STATE OF UTAH CONTRACT NUMBER: **MA1872** May 26, 2006

Revision number: 5 Purchasing Agent: FRANK VOLK

Item: VESTS: POLICE, CORRECTIONS, TACTICAL, SPECIAL USE

Vendor:	930046A	FIRST CHOICE ARMOR & EQUIPMENT 764 NORTH MAIN STREET BRACKTON, MA 02301-2443
Internet Homepage:		www.firstchoicearmor.com
Telephone:		1-508-559-0777 ext 14 cell-1-406-690-1113
Fax number:		1-508-941-6841
Contact:		JODY EBERHART
Email address:		jleberhart@firstchoicearmor.com
Brand/trade name:		FIRST CHOICE
Price:		**PRICES LISTED ARE FOR SINGLE PURCHASES - VOLUME DISCOUNTS WILL APPLY FOR MULTIPLE ORDERS**
Terms:		
Effective dates:		12/03/04 through 12/01/06 (with 3-1 year renewal options) 2009
Days required for delivery:		
Price guarantee period:		1 YEAR
Minimum order:		1
Min shipment without charges:		1
Other conditions:		

REVISION #5: NEW DISTRIBUTOR ADDED.

Bid No. FV4911

Colorado Coop bid # IFB - VESTS - MW04 now referred IFB - VESTS - COOP - MW005
Master price agreement # 6800YYY03P
All concealable vests under this contract were NIS LAB CERTIFIED Re-tested.
These concealable vests on this contract passed this testing.

This is a multiple award: Please review MA1874 U S Armor (CVT), MA1941 Protective Products (CVT), MA1872 First Choice (CVT), MA1009 Skaggs, MA1530 PACA, MA1531 Point Blank, and MA1546 Gator Hawk.

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice which reflects incorrect pricing.

STATE OF UTAH CONTRACT NUMBER: **MA1872** May 26, 2006

Distributor(s): 67238A Farm Police Supply
5189 S. 300 W.
Murray, UT 84107
Telephone: 801-313-0802
Fax: 801-313-0806

All prices below are eligible for volume discount negotiations by ordering agencies. Please call the Manufacturer's representative for more information.

The vests listed on this contract have passed a NIJ ballistic test, as a usable vest. All vest test results are included on this contract summary. Any questions regarding this award or the tests conducted can be directed to the state purchasing agent (Frank Volk 801-538-3707)

Agreement Prices:

BALLISTIC ARMOR
(Larger sizes may incur Up-Charges.)

FEMALE:

MFF22C Threat Level II
Includes two carriers, Cool-Tek, one trauma plate, soft or hard $461.25

Test results on the MFF22C vest is available at the end of this contract summary

ATGF 253C Threat Level II

Includes two carriers, Cool-Tek, one trauma plate, soft or hard $822.50

Test results on the MFF22C vest is available at the end of this contract summary

MALE:

ICC526-IIIA Threat Level IIIA
Includes two carriers, Cool-Tek, and one trauma plate, soft or hard. $940.00

Test results on the ICC526 vest is available at the end of this contract summary

ATGF243C Threat Level II
Includes two carriers, Cool-Tek, one trauma plate, soft or hard $822.50

Test results on the ICC526 vest is available at the end of this contract summary

MF19C Threat Level II
Includes two carriers, Cool-Tek, one trauma plate, soft or hard $461.25

Test results on the ICC526 vest is available at the end of this contract summary

STATE OF UTAH CONTRACT NUMBER: **MA1872** May 26, 2006

MORE BALLISTIC ARMOR MAY BE AWARDED AS TESTING IS COMPLETED.

CARRIERS	MSRP	STATE PRICING
All of our carriers are designed to work with either ballistic/stab armor or correctional spike armor packages. All concealable carriers are made with FCA's Patent Pending Leveler System which prevents the vest from scissoring.		
Fire Retardant Concealable Carrier	$190.00	**$114.00**
Concealable Carrier- All polycotton	$90.00	**$54.00**
Concealable Carrier- Polycotton Outer/Cool Tek Mesh Inner	$100.00	**$60.00**
Concealable Carrier- All Cool Tek Mesh	$110.00	**$66.00**
Cool Mesh T-Shirt Carrier	$150.00	**$90.00**
Quilted Shell	$130.00	**$78.00**
Undercover Surveillance Jacket	$190.00	**$114.00**
Court Officer Shell	$150.00	**$90.00**
Tactical Assault Shell	$170.00	**$102.00**
Tactical Assault Shell - II	$190.00	**$114.00**
Tactical Assault Shell - III	$290.00	**$174.00**
Tactical Assault Shell - HD	$310.00	**$186.00**
Fire Retardant TAS	$450.00	**$270.00**
Weapons Instructor Shell	$190.00	**$114.00**
SPEC OPS I	$180.00	**$108.00**
EMS I	$390.00	**$234.00**
Ice Cold Vest w/ Gel Packs	$270.00	**$162.00**
"H" Harness- worn over concealed armor	$200.00	**$120.00**
Operator's Plate Harness- worn over concealed armor	$290.00	**$174.00**
TAS Optional Ballistic Shoulder Pads	$200.00	**$120.00**
Modular Snap & Velcro Grid for TAS	$200.00	**$120.00**
Modular Snap & Velcro Grid for TAS w/ 5 pouches	$300.00	**$180.00**
Replacement Velcro Waist Straps (for tactical side opening vest)	$16.00	**$9.60**

First Choice Armor offers the following vests for the State of Colorado IFB-VESTS-COCOOP-MW05 Solicitation. These vests are certified to the N.I.J. Standard 0115.00.

