

STR Forensic DNA Case Report

January 2, 2007

To: John Philipsborn
John Philipsborn Law Offices
Civic Center Building, Suite 250
507 Polk Street
San Francisco, CA 94102

CodeCase # 2S04-114
Agency ID# 1993-WVS-05716;
93-05-0666

List of Evidence Received on October 12, 2006 for DNA analysis:

Code #	Description
2S04-114-37	Labeled as "reference buccal swabs (ECHOLS)"
2S04-114-38	Labeled as "reference buccal swabs (MISSKELLEY)"
2S04-114-39	Labeled as "reference buccal swabs (BALDWIN)"

List of Evidence Received on July 7, 2004 for DNA analysis:

Code #	Item ID	Description
2S04-114-01	93-05716 FP2	Labeled as "Left hand nail scrapings from M. Moore."
2S04-114-02	93-05716 FP3	Labeled as "Right hand nail scrapings from M. Moore."
2S04-114-03	93-05716 FP6	Labeled as "Hair from M. Moore ligature."
2S04-114-03A		Slide with two hairs (-03Aa and -03Ab).
2S04-114-03B		Slide with one hair.
2S04-114-04	93-05716 FP6-Q39	Labeled as "Possible tissue from ligature from M. Moore."
2S04-114-05	93-05716 Q1 - Q4	Labeled as "Swabs from M. Moore."
2S04-114-05A		Three "oral" swabs.
2S04-114-05B		Three "rectal" swabs.
2S04-114-05C		Two "nasal" swabs.
2S04-114-05D		Two "penile" swabs.
2S04-114-06	93-05717 FP3	Labeled as "Left hand nail scrapings from S. Branch."
2S04-114-07	93-05717 FP4	Labeled as "Right hand nail scrapings from S. Branch."
2S04-114-08	93-05717 FP5	Labeled as "Two dark Caucasian hairs from S. Branch."
2S04-114-08A		Slide with one hair.
2S04-114-08B		Slide with two hairs (-08Ba and -08Bb).
2S04-114-09	93-05717 FP6	Labeled as "Hair from ligature from S. Branch (skin, tissue, hair from ligature)."
2S04-114-10	93-05717 K1, Q1 - Q4	Labeled as "Blood sample and swabs from S. Branch."
2S04-114-10A		Stained string.
2S04-114-10B		Three "oral" swabs.
2S04-114-10C		Three "rectal" swabs.
2S04-114-10D		Three "nasal" swabs.
2S04-114-10E		Two "penile" swabs.
2S04-114-11	93-05718 FP3	Labeled as "Hair found on C. Byers's body."
2S04-114-11A through -11Z		Slide with 26 hairs (-11A through -11Z).

List of Evidence Received on July 7, 2004 for DNA analysis, cont.:

