12	14	29	25	9	11	14
1	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19	**DYS385**	**DYS389-I**	**DYS389-II**	**DYS390**	**DYS391**	**DYS392**	**DYS393**
	DYS437	**DYS438**	**DYS439**	**DYS448**	**DYS456**	**DYS458**	**DYS481**	**DYS533**
	DYS549	**DYS570**	**DYS576**	**DYS635**	**DYS643**	**Y GATA H4**		

Item 1 - YSTR Results

WebCode / Item	DYS19 / DYS437 / DYS549	DYS385 / DYS438 / DYS570	DYS389-I / DYS439 / DYS576	DYS389-II / DYS448 / DYS635	DYS390 / DYS456 / DYS643	DYS391 / DYS458 / Y GATA H4	DYS392 / DYS481	DYS393 / DYS533
NWHQ2H — Yfiler® (PDF Format)								
1	16	12	14	29	25	9	11	14
	15	10	11	21	13	17		
	21			21		11		
P9K89B — Yfiler®, PowerPlex® Y23 (PDF Format)								
1	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		
V49CTF — PowerPlex® Y23 (FSA Format)								
1	16	12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		
VU7RT9 — Yfiler® (PDF Format)								
1	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17		
	21			21		11		
WBP6K7 — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format)								
1	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		
ZBXHF4 — Yfiler® (FSA Format)								
1	16	12	14	29	25	9	11	14
	15	10	11	21	13	17		
	21			21		11		
ZHFNEW — PowerPlex® Y23 (FSA Format)								
1	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17	21	12
	9	17	17	21	12	11		
ZVZW34 — Yfiler® (PDF Format)								
1	16	12,12	14	29	25	9	11	14
	15	10	11	21	13	17		
	21			21		11		

TABLE 3

WebCode	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
Item	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 4 - YSTR Results

29L4L4	Yfiler®, PowerPlex® Y23 (PDF Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

3GXG4Y	PowerPlex® Y23 (FSA Format), (PDF Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

4N93P9	Yfiler® (PDF Format)							
	17	11,14	14	31	24,25	11	11	13
4	14	11	10	19	16	15		
				23		11		

733884	Yfiler® (PDF Format)							
	17	11,14	14	31	24,25	11	11	13
4	14	11	10	19	16	15		
				23		11		

AFYKVQ	PowerPlex® Y23 (FSA Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

AGBJQY								
	17	11,14	14	31	24,25	11	11	13
4	14	11	10	19	16	15		
				23		11		

EMZPCN	Yfiler® (FSA Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	-	-
	-	-	-	23	-	11		

FJVGLJ	Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

GXRVJR	Yfiler®, PowerPlex® Y23 (PDF Format), (HID Format)							
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 4 - YSTR Results

GZZ8ZT — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format), (HID Format)

Item	DYS19/DYS437/DYS549	DYS385/DYS438/DYS570	DYS389-I/DYS439/DYS576	DYS389-II/DYS448/DYS635	DYS390/DYS456/DYS643	DYS391/DYS458/Y GATA H4	DYS392/DYS481	DYS393/DYS533
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

HBZXJF — Yfiler® (FSA Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15		
				23		11		

KNVYAL

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

L48ZJG — PowerPlex® Y23 (PDF Format), (HID Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

LRT3ED — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format), (HID Format)

Item								
	17	11/14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

LVQJQ8 — Yfiler® (PDF Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15		
				23		11		

LWNUKP — Yfiler® (PDF Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	N/A	N/A
	N/A	N/A	N/A	23	N/A	11		

N34BTG — Yfiler® (FSA Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	-	-
	-	-	-	23	-	11		

NNJWPH — PowerPlex® Y23 (HID Format)

Item								
	17	11,14	14	31	25	11	11	13
4	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 4 - YSTR Results

NWHQ2H — Yfiler® (PDF Format) — Item 4

	DYS19/437/549	DYS385/438/570	DYS389-I/439/576	DYS389-II/448/635	DYS390/456/643	DYS391/458/Y GATA H4	DYS392/481	DYS393/533
	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15		
				23		11		

P9K89B — Yfiler®, PowerPlex® Y23 (PDF Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

V49CTF — PowerPlex® Y23 (FSA Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

VU7RT9 — Yfiler® (PDF Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15		
				23		11		

WBP6K7 — Yfiler®, PowerPlex® Y23 (FSA Format), (PDF Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

ZBXHF4 — Yfiler® (FSA Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15		
				23		11		

ZHFNEW — PowerPlex® Y23 (FSA Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15	23	12
	12	20	17	23	11	11		

ZVZW34 — Yfiler® (PDF Format) — Item 4

	17	11,14	14	31	25	11	11	13
	14	11	10	19	16	15		
				23		11		

DNA Conclusions

Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?

TABLE 4

WebCode	Item 3 Conclusion			Item 4 Conclusion		
	# of Contributors	Item 1	Item 2	# of Contributors	Item 1	Item 2
29L4L4	2	Excluded	Included	3	Excluded	Included
2X3NH2		Excluded	Included		Excluded	Included
3GXG4Y	2	Excluded	Included	3	Excluded	Included
4N93P9	2	Excluded	Included	3	Excluded	Included
733884	2	Excluded	Included	at least 3	Excluded	Included
AFYKVQ	2	Excluded	Included	Fusion: at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
AGBJQY	at least 2 individuals	Excluded	Included	at least three	Excluded	Inconclusive / Uninterpretable
AQZ8MM	Mixture of 2 people	Excluded	Included	Mixture of at least 3 people	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
C72T4E	2	Excluded	Included	3	Excluded	Included
EMZPCN	2	Excluded	Included	3	Excluded	Included
FJVGLJ	2	Excluded	Included	3	Excluded	Included
FY8V3G	2	Excluded	Included	3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
G3QA7G	2	Excluded	Included	at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
GXRVJR	2	Excluded	Included	3	Excluded	Included
GZZ8ZT	≥2 Contributors; no males detected	Excluded	Included	≥3 Contributors including ≥1 male	Excluded	Included
HBZXJF	at least 2	Excluded	Included	at least 3	Excluded	Included
HJ738P	2	Excluded	Included	at least 3	Excluded	Included
JLR7H9	Two	Excluded	Included	Three	Excluded	Included
K6XYXF	2	Excluded	Included	>/= 3	Excluded	Included
KBP98D	2	Excluded	Included	at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
KNVYAL	> or = 2	Excluded	Included	> or = 3 contributors	Excluded	Included
L48ZJG	2	Excluded	Included	3	Excluded	Included