CONCEALABLE SPIKE SERIES

Millennium SS009 – Spike I
Aerial Density = .20 psf, Thickness = .125"
Unit Price: $504.00

Millennium SS0013 – Spike II
Aerial Density = .28 psf, Thickness = .150"
Unit Price $660.00

Millennium SS0017 – Spike III
Aerial Density = .36 psf, Thickness = .170"
Unit Price $750.00

TACTICAL SPIKE SERIES

Metro Pro - CERT 1 Spike I	$956.25
Metro Pro - CERT 1 Spike II	$1,231.25
Metro Pro - CERT 1 Spike III	$1,607.50
ERV Pro - CERT Spike I	$906.25
ERV Pro - CERT Spike II	$1,173.75
ERV Pro - CERT Spike III	$1,445.00
Modular Sleeves - ERV Pro CERT or Metro Pro - CERT Spike I	$165.00
Modular Sleeves - ERV Pro CERT or Metro Pro - Spike II	$220.00
Modular Sleeves - ERV Pro CERT or Metro Pro - Spike III	$275.00
Telescoping Groin - ERV Pro CERT or Metro Pro - Spike I	$103.75
Telescoping Groin - ERV Pro CERT or Metro Pro - Spike II	$145.00
Telescoping Groin - ERV Pro CERT or Metro Pro - Spike III	$186.25
Dual-Man Drag Strap - ERV Pro CERT or Metro Pro	$35.00
CERT Suit - (Short Sleeve) - CALL FOR PRICING	$0.00
CERT Suit - (Long Sleeve) - CALL FOR PRICING	$0.00
Riot Control Vest	$593.75
Breaching Vest	$593.75
FCRS - RIOT SUIT	$118.75

First Choice Armor offers the following tactical vests for the State of Colorado IFB-VESTS-COCOOP-MW05 Solicitation. These vests are certified to the N.I.J. Standard 0101.04 & meet N.I.J. 2005 Interim Requirements.

MODEL	STYLE – CARRIER	LEVEL		UNIT PRICE
MF10NS	MRV	IIIA	TACTICAL	$1,747.00
MF10NS	FIRST RESPONSE	IIIA	TACTICAL	$1,546.00
MF10NS	OTV	IIIA	TACTICAL	$1,734.00
MF10NS	METRO PRO	IIIA	TACTICAL	$1,344.00
MF19	METRO PRO	II	TACTICAL	$753.00
MF8	METRO PRO	II	TACTICAL	$1,109.00
MF160	TRI TAC	IIA	TACTICAL	$706.00
MF19	TRI TAC	II	TACTICAL	$786.00
MF8	TRI TAC	II	TACTICAL	$1,142.00

MF10NS	TRI TAC	IIIA	TACTICAL	$1,378.00
MF19	STINGER	II	TACTICAL	$665.00
MF8	STINGER	II	TACTICAL	$1,001.00
MF10NS	STINGER	IIIA	TACTICAL	$1,210.00
MF160	ERV BASIC	IIA	TACTICAL	$605.00
MF19	ERV BASIC	II	TACTICAL	$544.00
MF8	ERV BASIC	II	TACTICAL	$780.00
MF10NS	ERV BASIC	IIIA	TACTICAL	$981.00
MF160	ERV PRO I	IIA	TACTICAL	$739.00
MF19	ERV PRO I	II	TACTICAL	$847.00
MF8	ERV PRO I	II	TACTICAL	$1,176.00
MF10NS	ERV PRO I	IIIA	TACTICAL	$1,404.00
MF160	MOD TAC	IIA	TACTICAL	$638.00
MF19	MOD TAC	II	TACTICAL	$591.00
MF8	MOD TAC	II	TACTICAL	$874.00
MF10NS	MOD TAC	IIIA	TACTICAL	$1,042.00
MF160	NORTAC	IIA	TACTICAL	$874.00
MF19	NORTAC	II	TACTICAL	$759.00
MF8	NORTAC	II	TACTICAL	$1,089.00
MF10NS	NORTAC	IIIA	TACTICAL	$1,324.00

Finet Commodity Code(s):
68008000000 - Police Protection Equipment (Body Armor and Riot Shields) and Supplies

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 06/14/05
Report Number: 9643-32
Report Date: 06/14/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/HEIL
Name

Witnessed by: Name
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 06/10/05
*Ballistic Material: Aramid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: MFF22C
Style: MFF22C
Male/Female: FEMALE

NIJ Armor Type: 2 *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED										
Panel Serial Number:	219714	219714	219718	219718	219717	219717	219713	219713	219715	219715										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	1377	1377	1377	1377	1377	1377	1377	1377	1377	1377										
Gross Weight (lb.):	2.39	2.48	2.37	2.48	2.38	2.49	2.38	2.48	2.38	2.48										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.357 Mag	.357 Mag	.357 Mag	.357 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	158/JSP	158/JSP	158/JSP	158/JSP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1205	1205	1205	1205	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):																				
Bullet Manufacturer:	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON
Bullet Lot Number:	23558	23558	23558	23558	22847	22847	22847	22847	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	4.0	4	4.0	4.0	10.0	10	10.0	10.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	22	22
Description of Stitching:	2" DIAMOND QUILT (1-22), 2.0" - 2.75" STITCHES AT THE BREAST AREA (1-6, 7-12, 13-17 AND 18-22)	2" DIAMOND QUILT (1-22)
Individual Layer Description:	LAYERS 1-22 FLEX WOVEN ARAMID FIBER (23x24)	LAYERS 1-22 FLEX WOVEN ARAMID FIBER (23x24)

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL
NOTE: FRONT PANEL ANGLE SHOT ON SEAM: BREAST SEAM WAS LESS THEN 3" FROM AN EDGE WHICH MAKES IT IMPOSSIBLE TO IMPACT THE SEAM AS PER NIJ-STD-0101.04 SECTION 5.12.4.1.

H.P. WHITE LABORATORY, INC.
3114 Scarboro Road
Street, Maryland 21154-1822
Telephone: (410) 838-6550
Facsimile: (410) 838-2802
Email: info@hpwhite.com
www.hpwhite.com

12 July 2005
(HPWLI 9643-35A)

First Choice Armor and Equipment, Inc.
764 N. Main Street
Brockton, MA 02301

Attention: Mr. Tom Madison

Gentlemen:

In accordance with your letter, dated 6 July 2005, H.P. White Laboratory, Inc. conducted ballistic resistance testing of one female model of First Choice Armor and Equipment, Inc. protective armor, identified as Model ATGFF253CC, received 7 July 2005.