Bode #	Item ID	Description
2S04-114-12	93-05718 FP4	Labeled as "Left hand nail scrapings from C. Byers."
2S04-114-13	93-05718 FP5	Labeled as "Right hand nail scrapings from C. Byers."
2S04-114-14	93-05718 FP6	Labeled as "Hair from lower body of C. Byers."
2S04-114-15	93-05718 FP8	Labeled as "Hair from C. Byers ligature."
2S04-114-16	93-05718 Q4	Labeled as "Possible tissue from C. Byers ligature (skin, tissue, hair from ligature)."
2S04-114-17	93-05718 FP9	Labeled as "Hair from perineum of C. Byers ligature."
2S04-114-18	93-05718 FP10	Labeled as "Negroid hair from white sheet." [slide with 9 hairs]
2S04-114-18A		Hair from sheet, described as "Negroid hair frag."
2S04-114-18B		Hair from sheet.
2S04-114-18C		Hair from sheet.
2S04-114-18D		Hair from sheet.
2S04-114-18E		Hair from sheet.
2S04-114-18F		Hair from sheet.
2S04-114-18G		Hair from sheet, described as "animal hair."
2S04-114-18H		Hair from sheet.
2S04-114-18I		Hair from sheet.
2S04-114-19	93-05718 Q1-Q3	Labeled as "Swabs from C. Byers"
2S04-114-19A		Three "oral" swabs.
2S04-114-19B		Three "rectal" swabs.
2S04-114-19C		Three "nasal" swabs.
2S04-114-20	93-05716 E3	Labeled as "Hair from E3."
2S04-114-20		Slide with two hairs (-20A and -20B).
2S04-114-21	93-05716 E5	Labeled as "Hair from scout cap."
2S04-114-21		Slide with two hairs (-21A and -21B).
2S04-114-22	93-05716 E126	Labeled as "Hair from knife."
2S04-114-23	93-05716 E127	Labeled as "Hair from tree stump."
	LS1-QH	
2S04-114-24	93-05716 E147	Labeled as "Hair from knife."
2S04-114-24		Slide with two hairs (-24A and -24B).
2S04-114-25	93-05716 E3 Q10	Labeled as "Cutting from blue pants."
2S04-114-26	93-05716 E7 Q6	Labeled as "Cutting from jeans."
2S04-114-27	93-05717 FP7	Labeled as "Dyed hair from white sheet used to cover S. Branch."
2S04-114-28	93-05716 E27	Labeled as "Hair from knife."
2S04-114-29	93-05716 E28	Labeled as "Hair from butterfly knife."
2S04-114-30	93-05716 E134	Labeled as "Hair from knife."
2S04-114-31	93-05716 E178	Labeled as "Kershaw folding knife."
2S04-114-32	93-05716 E1A	Labeled as "Bag of clothing."
2S04-114-32A		Pair of white socks.
2S04-114-32B		Leather (or vinyl) pull tab of unknown origin.
2S04-114-32C		Plastic bag "Time Saver."
2S04-114-32D		Tan button down shirt.
2S04-114-32E		Black thermal shirt.
2S04-114-32F		Cargo style jeans.
2S04-114-32G		One "BIC" disposable razor.
2S04-114-32H		One "BIC" disposable razor.

List of Evidence Received on July 7, 2004 for DNA analysis, cont.:

2S04-114-33	93-05718 FP8 L1	Labeled as "Ligature between L-leg and L-wrist and R-leg and R-wrist [Byers]."
2S04-114-33A		Left side.
2S04-114-33B		Right side.
2S04-114-34	93-05717 FP6 L2	Labeled as "Ligature between ankles and wrist, L-leg, L-wrist, R-leg, R-wrist [Branch]."
2S04-114-34A		Left side.
2S04-114-34B		Right side.
2S04-114-35	93-05717 FP6 L3	Labeled as "Ligature, L-leg, L-wrist, R-leg, R-wrist [Moore]."
2S04-114-35A		Left side.
2S04-114-35B		Right side.
2S04-114-36	93-05716 E17	Labeled as "Three tree branches."

CASE PROCESSING AND RESULTS:

The following items were processed for DNA typing by analysis of the 13 CODIS Short Tandem Repeat (STR) loci, the D2S1338 locus, the D19S433 locus, and the gender determination locus, Amelogenin, using the ABI Identifiler® kit:

- 2S04-114-31B1 (Kershaw folding knife [blade])
- 2S04-114-31B2 (Kershaw folding knife [handle])
- 2S04-114-31B3 (Kershaw folding knife [hinge])
- 2S04-114-37 (Reference buccal sample for ECHOLS)
- 2S04-114-38 (Reference buccal sample for MISSKELLEY)
- 2S04-114-39 (Reference buccal sample for BALDWIN)

The following items were processed for DNA typing by analysis of fifteen STR loci [D3S1358, vWA, FGA, D8S1179, D21S11, D18S51, D5S818, D13S317, D7S820, D16S539, TH01, TPOX, CSF1PO, Penta D, and Penta E] and the gender determination locus, Amelogenin, using the Promega PowerPlex® 16 kit:

- 2S04-114-01 (Left fingernail scrapings [Moore])
- 2S04-114-02 (Right fingernail scrapings [Moore])
- 2S04-114-03B (Hair from ligature [Moore])
- 2S04-114-05A (Oral swab [Moore])
- 2S04-114-05B (Rectal swab [Moore])
- 2S04-114-05C (Nasal swab [Moore])
- 2S04-114-05D (Penile swab [Moore])
- 2S04-114-06 (Left fingernail scrapings [Branch])
- 2S04-114-07 (Right fingernail scrapings [Branch])
- 2S04-114-09 (Hair from ligature [Branch])
- 2S04-114-10A (Piece of red-brown stained string)
- 2S04-114-10B (Oral swab [Branch])
- 2S04-114-10C (Rectal swab [Branch])
- 2S04-114-10D (Nasal swab [Branch])
- 2S04-114-10E (Penile swab [Branch])
- 2S04-114-11R (Hair found on body [Byers])
- 2S04-114-11S (Hair found on body [Byers])
- 2S04-114-11T (Hair found on body [Byers])
- 2S04-114-12 (Left fingernail scrapings [Byers])
- 2S04-114-13 (Right fingernail scrapings [Byers])
- 2S04-114-18E (Hair from sheet)
- 2S04-114-18F (Hair from sheet)
- 2S04-114-18I (Hair from sheet)
- 2S04-114-19A (Oral swab [Byers])
- 2S04-114-19B (Rectal swab [Byers])
- 2S04-114-19C (Nasal swab [Byers])
- 2S04-114-20B (Hair)
- 2S04-114-25 (Cutting from blue pants)
- 2S04-114-31A1 (Kershaw folding knife [blade])

2S04-114-31A2 (Kershaw folding knife [handle])
2S04-114-31A3 (Kershaw folding knife [hinge])
2S04-114-32G (Bag of clothing [razor blade])
2S04-114-32H (Bag of clothing [razor blade])
2S04-114-33A (Ligatures [Byers])
2S04-114-33B (Ligatures [Byers])
2S04-114-34A (Ligatures [Branch])
2S04-114-34B (Ligatures [Branch])
2S04-114-35A (Ligatures [Moore])
2S04-114-35B (Ligatures [Moore])

The DNA profiles reported in this case were determined by procedures that have been validated according to standards established by the Scientific Working Group on DNA Analysis Methods (SWGDM) and adopted as Federal Standards.

After initial testing, the remaining extracts from the following samples were processed as a combined sample:

2S04-114-01 and -02 were combined into sample -01_02 (fingernail scrapings [Moore]-combined)
2S04-114-06 and -07 were combined into sample -06_07 (fingernail scrapings [Branch]-combined)
2S04-114-33A and -33B were combined into sample -33AB (Ligatures [Byers]-combined)
2S04-114-34A and -34B were combined into sample -34AB (Ligatures [Branch]-combined)
2S04-114-35A and -35B were combined into sample -35AB (Ligatures [Moore]-combined)

1. Complete DNA profiles were obtained from the following evidence items:
 - 2S04-114-05A NSF (non-sperm fraction) (Oral swab [Moore])
 - 2S04-114-05B NSF (non-sperm fraction) (Rectal swab [Moore])
 - 2S04-114-05C SF and NSF (sperm fraction and non-sperm fraction) (Nasal swab [Moore])
 - 2S04-114-10A (Piece of red-brown stained string [Branch])
 - 2S04-114-10B SF and NSF (sperm fraction and non-sperm fraction) (Oral swab [Branch])
 - 2S04-114-10C NSF (non-sperm fraction) (Rectal swab [Branch])
 - 2S04-114-19A SF and NSF (sperm fraction and non-sperm fraction) (Oral swab [Byers])
 - 2S04-114-19B SF and NSF (sperm fraction and non-sperm fraction) (Rectal swab [Byers])
2. Partial DNA profiles consisting of four or more reportable loci were obtained from the following evidence items:
 - 2S04-114-05A SF (sperm fraction) (Oral swab [Moore])
 - 2S04-114-10C SF (sperm fraction) (Rectal swab [Branch])
 - 2S04-114-10D NSF (non-sperm fraction) (Nasal swab [Branch])
 - 2S04-114-11R (Hair found on body [Byers])
 - 2S04-114-11S (Hair found on body [Byers])
 - 2S04-114-11T (Hair found on body [Byers])
 - 2S04-114-13 (Right fingernail scrapings [Byers])
 - 2S04-114-19C SF and NSF (sperm fraction and non-sperm fraction) (Nasal swab [Byers])
3. A mixed partial DNA profile consisting of four or more reportable loci was obtained from the following evidence item:
 - 2S04-114-34AB (Ligatures [Branch]-combined)
4. Partial DNA profiles consisting of three or less reportable loci were obtained from the following evidence items:
 - 2S04-114-02 (Right fingernail scrapings [Moore])
 - 2S04-114-01_02 (Left/Right fingernail scrapings [Moore]-combined)
 - 2S04-114-06 (Left fingernail scrapings [Branch])
 - 2S04-114-10D SF (sperm fraction) (Nasal swab [Branch])
 - 2S04-114-10E SF (sperm fraction) (Penile swab [Branch])
 - 2S04-114-34B (Ligatures [Branch])
 - 2S04-114-35AB (Ligatures [Moore]-combined)