TABLE 4

| WebCode | **Item 3 Conclusion** | | | **Item 4 Conclusion** | | |
	# of Contributors	**Item 1**	**Item 2**	**# of Contributors**	**Item 1**	**Item 2**
LRT3ED		Excluded	Included	3	Excluded	Included
LVQJQ8	2	Excluded	Included	likely 3 or 4	Excluded	Included
LWNUKP	2	Excluded	Included	>3	Excluded	Included
N34BTG	at least 2	Excluded	Included	at least 3	Excluded	Included
NNJWPH	2	Excluded	Included	3	Excluded	Included
NWHQ2H		Excluded	Included		Excluded	Included
P9K89B	2	Excluded	Included	3	Excluded	Included
QL6949	2	Excluded	Included	3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
UKZM6X	2	Excluded	Included	3	Excluded	Included
V49CTF	2	Excluded	Included	3	Excluded	Included
VU7RT9	minimum 2	Excluded	Included	minimum 3	Excluded	Included
W6YVA8	minimum 2 persons	Excluded	Included	minimum 3 persons	Excluded	Included
WBP6K7	At least 2 contributors	Excluded	Included	Autosomal=3 / YSTR=1	Excluded	Included
ZBXHF4	2	Excluded	Included	3	Excluded	Included
ZHFNEW	2	Excluded	Included	auto=at least 3/Y=1 contributor	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
ZVZW34	2	Excluded	Included	at least 3	Excluded	Inconclusive / Uninterpretable

Conclusions Response Summary			**Participants reporting conclusions: 38**		
Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?					

| | | Item 3 | | Item 4 | |
		Item 1	Item 2	Item 1	Item 2
	Included	**0**	**38**	**0**	**29**
Responses	Excluded	**38**	**0**	**31**	**0**
	Inconclusive	**0**	**0**	**7**	**9**
	No Response	**0**	**0**	**0**	**0**
	Total	**38**	**38**	**38**	**38**

Statistical Analysis for Item 3

TABLE 5

WebCode	Item 3 Methods & Results
2X3NH2	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** NO STATISTICAL ANALYSIS WAS DONE
3GXG4Y	**Method(s)**: Likelihood Ratio **Stats Analysis:** One hypothesis was formulated. Item 2 + 1 Unknown vs. 2 Unknown (p.o. 0.12) = 2.11E+16
4N93P9	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** No stats calculated since no probative evidence.
733884	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** I do case file reviews only. I analyze the case data sheets to determine if the results are accurately interpreted and the data is correctly entered into the statistical software. I do not perform any separate statistical analysis.
AFYKVQ	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Item 3 Powerplex Fusion5C: A mixture of human DNA profiles was identified in Item 3 which was interpreted as a mixture of two people. Assuming this is a mixture of the suspect (Item 2) and one additional contributor, a human female DNA profile was identified from which the victim (Item 1) is excluded. Item 3 major represents the assumed profile of the suspect (Item 2). Item 3 minor represents the profile of the deduced second contributor. ND = not detected; Inc. = inconclusive
AGBJQY	**Method(s)**: Random Match Probability **Stats Analysis:** Asian: 1.46 x 10^29. Hispanic: 2.14 x 10^28. African American: 1.99 x 10^29. Caucasian: 8.40 x 10^27
C72T4E	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis:** The probability of selecting an unrelated individual at random having alleles at all Fusion 6C autosomal loci consistent with any contributor to this mixture is approximately 1 in 300 trillion [300E12] in the Caucasian population and 1 in 20 quadrillion [20E15] in the African American population.
EMZPCN	**Method(s)**: Likelihood Ratio, Random Match Probability **Stats Analysis:** RMP= 1.18525 x 10^-28. LR= 8.44 x 10^27. The mixed DNA profile from Item 3 are 8.44 octillion (8.44 x 10^27) times more likely; if they originated from Item 2(suspect) and Unknown Person 1 rather than; if they originated from two unknown unrelated individuals as calculated bases on the Caucasian DNA population database below
FJVGLJ	**Method(s)**: Likelihood Ratio **Stats Analysis:** TOTAL LR: 9.660.845.349.762.920.000. The finding is 9.660.845.349.762.920.000 times more likely, if the mixture comes from the suspect and at least one unknown individual, that if it comes from at least two unknown individuals randomly taken in the reference population.
GXRVJR	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Item #3 consists of a DNA mixture from at least 2 individuals. Suspect (Item #2) is included as a potential contributor to this mixture. There is evidence of an additional contributor, apparently female in origin (Unknown #1), to the DNA mixture profile from Item 3. Victim (Item #1) is excluded as a potential contributor to the DNA mixture profile from Item #3.