Testing, which was NOT authorized by the National Law Enforcement and Corrections Technology Center (NLECTC), was conducted in accordance with the modified provisions of NIJ-STD-0101.04, BALLISTIC RESISTANCE TESTING OF POLICE BODY ARMOR, dated September 2000, Level 2. The results of this test are NOT to be used for certification of the armor in conjunction with the U.S. Department of Justice certification program for personal protective armor intended for use by law enforcement officers.

All data obtained from this testing were derived from the samples tested, and should NOT be interpreted as an endorsement by H.P. White Laboratory, Inc. of the continuing quality, or performance, of any other items of the same, or similar, design.

Should you have any questions regarding this matter, or if we may be of any further service, please do not hesitate to contact us.

Very truly yours,

H.P. White Laboratory, Inc.

Craig B. Dunn

CBD/tc
Enclosures

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 06/14/05
Report Number: 9643-32
Report Date: 06/14/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/HEIL
Name

Witnessed by: Name
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 06/10/05
*Ballistic Material: Aramid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: MFF22C
Style: MFF22C
Male/Female: FEMALE

NIJ Armor Type: 2 *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED										
Panel Serial Number:	219714	219714	219718	219718	219717	219717	219713	219713	219715	219715										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	1377	1377	1377	1377	1377	1377	1377	1377	1377	1377										
Gross Weight (lb.):	2.39	2.48	2.37	2.48	2.38	2.49	2.38	2.48	2.38	2.48										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.357 Mag	.357 Mag	.357 Mag	.357 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	158/JSP	158/JSP	158/JSP	158/JSP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1205	1205	1205	1205	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):																				
Bullet Manufacturer:	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON
Bullet Lot Number:	23558	23558	23558	23558	22847	22847	22847	22847	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	4.0	4	4.0	4.0	10.0	10	10.0	10.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	22	22
Description of Stitching:	2" DIAMOND QUILT (1-22), 2.0" - 2.75" STITCHES AT THE BREAST AREA (1-6, 7-12, 13-17 AND 18-22)	2" DIAMOND QUILT (1-22)
Individual Layer Description:	LAYERS 1-22 FLEX WOVEN ARAMID FIBER (23x24)	LAYERS 1-22 FLEX WOVEN ARAMID FIBER (23x24)

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL
NOTE: FRONT PANEL ANGLE SHOT ON SEAM: BREAST SEAM WAS LESS THEN 3" FROM AN EDGE WHICH MAKES IT IMPOSSIBLE TO IMPACT THE SEAM AS PER NIJ-STD-0101.04 SECTION 5.12.4.1.

NATIONAL H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

HANDLOAD VERIFICATION WORKSHEET

Report Number: 9643-32
Report Date: 06/14/05
NIJ Armor Type: 2

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 69.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Ammunition: 9mm 124/FMJ
Test Date: 06/14/05

Ammunition: .357 Mag 158/JSP
Test Date: 06/14/05

Test Round 1							Test Round 2						
Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)
1	5.1	4121	1213	4131	1210	1212	1	8.3	3516	1422	3524	1419	1420
2	5.1	4185	1195	4195	1192	1193	2	8.3	3507	1426	3515	1422	1424
3	5.1	4203	1190	4213	1187	1188	3	8.3	3488	1433	3496	1430	1432
4	5.1	4178	1197	4188	1194	1195	4	8.3	3477	1438	3485	1435	1436
5	5.1	4214	1187	4224	1184	1185	5	8.3	3491	1432	3499	1429	1431
6	5.1	4133	1210	4143	1207	1208	6	8.3	3482	1436	3490	1433	1434
7	5.1	4152	1204	4162	1201	1203	7	8.3	3512	1424	3520	1420	1422
8	5.1	4117	1214	4127	1212	1213	8	8.3	3503	1427	3511	1424	1426
9	5.1	4165	1200	4175	1198	1199	9	8.3	3485	1435	3493	1431	1433
10	5.1	4219	1185	4229	1182	1184	10	8.3	3525	1418	3533	1415	1417

Mean: 5.1 **Mean:** 1198 **Mean:** 8.3 **Mean:** 1428

	Test Round 1		
NIJ Reference Velocity:	1205		ft/s
Handload (NIJ Reference ± 10 ft/s):	1198		ft/s
Range (NIJ Reference ± 30 ft/s):	1175	1235	ft/s
	Min	**Max**	
Velocity Summary:	1184	1213	ft/s

	Test Round 2		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1428		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s
	Min	**Max**	
Velocity Summary:	1417	1436	ft/s

NOTE:
Velocity input for time factor requires microsecond (10^{-6}) format.
Conduct handload verification test for each new compliance test series.
Use 3-shot series (Sec. 5.11.1) to check handload viability within each compliance series when there are significant breaks during testing.