5. A mixed partial DNA profile consisting of three or less reportable loci was obtained from the following evidence item:
2S04-114-05D NSF (non-sperm fraction) (Penile swab [Moore])
6. No reportable results were obtained from the following evidence items:
2S04-114-01 (Left fingernail scrapings [Moore])
2S04-114-05B SF (sperm fraction) (Rectal swab [Moore])
2S04-114-05D SF (sperm fraction) (Penile swab [Moore])
2S04-114-09 (Hair from ligature [Branch])
2S04-114-10E NSF (non-sperm fraction) (Penile swab [Branch])
2S04-114-25 NSF (non-sperm fraction) (Cutting from blue pants)
2S04-114-31A2 (Kershaw folding knife [handle])
2S04-114-31B1 (Kershaw folding knife [blade])*
2S04-114-31B2 (Kershaw folding knife [handle])
7. No results were obtained from the following evidence items:
2S04-114-03B (Hair from ligature [Moore])
2S04-114-07 (Right fingernail scrapings [Branch])
2S04-114-06_07 (fingernail scrapings [Branch]-combined)
2S04-114-12 (Left fingernail scrapings [Byers])
2S04-114-18E (Hair from sheet)
2S04-114-18F (Hair from sheet)
2S04-114-18I (Hair from sheet)
2S04-114-20B (Hair)
2S04-114-25 SF (Cutting from blue pants)
2S04-114-31A1 (Kershaw folding knife [blade])
2S04-114-31A3 (Kershaw folding knife [hinge])
2S04-114-31B3 (Kershaw folding knife [hinge])
2S04-114-32G (Bag of clothing [razor blade])
2S04-114-32H (Bag of clothing [razor blade])
2S04-114-33A (Ligatures [Byers])
2S04-114-33B (Ligatures [Byers])
2S04-114-33AB (Ligatures [Byers]-combined)
2S04-114-34A (Ligatures [Branch])
2S04-114-35A (Ligatures [Moore])
2S04-114-35B (Ligatures [Moore])
8. Complete DNA profiles were obtained from the following reference items:
2S04-114-37 (ECHOLS)
2S04-114-38 (MISSKELLEY)
2S04-114-39 (BALDWIN)

The results of the STR analysis are summarized in **Table One**.

*Notes: Evidence item 2S04-114-31B1 contained a DNA profile that matched a Bode staff analyst and therefore no results were reported for this sample.

CONCLUSIONS:

1. Evidence items 2S04-114-01, 2S04-114-05B SF, 2S04-114-05D SF, 2S04-114-09, 2S04-114-10E NSF, 2S04-114-25 NSF, 2S04-114-31A2, 2S04-31B1, and 2S04-114-31B2 failed to yield reportable results; therefore, no further interpretation can be performed.
2. Evidence items 2S04-114-02, 2S04-114-06, 2S04-114-10D SF, and 2S04-114-35AB only contain reportable alleles at the amelogenin locus; indicating DNA from a male. Any male reference sample cannot be excluded as a possible source of the DNA obtained from this sample. No further conclusions can be made regarding these samples.