TABLE 5

WebCode	Item 3 Methods & Results
GZZ8ZT	**Method(s)**: Likelihood Ratio **Stats Analysis:** Under the assumption that the SUSPECT (Item 2) and one unrelated person selected at random from the general population are contributors to this mixture, the likelihood of observing this mixed source profile is ≥1,000,000 times greater (actual LR available upon request) than if it is assumed that two unrelated persons selected at random from the general population are contributors to this mixed-source sample.
HBZXJF	**Method(s)**: Likelihood Ratio **Stats Analysis:** The mixed DNA profile are 1.1 quadrillion (1.1 x 10exp15), 6.9 quadrillion (6.9 x 10exp15) and 15 quadrillion (15 x 10exp15) TIMES more likely; IF they originated from ITEM 2 and one unknown individual RATHER THAN; IF they originated from two unknown unrelated individual as calculated based on [Location-identifying databases listed by participant].
JLR7H9	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis:** The results identified from item 3 are consistent with a mixture of DNA from two contributors. Item 2 (Suspect) cannot be excluded as a possible contributor to this mixture of DNA. Using 21 of 21 loci, the probabilities of selecting an unrelated individual at random who cannot be excluded as one of the possible sources of the DNA profile obtained from the item are approximately: 1 in 1.621 Trillion CPI; >99.9% CPE in the Caucasian population. 1 in 115.4 Trillion CPI; >99.9% CPE in the African American population. 1 in 2.274 Trillion CPI; >99.9% CPE in the Hispanic population
KBP98D	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** A mixture of human DNA profiles was identified in Item 3 which was interpreted as a mixture of two people. Assuming this is a mixture of suspect and one additional contributor, a DNA profile was identified from which victim can be excluded.
KNVYAL	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** No statistical evaluation given that the sample was taken from the suspects shirt and therefore the presence of her DNA is not evidentially significant.
L48ZJG	**Method(s)**: Likelihood Ratio **Stats Analysis:** LR=1,72E014 Hp_(item_2+1_unknown_person) vs. Hd_(2_unknown_persons)
LVQJQ8	**Method(s)**: Likelihood Ratio **Stats Analysis:** A mixed DNA profile consistent with having originated from 2 individuals was obtained from Item 3. The Suspect is included as one of the possible sources of the DNA mixture. It is 3.8 septillion times more likely that the observed profile occurred as a result of a mixture of the Suspect and an unknown individual than if it originated from two unrelated individuals selected at random from the local [Ethnicity] population.
LWNUKP	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** I am a forensic consultant that reviews DNA case files that are submitted to me as evidence. I review the analyst allele calls and evidence to reference sample comparisons so I can understand how the original analyst arrived at their opinions and conclusions. I accept that the population calculations are correct. NSD: No Size Data, INC: Inconclusive, N/A Not Applicable
N34BTG	**Method(s)**: Likelihood Ratio **Stats Analysis:** The mixed DNA profile are 1.1 quadrillion (1.1 x 10^{15}), 6.9 quadrillion (6.9 x 10^{15}) and 15 quadrillion (15 x 10^{15}) TIMES more likely; IF they originated from "Item 2" and one unknown RATHER THAN; IF they originated from two unknowns unrelated individual as calculated based on [Location-identifying databases listed by participant].

TABLE 5

WebCode	Item 3 Methods & Results
NNJWPH	**Method(s)**: Likelihood Ratio **Stats Analysis:** The observed mixture profile is approximately 3.04×10^{18} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and an unknown individual, as opposed to the scenario that it originated from a mixture of DNA from two unrelated unknown individuals, in the African American population. The observed mixture profile is approximately 1.23×10^{17} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and an unknown individual, as opposed to the scenario that it originated from a mixture of DNA from two unrelated unknown individuals, in the Caucasian population. The observed mixture profile is approximately 5.25×10^{17} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and an unknown individual, as opposed to the scenario that it originated from a mixture of DNA from two unrelated unknown individuals, in the Hispanic population.
P9K89B	**Method(s)**: Likelihood Ratio **Stats Analysis:** 9.660.845.349.762.920.000; 9 Trillones
UKZM6X	**Method(s)**: Likelihood Ratio **Stats Analysis:** At least 100 billion (Laboratory threshold)
V49CTF	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** No calculation necessary on this item as it is the suspect's DNA present on her own item which is expected.
VU7RT9	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** No requirement for statistics as shirt belongs to suspect. Could condition based on suspect profile.
W6YVA8	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** When it is a case where donor's DNA is on his own clothes we routinely do not calculate likelihood ratio. Usually finding person's DNA on his own clothes is not disputed. We do calculations in this kind of case only if investigator or prosecutor requests. This is the reason why we did not submit LR calculations for Item 3.
WBP6K7	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** The PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #3 (question sample from stain on suspect's shirt) are consistent with being mixtures of at least two individuals. Item #1 (victim) is excluded as being a contributor to the PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #3. Item #2 (suspect) is included as being a possible contributor to the PowerPlex Fusion 6C and Globalfiler DNA profiles from item #3.
ZHFNEW	**Method(s)**: not applicable **Stats Analysis:** A mixture of human DNA profiles was identified in Item 3 (suspect's shirt) that has been interpreted as a mixture of 2 people. Assuming this is a mixture of the suspect and one additional contributor, a female DNA profile was identified from which the victim is excluded.
ZVZW34	**Method(s)**: Likelihood Ratio **Stats Analysis:** 2.9 E+08 is the likelihood ratio when comparing two hypotheses. Hypothesis 1 (numerator) is that the mixture is that of the suspect and one unknown individual. Hypotheses 2 (denominator) is that the mixture is that of two unknown individuals.

(46)