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Daily Wet Conditioning Spray Calibration

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

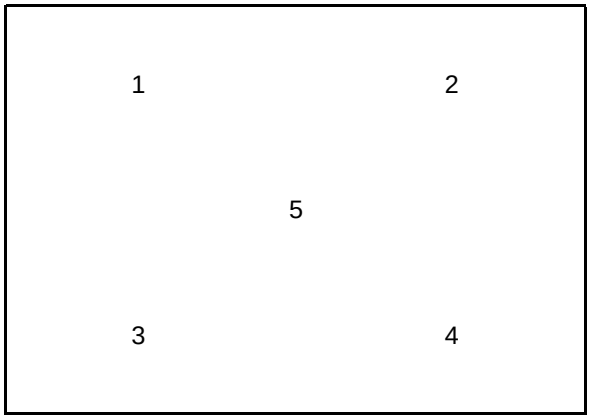
Report Number: 9643-32
Report Date: 06/14/05

Calibration Date:	06/14/05					

	Interval (min)						
Gauge Location	**15**	**15**	**15**	**15**	**15**	**15**	
1	1.1						inches
2	0.6						inches
3	0.7						inches
4	0.9						inches
5	1.5						inches
Average:	1.0						inches
Requirement:	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*inches*
Pass:	**Y**	**N**	**N**	**N**	**N**	**N**	

Required Flow Rate: 4.0 +/- 0.8 in/hr 1.0 +/- 0.2 in/0.25 hr
Conditioning Surface Dimensions: 30.0 x 30.0 inches square

Gauge Locations



Top View

Spray Conditioning

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Test Date: 06/14/05
Range Conditions:
Temperature: 68 F
RH: 69 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:52 hrs
Clay Temperature: 102.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	18	17	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 1 Back

Test Date: 06/14/05
Range Conditions:
Temperature: 68 F
RH: 69 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:14 hrs
Clay Temperature: 100.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	18	17	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

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Sample/Panel: Sample 2 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Test Date: 06/14/05
Range Conditions:
Temperature: 70 F
RH: 73 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:31 hrs
Clay Temperature: 101.3 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	18	18	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 2 Back

Test Date: 06/14/05
Range Conditions:
Temperature: 70 F
RH: 73 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:50 hrs
Clay Temperature: 98.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	18	17	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:03 hrs
Clay Temperature: 99.6 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	16	17	17	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Test Date: 06/14/05
Range Conditions:
Temperature: 70 F
RH: 71 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:47 hrs
Clay Temperature: 103.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	19	18	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 3 Back

Test Date: 06/14/05
Range Conditions:
Temperature: 70 F
RH: 71 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:16 hrs
Clay Temperature: 101.5 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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September 2000

Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Test Date: 06/14/05
Range Conditions:
Temperature: 72 F
RH: 72 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:34 hrs
Clay Temperature: 98.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	19	18	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 4 Back

Test Date: 06/14/05
Range Conditions:
Temperature: 72 F
RH: 72 %

Report Number: 9643-32
Report Date: 06/14/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:37 hrs
Clay Temperature: 97.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	18	17	18	17	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:45 hrs
Clay Temperature: 97.5 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	17	17	17	17	16	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 06/14/05

Report Number: 9643-32
Report Date: 06/14/05
NIJ Armor Type: 2

Panel Serial No: 219714
Plate Serial No: NA

Panel Serial No: 219714
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4209	1188	4219	1185	1187		Y	N		24	1	4162	1201	4172	1198	1200		Y	N		22	Y	Y
2	4221	1185	4231	1182	1183		Y	N			2	4132	1210	4142	1207	1209		Y	N		27	Y	Y
3	4134	1209	4154	1204	1207		Y	N		25	3	4135	1209	4145	1206	1208		Y	N			Y	Y
4	4106	1218	4116	1215	1216	Y	Y	N			4	4187	1194	4197	1191	1193	Y	Y	N			Y	Y
5	4116	1215	4126	1212	1213	Y	Y	N			5	4106	1218	4116	1215	1216	Y	Y	N			Y	Y
6	4160	1202	4170	1199	1200		Y	N			6	4144	1207	4154	1204	1205		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:02 hrs
Firing Sequence End: 9:09 hrs
Duration: 7 min

Firing Sequence Start: 9:19 hrs
Firing Sequence End: 9:26 hrs
Duration: 7 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 69.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1183	1207	ft/s
Front Panel 30º:	1213	1216	ft/s
Back Panel 0º:	1200	1209	ft/s
Back Panel 30º:	1193	1216	ft/s

Handload Verification Velocity: 1198 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
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Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 06/14/05

Report Number: 9643-32
Report Date: 06/14/05
NIJ Armor Type: 2

Panel Serial No: 219718
Plate Serial No: NA

Panel Serial No: 219718
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4177	1197	4187	1194	1196		Y	N		25	1	4124	1212	4134	1209	1211		Y	N		23	Y	Y
2	4164	1201	4174	1198	1199		Y	N			2	4116	1215	4126	1212	1213		Y	N		25	Y	Y
3	4133	1210	4143	1207	1208		Y	N		27	3	4138	1208	4148	1205	1207		Y	N			Y	Y
4	4122	1213	4132	1210	1212	Y	Y	N			4	4127	1212	4137	1209	1210	Y	Y	N			Y	Y
5	4124	1212	4134	1209	1211	Y	Y	N			5	4105	1218	4115	1215	1217	Y	Y	N			Y	Y
6	4158	1203	4168	1200	1201		Y	N			6	4176	1197	4186	1194	1196		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:37 hrs
Firing Sequence End: 9:44 hrs
Duration: 7 min

Firing Sequence Start: 9:53 hrs
Firing Sequence End: 9:59 hrs
Duration: 6 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 69.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1196	1208	ft/s
Front Panel 30º:	1211	1212	ft/s
Back Panel 0º:	1196	1213	ft/s
Back Panel 30º:	1210	1217	ft/s

Handload Verification Velocity: 1198 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3 **Ammunition:** .357 Mag 158/JSP **Report Number:** 9643-32
Manufacturer: FIRST CHOICE ARMOR & EQ **Conditioning:** Wet **Report Date:** 06/14/05
Model: MFF22C **Test Date:** 06/14/05 **NIJ Armor Type:** 2

Panel Serial No: 219717 **Panel Serial No:** 219717
Plate Serial No: NA **Plate Serial No:** NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3559	1405	3567	1402	1403		Y	N		33	1	3533	1415	3541	1412	1414		Y	N		33	Y	Y
2	3509	1425	3517	1422	1423		Y	N			2	3519	1421	3527	1418	1419		Y	N		32	Y	Y
3	3484	1435	3492	1432	1433		Y	N		31	3	3540	1412	3548	1409	1411		Y	N			Y	Y
4	3538	1413	3546	1410	1412	Y	Y	N			4	3485	1435	3493	1431	1433	Y	Y	N			Y	Y
5	3523	1419	3531	1416	1418	Y	Y	N			5	3508	1425	3516	1422	1424	Y	Y	N			Y	Y
6	3557	1406	3565	1403	1404		Y	N			6	3529	1417	3537	1414	1415		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 11:02 hrs
Firing Sequence End: 11:11 hrs
Duration: 9 min