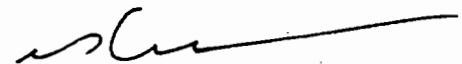
3. Evidence items 2S04-114-03B, 2S04-114-07, 2S04-114-06_07, 2S04-114-12, 2S04-114-18E, 2S04-114-18F, 2S04-114-18I, 2S04-114-20B, 2S04-114-25 SF, 2S04-114-31A1, 2S04-114-31A3, 2S04-114-31B3, 2S04-114-32G, 2S04-114-32H, 2S04-114-33A, 2S04-114-33B, 2S04-114-33AB, 2S04-114-34A, 2S04-114-35A, and 2S04-114-35B failed to yield results; therefore, no further interpretation can be performed.
4. Due to the limited data obtained, no conclusions can be made regarding evidence items 2S04-114-01_02, 2S04-114-05D NSF, 2S04-114-10E SF, 2S04-114-34B, and 2S04-114-34AB.
5. The DNA profiles obtained from reference items 2S04-114-37 (Echols), 2S04-114-38 (Misskelley), or 2S04-114-39 (Baldwin) do not match the DNA profiles obtained from evidence items 2S04-114-05A SF, 2S04-114-05A NSF, 2S04-114-05B NSF, 2S04-114-05C SF, 2S04-114-05C NSF, 2S04-114-10A, 2S04-114-10B SF, 2S04-114-10B NSF, 2S04-114-10C SF, 2S04-114-10C NSF, 2S04-114-10D NSF, 2S04-114-11R, 2S04-114-11S, 2S04-114-11T, 2S04-114-13, 2S04-114-19A SF, 2S04-114-19A NSF, 2S04-114-19B SF, 2S04-114-19B NSF, 2S04-114-19C SF, and 2S04-114-19C NSF; therefore, Echols, Misskelley, and Baldwin are excluded as possible sources of the DNA obtained from these samples.

The remaining evidence will be returned to the Arkansas State Crime Lab.

Report is submitted by:



Rachel Cline, MFS
DNA Analyst III



Michael Cariola, MFS
Forensic Technical Leader

Table One: Summary of STR Results

LOCUS	01 Lt nails Moore	02 Rt nails Moore	01_02 Lt/Rt nails Moore (combined)	03B Hair from ligature Moore	05A SF Oral swab Moore	05A NSF Oral swab Moore	05B SF Rectal swab Moore	05B NSF Rectal swab Moore	05C SF Nasal swab Moore	05C NSF Nasal swab Moore
D3S1358	Inc		Inc		14, 18	14, 18		14, 18	14, 18	14, 18
TH01					8, 9.3	8, 9.3		8, 9.3	8, 9.3	8, 9.3
D21S11					29, 32.2	29, 32.2		29, 32.2	29, 32.2	29, 32.2
D18S51					14, 16	14, 16		14, 16	14, 16	14, 16
Penta E					Inc	12, 12		12, 12	12, 12	12, 12
D5S818			9, 10*		9, 13	9, 13		9, 13	9, 13	9, 13
D13S317					11, 12	11, 12		11, 12	11, 12	11, 12
D7S820					8, 9	8, 9		8, 9	8, 9	8, 9
D16S539					9, 13	9, 13		9, 13	9, 13	9, 13
CSF1PO					Inc	10, 10		10, 10	10, 10	10, 10
Penta D					Inc	9, 10		9, 10	9, 10	9, 10
Amelogenin	Inc	X, Y	X, Y		X, Y	X, Y	Inc	X, Y	X, Y	X, Y
vWA		Inc	Inc		18, 19	18, 19		18, 19	18, 19	18, 19
D8S1179					12, 14	12, 14		12, 14	12, 14	12, 14
TPOX			Inc		8, 8	8, 8		8, 8	8, 8	8, 8
FGA					22, 23	22, 23		22, 23	22, 23	22, 23
D2S1338	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D19S433	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Inc = Inconclusive Gray Area = No Results *Possible peaks below analysis cut-off present NT = Not Tested