Statistical Analysis for Item 4
TABLE 6

WebCode	Item 4 Methods & Results
29L4L4	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile of the trace found from the beer bottle (Item 4) has been compared with the profile of the suspect (Item 2). The results of the comparison were assessed given the propositions that (a) The DNA originates from the suspect and two unknown persons; (b) The DNA originates from three unknown persons. The DNA results are in the order of 1E+11 times more probable if the first proposition (a) is true than if the alternative (b) is true.
2X3NH2	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: NO STATISTICAL ANALYSIS WAS DONE
3GXG4Y	**Method(s)**: Likelihood Ratio **Stats Analysis**: Two hypotheses were firstly formulated: Item 1 + 2 Unknown vs. 3 Unknown (p.o. 0.1) = 2.00E-17. Item 2 + 2 Unknown vs. 3 Unknown (p.o. 0.15) = 1.67E+11. Then an other hypothesis was tested. Item 1 + Item 2 + 1 Unknown vs. Item 2 + 2 Unknown (p.o. 0.1) = 3.37E-20
4N93P9	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis**: The probability of randomly selecting an unrelated individual who would be included as a contributor to the DNA mixture profile developed is approximately 1 in 600 thousand.
733884	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: I do case file reviews only. I analyze the case data sheets to determine if the results are accurately interpreted and the data is correctly entered into the statistical software. I do not perform any separate statistical analysis.
AFYKVQ	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: Item 4 PowerPlex Fusion5C: A mixture of human DNA profiles was identified in Item 4 which was interpreted as a mixture of at least three people. This mixture is potentially incomplete and not suitable for comparisons. Item 4 PowerPlex Y23: A human Y-STR DNA haplotype was identified in Item 4 which does not match the Y-STR DNA haplotype of the victim (Item 1). ND = not detected. Please note that the suspect standard (Item 2) was not amplified in PowerPlex Y23.
C72T4E	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis**: The probability of selecting an unrelated individual at random having alleles at all Fusion 6C autosomal loci, except D3S1358, D5S818, and D22S1045 loci, consistent with any contributor to this mixture is approximately 1 in 1 billion in the Caucasian population and 1 in 20 billion in the African American population.
EMZPCN	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis**: Combined PI= 1.9 x 10^-10. Combined PE= 99.9999999805. No. of possible random contributors= 0. The proportion of caucasian population whose individual DNA profile cannot be excluded as contributors of the mixed DNA profile is 1.9x10^-10
FJVGLJ	**Method(s)**: Likelihood Ratio **Stats Analysis**: TOTAL LR: 56.168.386.658.482. The finding is 56.168.386.658.482 times more likely, if the mixture comes from the suspect and at least two unknown individuals, that if it comes from at least three unknown individuals randomly taken in the reference population.

TABLE 6

WebCode	Item 4 Methods & Results
GXRVJR	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: Item 4 consists of a DNA mixture of at least 3 individuals, 2 that are apparently female in origin and 1 that is apparently male in origin. Suspect (Item #2) cannot be excluded as a potential contributor to this mixture. The unknown female (unknown #1) from Item #3 is excluded as a potential contributor to this mixture, and therefore the other potential female contributor in the mixture profile from Item #4 is an additional unknown (unknown #2). Victim (Item #1) is excluded as a potential contributor to the DNA mixture from Item #4. The male contribution is therefore an additional unknown (unknown #3).
GZZ8ZT	**Method(s)**: Likelihood Ratio **Stats Analysis**: Under the assumption that the SUSPECT (Item 2) and two unrelated persons selected at random from the general population are contributors to this mixture, the likelihood of observing this mixed source profile is ≥1,000,000 times greater (actual LR available upon request) than if it is assumed that three unrelated persons selected at random from the general population are contributors to this mixed-source sample.
HBZXJF	**Method(s)**: Likelihood Ratio **Stats Analysis**: The mixed DNA profile are 140 billion (140 x 10exp9), 610 billion (610 x 10exp9) and 1.3 trillion (1.3 x 10exp12) TIMES more likely; IF they originated from ITEM 2 and two unknown individual RATHER THAN; IF they originated from three unknown unrelated individual as calculated based on the [Location-identifying databases listed by participant].
HJ738P	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis**: African-American: 1 in 8.15E+10; Caucasian: 1 in 5.13E+09; Hispanic: 1 in 5.07E+09; Asian 1 in 3.87E+09
JLR7H9	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis**: The results identified from item 4 are consistent with a mixture of DNA from three contributors. Item 2 (Suspect) cannot be excluded as a possible contributor to this mixture of DNA. Using 21 of 21 loci, the probabilities of selecting an unrelated individual at random who cannot be excluded as one of the possible sources of the DNA profile obtained from the item are approximately: 1 in 5.218 Billion CPI; >99.9% CPE in the Caucasian population. 1 in 84.25 Billion CPI; >99.9% CPE in the African American population. 1 in 5.068 Billion CPI; >99.9% CPE in the Hispanic population
KBP98D	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: A mixture of DNA profiles was identified in Item 4 that is unsuitable for comparison.
KNVYAL	**Method(s)**: Likelihood Ratio **Stats Analysis**: likeLTD software has been used to determine likelihood ratio. [Laboratory] would routinely use STRmix for profiles of this type but only for profiles run in house using NGMSELect as the software is set up with [Laboratory] validation data. likeLTD does not rely on internal validation data and can be used for all kits. Only DNA-17 locii have been included in the statistical evaluation which has resulted in a likelihood ratio of 1.8 million. The result would be reported as follows: The DNA profile from sample 4 includes results which are due to the presence of DNA from at least three individuals. All of the results in the DNA profile of the suspect are represented in the DNA profile from item 4 as I would expect if her DNA is present. The significance of these results has been statistically evaluated using probabilistic genotyping software (likeLTD) by considering the following two alternative propositions: The DNA is from the suspect and two others who are unrelated to each other and the suspect. The DNA is from three individuals who are unrelated to each other and to the suspect. The result of the statistical evaluation is that the findings are approximately 1.8 million times more likely if the first proposition is true rather than if the second proposition is true.
L48ZJG	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR=7,47E09 Hp_(item_2+2_unknown_persons) vs. Hd_(3_unknown_persons)