Firing Sequence Start: 11:22 hrs
Firing Sequence End: 11:30 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 70.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1403	1433	ft/s
Front Panel 30º:	1412	1418	ft/s
Back Panel 0º:	1411	1419	ft/s
Back Panel 30º:	1424	1433	ft/s

Handload Verification Velocity: 1428 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: FIRST CHOICE ARMOR & EQ
Model: MFF22C

Ammunition: .357 Mag 158/JSP
Conditioning: Wet
Test Date: 06/14/05

Report Number: 9643-32
Report Date: 06/14/05
NIJ Armor Type: 2

Panel Serial No: 219713
Plate Serial No: NA

Panel Serial No: 219713
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3539	1413	3547	1410	1411		Y	N		34	1	3521	1420	3529	1417	1418		Y	N		34	Y	Y
2	3541	1412	3549	1409	1410		Y	N			2	3504	1427	3512	1424	1425		Y	N		32	Y	Y
3	3488	1433	3496	1430	1432		Y	N		31	3	3514	1423	3522	1420	1421		Y	N			Y	Y
4	3532	1416	3540	1412	1414	Y	Y	N			4	3509	1425	3518	1421	1423	Y	Y	N			Y	Y
5	3503	1427	3511	1424	1426	Y	Y	N			5	3490	1433	3498	1429	1431	Y	Y	N			Y	Y
6	3495	1431	3503	1427	1429		Y	N			6	3540	1412	3548	1409	1411		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 11:39 hrs
Firing Sequence End: 11:47 hrs
Duration: 8 min

Firing Sequence Start: 12:41 hrs
Firing Sequence End: 12:49 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 70.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1410	1432	ft/s
Front Panel 30º:	1414	1426	ft/s
Back Panel 0º:	1411	1425	ft/s
Back Panel 30º:	1423	1431	ft/s

Handload Verification Velocity: 1428 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Ballistic Limit Firing Data

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MFF22C
Test Date: 06/14/05

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: 9643-32
Report Date: 06/14/05
NIJ Armor Type: 2

Enter NIJ Armor Types III and IV Sample Number(s) in Remarks Column as Applicable

BL PANEL 1										BL PANEL 2									
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)	Shot No.	Time 1 (µs)	Velocity (m/s)	Time 1 (µs)	Velocity (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1	2869	1743	2877	1738	1740	X			N	1	2880	1736	2888	1731	1734	X			Y
2	3124	1601	3132	1596	1598		X		N	2	3091	1618	3099	1613	1616		X		N
3	2967	1685	2975	1681	1683		X		Y	3	3012	1660	3020	1656	1658		X		Y
4	2883	1734	2891	1730	1732	X			Y	4	2945	1698	2953	1693	1695	X			Y
5	2963	1687	2971	1683	1685		X		Y	5	3086	1620	3094	1616	1618		X		N
6	2876	1739	2886	1733	1736	X			Y	6	2950	1695	2958	1690	1693		X		Y
7	3037	1646	3045	1642	1644		X		Y	7	2903	1722	2911	1718	1720	X			Y
8	2943	1699	2951	1694	1697	X			Y	8	3051	1639	3059	1635	1637		X		N
9	2983	1676	2991	1672	1674		X		Y	9	3036	1647	3044	1643	1645		X		Y
10	2952	1694	2960	1689	1691	X			Y	10	2858	1749	2867	1744	1747	X			Y
11	3031	1650	3039	1645	1647		X		Y	11	2946	1697	2954	1693	1695		X		Y
12	2919	1713	2927	1708	1711	X			Y	12	2881	1736	2889	1731	1733		X		Y
13		0		0						13	2846	1757	2854	1752	1754	X			Y
14		0		0						14		0		0					
15		0		0						15		0		0					
				Count:	12	6	6		10					Count:	13	5	8		10

INSTRUCTIONS:

1. Fill in shaded cells - all others are automatic calcualtions
2. Enter an "x" to designate complete or partial penetrations
3. Enter a "y" to designate use of the shot for calculation purposes - calculation group must include highest partial and lowest complete.
4. Velocity input for time factor requires microsecond (10-6) format.

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Provided Lower Velocity: ft/s
Calculated Lower Velocity: 1655 ft/s
Calculated Upper Velocity: 1805 ft/s
Calculated First Shot Velocity: 1730 ft/s

Velocity Results:	Min	Max
Panel 1:	1598	1740
Panel 2:	1616	1754

Remarks: Enter Sample No. e.g., 5…10
a - Too close to edge
b - Too close to prior impact
c - Impact on seam

CLAY BLOCK TEMPERATURE:

Pre-Test: 102.8 F
Post Test: 98.2 F

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Ammunition:** 9mm 124/FMJ **Report Number:** 9643-32
Model: MFF22C **Conditioning:** Dry **Report Date:** 06/14/05
Test Date: 06/14/05 **NIJ Armor Type:** 2

BL PANEL 1				BL PANEL 2			
Shot No.	Velocity (ft/s)	Penetration		Shot No.	Velocity (ft/s)	Penetration	
		Complete	Partial			Complete	Partial
				1	1734	X	
3	1683		X	3	1658		X
4	1732	X		4	1695	X	
5	1685		X				
6	1736	X		6	1693		X
7	1644		X	7	1720	X	
8	1697	X					
9	1674		X	9	1645		X
10	1691	X		10	1747	X	
11	1647		X	11	1695		X
12	1711	X		12	1733		X
				13	1754	X	
Count:	10	5	5	**Count:**	10	5	5