Table One: Summary of STR Results

LOCUS	05D SF Penile swab Moore	05D NSF Penile swab Moore	06 Lt nails Branch	07 Rt nails Branch	06_07 Lt/Rt nails Branch (combined)	09 Hair from ligature Branch	10A Stained string Branch	10B SF Oral swab Branch	10B NSF Oral swab Branch	10C SF Rectal swab Branch
D3S1358		Inc					14, 17	14, 17	14, 17	14, 17
TH01							6, 9.3	6, 9.3	6, 9.3	6, 9.3
D21S11							29, 29	29, 29	29, 29	29, 29
D18S51							12, 15	12, 15	12, 15	Inc
Penta E							5, 13	5, 13	5, 13	Inc
D5S818		9, 12, 13					10, 12	10, 12	10, 12	10, 12
D13S317		Inc					8, 11	8, 11	8, 11	8, 11
D7S820							8, 10	8, 10	8, 10	8, 10
D16S539							9, 12	9, 12	9, 12	9, 12
CSF1PO		Inc					12, 12	12, 12	12, 12	
Penta D							6, 9	6, 9	6, 9	Inc
Amelogenin	Inc	X, Y	X, Y			Inc	X, Y	X, Y	X, Y	X, Y
vWA		Inc					18, 19	18, 19	18, 19	18, 19
D8S1179		Inc					12, 13	12, 13	12, 13	12, 13
TPOX		Inc					8, 11	8, 11	8, 11	8, 11
FGA							21, 24	21, 24	21, 24	Inc
D2S1338	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D19S433	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Inc = Inconclusive Gray Area = No Results NT = Not Tested

Table One: Summary of STR Results

LOCUS	10C NSF Rectal swab Branch	10D SF Nasal swab Branch	10D NSF Nasal swab Branch	10E SF Penile swab Branch	10E NSF Penile swab Branch	11R Hair on body Byers	11S Hair on body Byers	11T Hair on body Byers	12 Lt nails Byers	13 Rt nails Byers
D3S1358	14, 17	Inc	14, 17			14, 16	14, 16	14, 16		14, 16
TH01	6, 9.3		6, 9.3			9.3, 9.3	9.3, 9.3	9.3, 9.3		9.3, 9.3
D21S11	29, 29		29, 29			Inc				Inc
D18S51	12, 15		12, 15	Inc						
Penta E	5, 13		Inc							
D5S818	10, 12	Inc	10, 12	Inc			11, 12	11, 12		11, 12
D13S317	8, 11		8, 11			8, 12	Inc	8, 12		8, 12
D7S820	8, 10		8, 10							
D16S539	9, 12		9, 12	8, 11		Inc				Inc
CSF1PO	12, 12	Inc	12, 12				Inc			
Penta D	6, 9		6, 9							
Amelogenin	X, Y	X, Y	X, Y	X, Y	Inc	Inc	X, Y	X, Y		X, Y
vWA	18, 19		18, 19			17, 19	17, 19	17, 19		17, 19
D8S1179	12, 13		12, 13			Inc				
TPOX	8, 11		8, 11	Inc		Inc	8, 8	Inc		Inc
FGA	21, 24		21, 24				Inc			
D2S1338	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D19S433	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Inc = Inconclusive Gray Area = No Results NT = Not tested