TABLE 6

WebCode	Item 4 Methods & Results
LRT3ED	**Method(s)**: Likelihood Ratio **Stats Analysis**: It is 56.168.386.658.562 more likely if the mixture comes from the suspect and two unknown individuals to come from at least 3 unknown individuals taken at random from the reference population.
LVQJQ8	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile consistent with having originated from 3 or more individuals was obtained from Item 4. The Suspect is included as one of the possible sources of the DNA mixture. Assuming the mixture had originated from 4 individuals, it is 6.5 sextillion times more likely that the observed profile occurred as a result of a mixture of the Suspect and three unknown individuals than if it originated from four unrelated individuals selected at random from the local [Ethnicity] population. Alternatively, if the mixture had originated from 3 individuals instead, it is 75 septillion times more likely that the observed profile occurred as a result of a mixture of the Suspect and two unknown individuals than if it originated from three unrelated individuals selected at random from the local [Ethnicity] population.
LWNUKP	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: I am a forensic consultant that reviews DNA case files that are submitted to me as evidence. I review the analyst allele calls and evidence to reference sample comparisons so I can understand how the original analyst arrived at their opinions and conclusions. I accept that the population calculations are correct. NSD: No Size Data, INC: Inconclusive, N/A Not Applicable
N34BTG	**Method(s)**: Likelihood Ratio **Stats Analysis**: The mixed DNA profile are 140 billion (140×10^9), 610 billion (610×10^9) and 1.3 trillion (1.3×10^{12}) TIMES more likely; IF they originated from "Item 2" and two unknowns RATHER THAN; IF they originated from three unknowns unrelated individual as calculated based on [Location-identifying databases listed by participant]
NNJWPH	**Method(s)**: Likelihood Ratio **Stats Analysis**: The observed mixture profile is approximately 2.48×10^{13} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and two unknown individuals, as apposed to the scenario that it originated from a mixture of DNA from three unrelated unknown individuals, in the African American population. The observed mixture profile is approximately 1.19×10^{12} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and two unknown individuals, as apposed to the scenario that it originated from a mixture of DNA from three unrelated unknown individuals, in the Caucasian population. The observed mixture profile is approximately 4.38×10^{12} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and two unknown individuals, as apposed to the scenario that it originated from a mixture of DNA from three unrelated unknown individuals, in the Hispanic population.
P9K89B	**Method(s)**: Likelihood Ratio **Stats Analysis**: 56.168.386.652.562; 56 Billones
UKZM6X	**Method(s)**: Likelihood Ratio **Stats Analysis**: At least 100 billion (Laboratory threshold)
V49CTF	**Method(s)**: Likelihood Ratio **Stats Analysis**: The genetic profile obtained from Item 4 is interpreted as a mixture of DNA from three contributors. Item 2 (suspect) cannot be excluded as a possible contributor to this mixture. Given this genetic profile, assuming three contributors, it is 22.7 billion times more likely to observe this genetic profile if Item 2 (suspect) and two unknown individuals are contributors than if three unknown individuals are the contributors.

TABLE 6

WebCode	Item 4 Methods & Results
VU7RT9	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: Recommend profile for STRmix analysis
W6YVA8	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR=E011 (ten to the power of 11). Hypotheses: Hp: suspect + 2 unknowns, Hd: 3 unknowns. Pr(drop-out) =0,14. Pr (drop-in) = 0,05. Theta = 0,01
WBP6K7	**Method(s)**: Combined Probability of Exclusion/Inclusion, Counting Method - YSTR **Stats Analysis**: The PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #4 (swab from beer bottle found at crime scene) are consistent with being mixtures of at least three individuals, with one of the contributors being male. Item #1 (victim) is excluded as being a contributor to the PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #4. Item #2 (suspect) is included as being a possible contributor to the PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #4. The expected frequency of individuals who could be a possible contributor to the PowerPlex Fusion 5C, 6C and Globalfiler DNA profiles from item #4 is approximately 1 in 2.2 million in the African American population, approximately 1 in 425,000 in the Caucasian population, and approximately 1 in 1.4 million in the Hispanic population. The Powerplex Y23 and Y-Filer YSTR DNA profiles from item #4 (swab from beer bottle found at crime scene) is consistent with being single source (1 contributor). Item #1 (victim) is excluded as being the source of the Powerplex Y23 and Y-Filer YSTR DNA profiles from item #4. The Powerplex Y23 YSTR DNA profile from item #4 was searched within the YHRD.org YSTR Database. The Powerplex Y23 YSTR DNA profile from item #4 was not seen in the database of 62,737 male haplotypes. Using the 95% Confidence Interval (CI), the expected frequency of males who could have been the source of the PowerPlex Y23 DNA profile from item #4 is approximately 1 in 17,000 males.
ZHFNEW	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: Autosomal: A mixture of human DNA profiles were identified in Item 4 that has been interpreted as mixture of at least 3 people. This mixture is inconclusive for comparison to evidentiary and known profiles. YSTR: A Y-STR haplotype was identified in Item 4 in which the victim (Item 1) is excluded.

Databases Used

TABLE 7

WebCode	Databases Used
29L4L4	Item 3: Item 4: [Ethnicity] population database
3GXG4Y	Item 3: Caucasian Nist Database Item 4: Caucasian NIST Database
4N93P9	Item 3: Item 4: FBI expanded
AGBJQY	Item 3: Allele frequencies were obtained from NIST 1036 Revised US Population Database (July 2017) located at https://strbase.nist.gov/NISTpop.htm. Item 4:
C72T4E	Item 3: CODIS\Popstats\Expanded FBI STR 2015 Item 4: CODIS\Popstats\Expanded FBI STR 2015
EMZPCN	Item 3: https://strbase.nist.gov/NISTpop.htm; 1036-Revised-Allele-Freqs-PopStats-July-19-2017.xlsx (caucasian) Item 4: https://strbase.nist.gov/NISTpop.htm; 1036-Revised-Allele-Freqs-PopStats-July-19-2017.xlsx (caucasian); =5/(2N) was used for FGA(allele 30)
FJVGLJ	Item 3: [Country-specific databases listed by participant]. Item 4: [Country-specific databases listed by participant].
GZZ8ZT	Item 3: Revised-NIST-1036-Allele Frequencies, ABI ID Database + Promega PP Fusion Item 4: Revised-NIST-1036-Allele Frequencies, ABI ID Database + Promega PP Fusion
HBZXJF	Item 3: [Location-identifying databases listed by participant] Item 4: [Location-identifying databases listed by participant]
HJ738P	Item 3: Item 4: NIST 1036
JLR7H9	Item 3: National Institute of Standards (NIST) Population database Item 4: National Institute of Standards (NIST) Population database
KNVYAL	Item 3: Item 4: [Location-identifying database listed by participant]
L48ZJG	Item 3: U.S._population_data_for_29_autosomal_STR_loci.Forensic_Sci.Int.Genet. Item 4: U.S._population_data_for_29_autosomal_STR_loci.Forensic_Sci.Int.Genet.
LRT3ED	Item 3: Item 4: [Country-specific databases listed by participant].
LVQJQ8	Item 3: Local [Ethnicity] database Item 4: Local [Ethnicity] database
N34BTG	Item 3: [Location-identifying databases listed by participant] Item 4: [Location-identifying databases listed by participant]
NNJWPH	Item 3: Lab Retriever Item 4: Lab Retriever