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:	1690	ft/s
Velocity Range:	92	ft/s
Standard Deviation (σ):	31	ft/s
Panel 2 BL:	1707	ft/s
Velocity Range:	109	ft/s
Standard Deviation (σ):	37	ft/s
Difference Panel 1 to 2:	17	ft/s
Panel 1 & 2 Average BL:	1699	ft/s

PAGE WILL AUTOMATICALLY CALCULATE

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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September 2000

Summary of Results

Armor Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Armor Style:** MFF22C **Report Number:** 9643-32
Armor Model No: MFF22C **NIJ Armor Type:** 2 **Report Date:** 06/14/05

PENETRATION AND BACKFACE SIGNATURE												
Test Samples (b)					Ballistic Threat					Results		
Item Number	Serial Number	Panel	Weight (lbs)	No. of Plies	Caliber	Obliquity (degrees)	Req'd Shots	Velocity (ft/s) Max.	Velocity (ft/s) Min.	Penetration (Y/N)	BFS (mm) BFS 1	BFS (mm) BFS 2
Sample 1	219714	Front	2.39	22	9mm	0	4	1207	1183	N	24	25
						30	2	1216	1213			
	219714	Back	2.48	22	9mm	0	4	1209	1200	N	22	27
						30	2	1216	1193			
Sample 2	219718	Front	2.37	22	9mm	0	4	1208	1196	N	25	27
						30	2	1212	1211			
	219718	Back	2.48	22	9mm	0	4	1213	1196	N	23	25
						30	2	1217	1210			
Sample 3	219717	Front	2.38	22	.357 Mag	0	4	1433	1403	N	33	31
						30	2	1418	1412			
	219717	Back	2.49	22	.357 Mag	0	4	1419	1411	N	33	32
						30	2	1433	1424			
Sample 4	219713	Front	2.38	22	.357 Mag	0	4	1432	1410	N	34	31
						30	2	1426	1414			
	219713	Back	2.48	22	.357 Mag	0	4	1425	1411	N	34	32
						30	2	1431	1423			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Aramid

P-BFS Result

Penetration: Pass
BFS: Pass

Model Compliance

Passed: YES

NIJ Baseline Ballistic Limit

Panel 1:
Type: 10 shots
Ballistic Limit: 1690 ft/s
Std Dev. (σ): 31 ft/s

Panel 2:
Type: 10 shots
Ballistic Limit: 1707 ft/s
Std Dev. (σ): 37 ft/s

CERTIFICATION:

Test Data Certification: FOY/HEIL
Name

Signature

Witnessed by: Name NA
Name Representing

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 02/01/05

Report Number: 9643-05
Report Date: 02/02/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/HEIL
Name

Witnessed by: NA
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 01/31/05
*Ballistic Material: Aramid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: ICC526C
Style: ICC526C
Male/Female: MALE

NIJ Armor Type: 3A *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	2X	2X	2X	2X	2X	2X	2X	2X	2X	2X										
Panel Serial Number:	177128	177128	178870	178870	177129	177129	177127	177127	178871	178871										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004										
Gross Weight (lb.):	4.11	4.35	4.15	4.43	4.05	4.38	4.12	4.42	4.12	4.37										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.44 Mag	.44 Mag	.44 Mag	.44 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	240/SJHP	240/SJHP	240/SJHP	240/SJHP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):																				
Bullet Manufacturer:	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMIMNGTO	EMIMNGTO	EMIMNGTO	EMIMNGTO	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON
Bullet Lot Number:	23558	23558	23558	23558	23592	23592	23592	23592	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	10.0	10	10.0	10.0	8.0	8	8.0	8.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	31	31
Description of Stitching:	2" DIAMOND QUILT (1-5), TACKED AT THE SHOULDERS AND BOTTOM CORNERS (1-31)	2" DIAMOND QUILT (1-5), TACKED AT THE SHOULDERS AND BOTTOM CORNERS (1-31)
Individual Layer Description:	LAYERS 1-5 FLEX WOVEN ARAMID FIBER (5 TWO PLY LAMINATES, 29x10), LAYERS 6-31 FLEX ARAMID FILM	LAYERS 1-5 FLEX WOVEN ARAMID FIBER (5 TWO PLY LAMINATES, 29x10), LAYERS 6-31 FLEX ARAMID FILM

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL

NATIONAL H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

HANDLOAD VERIFICATION WORKSHEET

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:
Range Length: 1[illegible]40 ft.
Velocity 1: [illegible]00 ft.
Velocity 2: [illegible]0 ft.

Ammunition: 9mm 124/FMJ
Test Date: 02/01/05

Ammunition: .44 Mag 240/SJHP
Test Date: 02/02/05

Test Round 1							Test Round 2						
Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)
1	6.4	3490	1433	3499	1429	1431	1	25.5	3456	1447	3463	[illegible]14	1445
2	6.4	3499	1429	3508	1425	1427	2	25.5	3456	1447	3464	[illegible]43	1445
3	6.4	3453	1448	3462	1444	1446	3	25.5	3455	1447	3462	1444	1446
4	6.4	3467	1442	3476	1438	1440	4	25.5	3465	1443	3472	1440	1442
5	6.4	3487	1434	3496	1430	1432	5	25.5	3477	1438	3484	1435	1437
6	6.4	3494	1431	3503	1427	1429	6	25.5	3452	1448	3460	1445	1447
7	6.4	3470	1441	3479	1437	1439	7	25.5	3483	1436	3489	1433	1434
8	6.4	3468	1442	3477	1438	1440	8	25.5	3516	1422	3524	1419	1420
9	6.4	3500	1429	3509	1425	1427	9	25.5	3517	1422	3524	1419	1420
10	6.4	3477	1438	3486	1434	1436	10	25.5	3508	1425	3516	1422	1424

Mean: 6.4 **Mean:** 1435

Mean: 25.5 **Mean:** 1436

	Test Round 1		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1435		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1427	1446	ft/s

	Test Round 2		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1436		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1420	1447	ft/s

NOTE:
Velocity input for time factor requires microsecond (10^{-6}) format.
Conduct handload verification test for each new compliance test series.
Use 3-shot series (Sec. 5.11.1) to check handload viability within each compliance series when there are significant breaks during testing.