Table One: Summary of STR Results

LOCUS	18E Hair from sheet	18F Hair from sheet	18I Hair from sheet	19A SF Oral swab Byers	19A NSF Oral swab Byers	19B SF Rectal swab Byers	19B NSF Rectal swab Byers	19C SF Nasal swab Byers	19C NSF Nasal swab Byers
D3S1358				14, 16	14, 16	14, 16	14, 16	14, 16	14, 16
TH01				9.3, 9.3	9.3, 9.3	9.3, 9.3	9.3, 9.3	9.3, 9.3	9.3, 9.3
D21S11				30, 32.2	30, 32.2	30, 32.2	30, 32.2	30, 32.2	30, 32.2
D18S51				12, 17	12, 17	12, 17	12, 17	12, 17	12, 17
Penta E				11, 11	11, 11	11, 11	11, 11	11, 11	11, 11
D5S818				11, 12	11, 12	11, 12	11, 12	11, 12	11, 12
D13S317				8, 12	8, 12	8, 12	8, 12	8, 12	8, 12
D7S820				9, 12	9, 12	9, 12	9, 12	9, 12	9, 12
D16S539				9, 11	9, 11	9, 11	9, 11	9, 11	9, 11
CSF1PO				10, 13	10, 13	10, 13	10, 13	Inc	Inc
Penta D				9, 10	9, 10	9, 10	9, 10	9, 10	9, 10
Amelogenin				X, Y	X, Y	X, Y	X, Y	X, Y	X, Y
vWA				17, 19	17, 19	17, 19	17, 19	17, 19	17, 19
D8S1179				12, 14	12, 14	12, 14	12, 14	12, 14	12, 14
TPOX				8, 8	8, 8	8, 8	8, 8	8, 8	8, 8
FGA				22, 25	22, 25	22, 25	22, 25	22, 25	22, 25
D2S1338	NT	NT	NT	NT	NT	NT	NT	NT	NT
D19S433	NT	NT	NT	NT	NT	NT	NT	NT	NT

Inc = Inconclusive Gray Area = No Results NT = Not Tested

Table One: Summary of STR Results

LOCUS	20B Hair	25 SF Cutting from blue pants	25 NSF Cutting from blue pants	31A1 Knife (blade)	31A2 Knife (handle)	31A3 Knife (hinge)	31B1 Knife (blade)	31B2 Knife (handle)	31B3 Knife (hinge)	32G Razor Blade	32H Razor Blade	33A Ligatures Byers
D3S1358							Inc					
TH01							Inc	Inc				
D21S11							Inc					
D18S51							Inc					
Penta E							NT	NT	NT			
D5S818							Inc					
D13S317							Inc					
D7S820							Inc					
D16S539							Inc					
CSF1PO							Inc					
Penta D							NT	NT	NT			
Amelogenin			Inc		Inc		Inc					
vWA							Inc					
D8S1179							Inc					
TPOX							Inc					
FGA							Inc					
D2S1338	NT	NT	NT	NT	NT	NT	Inc			NT	NT	NT
D19S433	NT	NT	NT	NT	NT	NT	Inc			NT	NT	NT

Inc = Inconclusive Gray Area = No Results NT = Not Tested

Table One: Summary of STR Results

LOCUS	33B Ligatures Byers	33AB Ligatures Byers (combined)	34A Ligatures Branch	34B Ligatures Branch	34AB Ligatures Branch (combined)	35A Ligatures Moore	35B Ligatures Moore	35AB Ligatures Moore (combined)	37A Reference sample for ECHOLS	38A Reference sample for MISSKELLEY	39A Reference sample for BALDWIN
D3S1358					14,17				14,15	15,17	16,17
TH01									7,9.3	9.3,9.3	6,7
D21S11				Inc	Inc				29,31	29,31.2	28,31.2
D18S51									14,17	12,17	13,17
Penta E									NT	NT	NT
D5S818					10,11,12			Inc	11,12	11,12	9,9
D13S317					8,11			Inc	8,11	9,12	9,11
D7S820									10,12	11,12	11,11
D16S539									11,12	11,12	11,11
CSF1PO					Inc				10,11	10,12	10,12
Penta D					6, 9				NT	NT	NT
Amelogenin				X,Y	X,Y			X,Y	X,Y	X,Y	X,Y
vWA				18,19	Inc				16,20	15,17,(18)	16,18
D8S1179					Inc				12,13	13,15	11,12
TPOX									8,8	8,11	9,11
FGA					Inc				21,24	21,22	24,24
D2S1338	NT	NT	NT	NT	NT	NT	NT	NT	24,24	23,23	24,25
D19S433	NT	NT	NT	NT	NT	NT	NT	NT	13,16	13.2,14	14,15

Inc = Inconclusive Gray Area = No Results NT = Not Tested () = minor allele