TABLE 7

WebCode	Databases Used
P9K89B	Item 3: [Country-specific databases listed by participant]. Item 4: [Country-specific databases listed by participant].
UKZM6X	Item 3: [Ethnicity] Caucasian Item 4: [Ethnicity] Caucasian
V49CTF	Item 3: Item 4: NIST
W6YVA8	Item 3: Item 4: [Ethnicity] population database was used.
WBP6K7	Item 3: No Statistic Required - Suspect's DNA profile on her own shirt. CPE/CPI calculated upon request. Sample profile outsourced for probabilistic statistics upon request. Item 4: Autosomal = CT State Database (IDP); YSTR = YHRD.org; Sample profile outsourced for probabilistic statistics upon request.
ZVZW34	Item 3: Popstats Expanded FBI STR 2015 Item 4:

Amplification Kit Survey

Please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits yet to be implemented in your laboratory.

TABLE 8

WebCode	Amplification Kit
2X3NH2	IDENTIFILER PLUS, IDENTIFILER DIRECT
3GXG4Y	PowerPlex Y23, PowerPlex Fusion, PowerPlex Fusion6C, PowerPlex ESI System, PowerPlex ESX System, GlobalFiler, YFiler, NGMSElect, MiniFiler, Qiagen 24Plex QS, Argus X-12
FJVGLJ	Power Plex Fusion HS, Power Plex PP 21, Power Plex Y23, Power Plex ESX 17, GlobalFiler, Yfiler, VeriFiler
GZZ8ZT	Yfiler Plus, PowerPlex Y23, Globalfiler, Investigator 24 Plex, PowerPlex Fusion 5C and 6C
HBZXJF	1. Applied Biosystem GlobalFiler Express PCR Amplification Kit. 2. Applied Biosystem AmpFISTR Identifiler Plus PCR Amplification Kit. 3. Applied Biosystem AmpFISTR Yfiler PCR Amplification Kit. 4. Applied Biosystem AmpFISTR Minifiler PCR Amplification Kit. 3. Applied Biosystem Globalfiler PCR Amplification Kit.
JLR7H9	Promega PowerPlex Y23, Applied Biosystems Globalfiler
P9K89B	PowerPlex® ESX17, PowerPlex® CS7, PowerPlex® 21, VeriFiler™, YFilerPlus™.
W6YVA8	NGM, ESI17 Fast, Fusion 6C, YFiler Plus
ZVZW34	Globafiler, Yfiler

Additional Comments

TABLE 9

WebCode	Additional Comments
733884	Item #3: No male DNA developed from the sample from the suspect's shirt. D1S1656 has a 15 allele that calculates as a stutter allele. No other locus has more than 4 alleles present = a 2 person mixture. Item #4: Y-Filer shows a single male profile, which excludes the victim from this item. B_DYS390 has a 24 allele which calculates as a stutter allele.
AFYKVQ	Item 3: With Fusion 5C, this sample was interpreted as a mixture of two people; assuming the suspect is one of the contributors, a female profile was deduced from which the victim (Item 1) can be excluded. "Item 3 major" refers to the assumed profile of the suspect (Item 2) "Item 3 minor" refers to the deduced female profile resulting from the assumption of the suspect's profile. Item 4: With Fusion 5C, this sample was interpreted as a mixture of at least three people; this mixture is potentially incomplete and not suitable for comparisons. Item 4: With PowerPlex-Y23, this sample was interpreted as a single-source Y-STR DNA haplotype from which the victim (Item 1) is excluded. Please note that Item 2 was not profiled in PowerPlex-Y23.
AQZ8MM	Item 3: Mix of two assuming the suspect. The "major" profile represents the assumed profile and "minor" profile represents the deduced profile. Item 4: unresolved mixture that was not interpreted. INC = inconclusive
FY8V3G	Item 3 Major: Assumed Profile; Item 3 Minor: Deduced Profile; Item 4: 18 allele at FGA falls below AT, allele not included on summary sheet
G3QA7G	Item 3 "major" profile represents the assumed profile of the suspect. The "minor" profile represents the deduced unknown profile. inc= inconclusive/ any possible sister allele
GXRVJR	The 13 in DYS456 of the Yfiler Positive control is likely an artifact, but would have been requested to be reinjected to troubleshoot. Due to the number of additional peaks in the positive control for sample c190514KN01G in Globalfiler, this would have been requested to have been reinjected to determine if contamination was present or not. The associated samples would have needed reextraction if the extra peaks could not be resolved.
GZZ8ZT	NOTE: Positive Control (2019-08-29-10-33-16_C10_c190514KN01G) for Item 2 (Globalfiler): Shows a clear indication of possible contamination by a minor contributor at multiple loci. Possibly tube-specific since the negative and reagent blank controls all passed. The minor contributor does not appear to be consistent with the lowest or other minor contributors in item 4. Also, the minor contributor peaks do not appear to be present in suspect's reference sample.
HBZXJF	Data Analysis: 1. The HID data was analyzed with GeneMapper ID-X v1.5 software. 2. The FSA data was analyzed with GeneMapper ID v3.2 software. 3. Statistical evaluation was performed on DNA-view ver37.37.
HJ738P	Item 3: This is a two person (F:F) mixture with an estimated mixture ratio of 58:42. The female suspect (Item 2) is included as a possible contributor and the male victim (Item 1) is excluded. Assumed the presence of the female suspect (Item 2) on the shirt collected from her apartment and deduced the foreign female profile. The profile reported as "Item 3 major" is the deduced female profile. The profile reported as "Item 3 minor" is the assumed female profile. Statistics are not calculated for an exclusion. Item 4: Three person mixture. No access to Probabilistic Genotyping software.
K6XYXF	Possible low level contamination was noted in the Positive Control in well C10 of 2019-08-29-10-33-16. This control is associated with Item 2 (suspect reference) and would need further investigation.
KBP98D	For Item 3--"3 major" represents the alleles of the assumed DNA profile; "3 minor" represents the alleles of the deduced DNA profile. Please note "inc." indicates inconclusive.
N34BTG	1. The HID data was analysed with GeneMapper ID-X v1.5 Software. 2. The FSA data was analysed with GeneMapper ID v3.2 Software. 3. Statistical evaluation was performed on DNA View Software ver 37.37. 4. For YSTR analysis were based on 3130xL interpretation guidelines as follows: Analytical Threshold: 50 rfu, Peak Height Ratio: 60%, Stochastic Threshold: 100 rfu.