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Daily Wet Conditioning Spray Calibration

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, INC.
Model: ICC526C

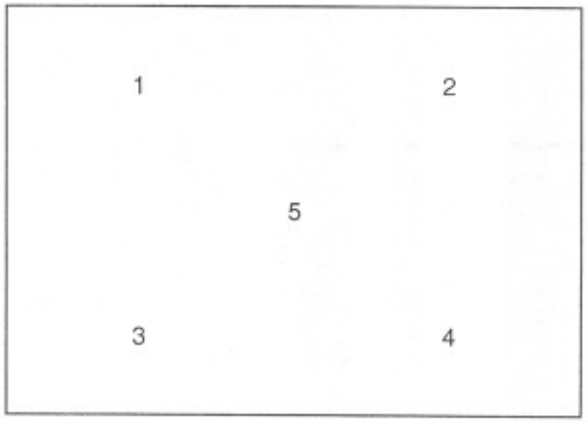
Report Number: 9643-05
Report Date: 02/02/05

Calibration Date:	02/01/05	02/02/05				

	Interval (min)						
Gauge Location	15	15	15	15	15	15	
1	1.5	1.5					inches
2	0.8	0.8					inches
3	0.8	0.7					inches
4	0.6	0.6					inches
5	1.5	1.5					inches
Average:	1.0	1.0					inches
Requirement:	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*inches*
Pass:	Y	Y	N	N	N	N	

Required Flow Rate: 4.0 +/- 0.8 in/hr 1.0 +/- 0.2 in/0.25 hr
Conditioning Surface Dimensions: 30.0 x 30.0 inches square

Gauge Locations



Top View

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/01/05
Range Conditions:
Temperature: 72 F
RH: 21 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 3:19 hrs
Clay Temperature: 88.7 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	18	19	16	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 1 Back

Test Date: 02/01/05
Range Conditions:
Temperature: 72 F
RH: 21 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 3:43 hrs
Clay Temperature: 86.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	18	18	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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5

Sample/Panel: Sample 2 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:33 hrs
Clay Temperature: 91.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 2 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:57 hrs
Clay Temperature: 89.1 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	20	19	20	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:12 hrs
Clay Temperature: 89.7 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	17	18	18	17	18

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 9:25 hrs
Clay Temperature: 90.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	18	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 3 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:32 hrs
Clay Temperature: 88.7 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 71 F
RH: 19 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:53 hrs
Clay Temperature: 89.3 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	19	18	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 4 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 71 F
RH: 19 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:11 hrs
Clay Temperature: 88.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	19	18	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:30 hrs
Clay Temperature: 88.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	17	18	16	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/01/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177128
Plate Serial No: NA

Panel Serial No: 177128
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3465	1443	3474	1439	1441		Y	N		24	1	3530	1416	3539	1413	1415		Y	N		21	Y	Y
2	3455	1447	3464	1443	1445		Y	N		25	2	3432	1457	3441	1453	1455		Y	N		22	Y	Y
3	3448	1450	3457	1446	1448		Y	N		24	3	3468	1442	3477	1438	1440		Y	N		22	Y	Y
4	3471	1441	3479	1437	1439	Y	Y	N		18	4	3475	1439	3484	1435	1437	Y	Y	N		18	Y	Y
5	3438	1454	3447	1451	1452	Y	Y	N		17	5	3442	1453	3451	1449	1451	Y	Y	N		16	Y	Y
6	3495	1431	3503	1427	1429		Y	N		21	6	3435	1456	3444	1452	1454		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 3:26 hrs
Firing Sequence End: 3:32 hrs
Duration: 6 min

Firing Sequence Start: 3:47 hrs
Firing Sequence End: 3:53 hrs
Duration: 6 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1429	1448	ft/s
Front Panel 30°:	1439	1452	ft/s
Back Panel 0°:	1415	1455	ft/s
Back Panel 30°:	1437	1451	ft/s

Handload Verification Velocity: 1435 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 178870
Plate Serial No: NA

Panel Serial No: 178870
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3502	1428	3510	1425	1426		Y	N		20	1	3497	1430	3506	1426	1428		Y	N		19	Y	Y
2	3465	1443	3473	1440	1441		Y	N		24	2	3480	1437	3489	1433	1435		Y	N		23	Y	Y
3	3491	1432	3499	1429	1431		Y	N		22	3	3464	1443	3452	1448	1446		Y	N		24	Y	Y
4	3463	1444	3472	1440	1442	Y	Y	N		20	4	3490	1433	3499	1429	1431	Y	Y	N		16	Y	Y
5	3517	1422	3525	1418	1420	Y	Y	N		16	5	3488	1433	3497	1430	1432	Y	Y	N		21	Y	Y
6	3494	1431	3503	1427	1429		Y	N		19	6	3439	1454	3448	1450	1452		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 8:43 hrs
Firing Sequence End: 8:50 hrs
Duration: 7 min

Firing Sequence Start: 9:01 hrs
Firing Sequence End: 9:08 hrs
Duration: 7 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1426	1441	ft/s
Front Panel 30°:	1420	1442	ft/s
Back Panel 0°:	1428	1452	ft/s
Back Panel 30°:	1431	1432	ft/s

Handload Verification Velocity: 1435 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3
Manufacturer: FIRST CHOICE ARMOR & EQ
Model: ICC526C

Ammunition: .44 Mag 240/SJHP
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177129
Plate Serial No: NA