TABLE 9

WebCode	Additional Comments
P9K89B	There is no information about line cell of positive controls, therefore we couldn´t confirm alellic assignment.
QL6949	NT=Not Tested. ND=Not Detected. INC=Inconclusive. ITEM 3-Major represents assumed profile of suspect and minor represents deduced unknown female profile.
UKZM6X	Sample 1: OL @ D12S391 removed as pull up from D13S317. Sample 2: OL @ D22S1045 removed as pull up from Amel. Sample 3: 15 @ D1S1656 removed as stutter. Sample 4: 10 @ DYS391 removed as stutter
ZBXHF4	Markers with empty boxes indicate that no analysis was performed. Markers filled with a single dash "-" indicate that no alleles resulted. The mixture interpretation threshold used for analysis was 175 RFU.
ZHFNEW	Item 3: The "major" profile represents the assumed female suspect profile from the her shirt and the "minor" represents the deduced female. Item 4: The # of contributors represented in the autosomal results at least 3 contributors and is inconclusive for comparison. The # contributors represented in the YSTR results is one male contributor. The victim is excluded.
ZVZW34	Only 11 loci in Item 3 met laboratory reporting guidelines for statistics. Item 4 did not meet laboratory reporting guidelines for mixtures. The following comments apply to the GlobalFiler results: The positive control in well C10 failed due to what looks like low level contamination. See loci D8, FGA, and D10 for example. I can not tell if two amplifications were done and if so which one this positive control is for. It appears that the same negative control was injected twice. If there were two amplifications where is the second negative control? Is the reagent blank in well B07 injected twice? Does this reagent blank apply to the questioned samples or the knowns? Since questions and knowns must be extracted separately there should be two reagent blanks. Where is the other reagent blank? Yfiler results: Size standard for positive control failed. Needed to be re-injected.

-End of Report-
(Appendix may follow)

Test No. 19-589: DNA Interpretation

DATA MUST BE SUBMITTED BY **Dec. 2, 2019, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A   WebCode: 8NML8B

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

Scenario:

A physical altercation occurred at a bar involving a male and a female. The male victim was pushed backwards onto a table, resulting in loss of consciousness. The female suspect immediately ran from the scene. Both individuals incurred wounds. Upon investigation, the suspect was identified and apprehended. In addition, a shirt was found and collected from the suspect's apartment containing reddish brown stains. A beer bottle believed to be the suspect's was also collected at the scene where the crime occurred. Known samples from the male victim (Item 1) and the female suspect (Item 2) are provided. The reddish brown stain recovered from the shirt at the suspect's apartment was confirmed as blood by the Serology unit and subsequently submitted for DNA analysis (Item 3). A swab from the beer bottle found at the crime scene was also submitted for DNA analysis (Item 4). The DNA unit has completely consumed all evidence and has provided you with DNA profiles obtained from the items. You are requested to evaluate the DNA profiles using your laboratory-specific guidelines and report your results.

FSA, HID and PDF file formats are provided for use in this test, choose any or all formats for evaluation.

Items Submitted (Sample Pack INT2):

Item 1: DNA profile from reference sample (Male Victim - Hispanic)
Item 2: DNA profile from reference sample (Female Suspect - Caucasian)
Item 3: DNA profile found in the stain on the suspect's shirt
Item 4: DNA profile found from the beer bottle

Part I: DNA ANALYSIS INSTRUCTIONS

- **Use your laboratory's Interpretation guidelines for evaluation of this test.**
- Please report Laboratory Specific Interpretation Guidelines below per amplification kit.
- If interpretation guidelines are not reported, the consensus information will be utilized in the review of results.

Analytical Threshold:

Peak Height Ratio (%):

Stochastic Threshold (Peak Amplitude):

If you do not have Interpretation guidelines, please use the following guidelines and report these values above:

For STR Analysis: Analytical Threshold: 75 rfu, Peak Height Ratio: 60%, Stochastic Threshold (Peak Amplitude): 100 rfu

For YSTR Analysis: Analytical Threshold: 75 rfu, Peak Height Ratio: 50%, Stochastic Threshold (Peak Amplitude): 75 rfu

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!!! IMPORTANT NOTE !!!

If you opt to analyze the .FSA files for YFiler, please note that you must change your analysis settings for the LIZ GS500 size standard to ignore the 250 bp peak.

- Report the allelic results for each Item in the appropriate response boxes.
- If major and minor contributor(s) can be distinguished and your laboratory normally reports this distinction, report the results of the major profile and the minor profile in the appropriately labeled boxes; otherwise, list the alleles in numerical order in the remaining row of boxes labeled with the Item number.
- Please Note: Samples were completely consumed during extraction.

Part I: DNA ANALYSIS
STR & Amelogenin Results for Known Item 1

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.

<u>**STR Amplification Kit Used For Item 1**</u>:

Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA format

Report the Probabilistic Genotyping Software Used (if applicable): [   ]

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
1						

ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
1						

ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
1						

ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
1						

ITEM	DYS391	DYS570	DYS576	Y Indel		
1						

     YSTR Results for Known Item 1

<u>**YSTR Amplification Kit Used For Item 1**</u>:

Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

*Alleles below are sorted in **Default** order.*

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
1								

ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
1								

ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		
1								

Part I: DNA ANALYSIS (continued)
STR & Amelogenin Results for Known Item 2

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.

STR Amplification Kit Used For Item 2:

Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C

☐ HID format   ☐ PDF format   ☐ FSA format

Report the Probabilistic Genotyping Software Used (if applicable): [_____]

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
2						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
2						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
2						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
2						
ITEM	DYS391	DYS570	DYS576	Y Indel		
2						

YSTR Results for Known Item 2

YSTR Amplification Kit Used For Item 2:

Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

*Alleles below are sorted in **Default** order.*

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
2								
ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
2								
ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		
2								

Part I: DNA ANALYSIS (continued)
STR & Amelogenin Results for Questioned Item 3

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.
- For each locus, if a major and minor contributor can be distinguished and your laboratory normally reports this distinction, record the results in the appropriately labeled response boxes.

STR Amplification Kit Used For Item 3:   Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA format

Report the Probabilistic Genotyping Software Used (if applicable): _____

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3						
3 major						
3 minor						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
3						
3 major						
3 minor						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
3						
3 major						
3 minor						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
3						
3 major						
3 minor						
ITEM	DYS391	DYS570	DYS576	Y Indel		
3						
3 major						
3 minor						

YSTR Results for Questioned Item 3

YSTR Amplification Kit Used For Item 3:   Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

*Alleles below are sorted in **Default** order.*

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
3								
3 major								
3 minor								
ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
3								
3 major								
3 minor								
ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		
3								
3 major								
3 minor								

Item 3 DNA Analysis Questions

1) **Record the number of contributors found in the Item 3 DNA profile:** [   ]

2) **Choose the conclusion statement that best describes the results of the analysis for Item 3 based on comparisons with the Known Items** (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

   Item 1 Conclusion

   ○ Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.

   ○ Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 3.

   ○ The DNA typing results for Item 3 in comparison with Item 1 are inconconclusive/uninterpretable.

   Item 2 Conclusion

   ○ Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.

   ○ Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 3.

   ○ The DNA typing results for Item 3 in comparison with Item 2 are inconconclusive/uninterpretable.

3) **Statistical Analysis of Item 3 DNA Typing Results:**

   Select the statistical method(s) used by marking the associated box and report these results in the space below:

   ☐ Combined Probability of Exclusion/Inclusions (CPE/CPI)   ☐ Likelihood Ratio (LR)

   ☐ Random Match Probability (RMP)   Other: [   ]

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

   [   ]

4) **Please list any databases used in the statistical analyses of Item 3 below.**

   [   ]

Part I: DNA ANALYSIS (continued)
STR & Amelogenin Results for Questioned Item 4

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.
- For each locus, if a major and minor contributor can be distinguished and your laboratory normally reports this distinction, record the results in the appropriately labeled response boxes.

STR Amplification Kit Used For Item 4:

Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™　　☐ Investigator® 24plex　　☐ PowerPlex® Fusion 5C　　☐ PowerPlex® Fusion 6C
☐ HID format　　☐ PDF format　　☐ FSA format

Report the Probabilistic Genotyping Software Used (if applicable): [＿＿＿＿＿＿＿]

*Alleles below are sorted in **Default** order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
4						
4 major						
4 minor						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
4						
4 major						
4 minor						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
4						
4 major						
4 minor						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
4						
4 major						
4 minor						
ITEM	DYS391	DYS570	DYS576	Y Indel		
4						
4 major						
4 minor						

YSTR Results for Questioned Item 4

YSTR Amplification Kit Used For Item 4:

Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler™　　☐ PowerPlex® Y23　　☐ FSA format　　☐ HID format　　☐ PDF format

*Alleles below are sorted in **Default** order.*

ITEM	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
4								
4 major								
4 minor								
ITEM	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
4								
4 major								
4 minor								
ITEM	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		
4								
4 major								
4 minor								

Item 4 DNA Analysis Questions

1) **Record the number of contributors found in the Item 4 DNA profile:** [_____]

2) **Choose the conclusion statement that best describes the results of the analysis for Item 4 based on comparisons with the Known Items** (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

    <u>**Item 1 Conclusion**</u>

      ○ Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.

      ○ Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 4.

      ○ The DNA typing results for Item 4 in comparison with Item 1 are inconconclusive/uninterpretable.

    <u>**Item 2 Conclusion**</u>

      ○ Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.

      ○ Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 4.

      ○ The DNA typing results for Item 4 in comparison with Item 2 are inconconclusive/uninterpretable.

3) **Statistical Analysis of Item 4 DNA Typing Results:**

    Select the statistical method(s) used by marking the associated box and report these results in the space below:

☐ Combined Probability of Exclusion/Inclusions (CPE/CPI)   ☐ Likelihood Ratio (LR)

☐ Random Match Probability (RMP)   Other: [_____]

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

[ ]

4) **Please list any databases used in the statistical analyses of Item 4 below.**

[ ]

Part II: ADDITIONAL COMMENTS
Comments regarding any part of this Test.

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

Part III: AMPLIFICATION KIT SURVEY (optional)
To accommodate your laboratory's future needs, please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits to be implemented in your laboratory.

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)