Panel Serial No: 177129
Plate Serial No: NA

FRONT PANEL										
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)
1	3516	1422	3524	1419	1420		Y	N		30
2	3547	1410	3556	1406	1408		Y	N		31
3	3452	1448	3459	1446	1447		Y	N		30
4	3465	1443	3471	1441	1442	Y	Y	N		26
5	3490	1433	3497	1430	1431	Y	Y	N		27
6	3469	1441	3477	1438	1440		Y	N		28
7		0		0						
8		0		0						

BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3474	1439	3481	1436	1438		Y	N		32	Y	Y
2	3511	1424	3516	1422	1423		Y	N		33	Y	Y
3	3482	1436	3489	1433	1435		Y	N		30	Y	Y
4	3492	1432	3500	1429	1430	Y	Y	N		23	Y	Y
5	3525	1418	3532	1416	1417	Y	Y	N		26	Y	Y
6	3460	1445	3467	1442	1444		Y	N		25	Y	Y
7		0		0								
8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:28 hrs
Firing Sequence End: 9:37 hrs
Duration: 9 min

Firing Sequence Start: 10:36 hrs
Firing Sequence End: 10:46 hrs
Duration: 10 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 16.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1408	1447	ft/s
Front Panel 30°:	1431	1442	ft/s
Back Panel 0°:	1423	1444	ft/s
Back Panel 30°:	1417	1430	ft/s

Handload Verification Velocity:	1436		ft/s
NIJ Reference Velocity:	1430		ft/s
Velocity Range:	1400	1460	ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: .44 Mag 240/SJHP
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177127
Plate Serial No: NA

Panel Serial No: 177127
Plate Serial No: NA

FRONT PANEL											
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)
1	3528	1417	3536	1414	1416		Y	N		32
2	3468	1442	3474	1439	1441		Y	N		36
3	3478	1438	3485	1435	1436		Y	N		34
4	3517	1422	3525	1418	1420	Y	Y	N		27
5	3505	1427	3512	1424	1425	Y	Y	N		27
6	3516	1422	3524	1419	1420		Y	N		28
7		0		0						
8		0		0						

BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3490	1433	3496	1430	1432		Y	N		34	Y	Y
2	3485	1435	3493	1431	1433		Y	N		36	Y	Y
3	3493	1431	3500	1429	1430		Y	N		33	Y	Y
4	3506	1426	3515	1422	1424	Y	Y	N		24	Y	Y
5	3502	1428	3509	1425	1426	Y	Y	N		28	Y	Y
6	3524	1419	3531	1416	1417		Y	N		28	Y	Y
7		0		0								
8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 10:56 hrs
Firing Sequence End: 11:05 hrs
Duration: 9 min

Firing Sequence Start: 11:17 hrs
Firing Sequence End: 11:26 hrs
Duration: 9 min

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 16.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1416	1441	ft/s
Front Panel 30°:	1420	1425	ft/s
Back Panel 0°:	1417	1433	ft/s
Back Panel 30°:	1424	1426	ft/s

Handload Verification Velocity: 1436 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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Ballistic Limit Firing Data

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, INC.
Model: ICC526C
Test Date: 02/02/05

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Enter NIJ Armor Types III and IV Sample Number(s) in Remarks Column as Applicable

BL PANEL 1

Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1	2859	1749	2867	1744	1746		X	DEF. 31mm	Y
2	2610	1916	2618	1910	1913		X	DEF. 39mm	Y
3	2429	2058	2437	2052	2055	X			Y
4	2622	1907	2630	1901	1904		X	DEF. 28mm	Y
5	2524	1981	2533	1974	1977	X			Y
6	2537	1971	2545	1965	1968		X	DEF. 33mm	Y
7	2462	2031	2469	2025	2028	X			Y
8	2475	2020	2483	2014	2017	X			Y
9	2509	1993	2517	1986	1990	X			Y
10	2558	1955	2566	1949	1952		X	DEF. 37mm	Y
11	2474	2021	2481	2015	2018	X			Y
12	2524	1981	2532	1975	1978		X	DEF. 35mm	Y
13		0		0					
14		0		0					
15		0		0					
				Count:	12	6	6		12

BL PANEL 2

Shot No.	Time 1 (µs)	Velocity (m/s)	Time 1 (µs)	Velocity (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1	2506	1995	2515	1988	1992		X	DEF. 38mm	Y
2	2441	2048	2449	2042	2045	X			Y
3	2476	2019	2483	2014	2017	X			Y
4	2552	1959	2559	1954	1957		X	DEF. 36mm	Y
5	2546	1964	2554	1958	1961	X			Y
6	2575	1942	2584	1935	1938	X			Y
7	2694	1856	2703	1850	1853		X	DEF. 33mm	Y
8	2641	1893	2649	1888	1890		X	DEF. 30mm	Y
9	2555	1957	2564	1950	1954		X	DEF. 34mm	Y
10	2488	2010	2497	2002	2006	X			Y
11	2536	1972	2544	1965	1969	X			Y
12	2592	1929	2601	1922	1926		X	DEF. 34mm	Y
13		0		0					
14		0		0					
15		0		0					
				Count:	12	6	6		12

INSTRUCTIONS:

1. Fill in shaded cells - all others are automatic calcualtions
2. Enter an "x" to designate complete or partial penetrations
3. Enter a "y" to designate use of the shot for calculation purposes - calculation group must include highest partial and lowest complete.
4. Velocity input for time factor requires microsecond (10-6) format.

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 17.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Provided Lower Velocity: ____ ft/s
Calculated Lower Velocity: 1655 ft/s
Calculated Upper Velocity: 1805 ft/s
Calculated First Shot Velocity: 1730 ft/s

Velocity Results:	Min	Max
Panel 1:	1746	2055
Panel 2:	1853	2045

Remarks: Enter Sample No. e.g., 5...10
a - Too close to edge
b - Too close to prior impact
c - Impact on seam

CLAY BLOCK TEMPERATURE:

Pre-Test: 92 F
Post Test: 90.2 F

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R&D TEST REPORT

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NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, **Ammunition:** 9mm 124/FMJ
Model: ICC526C **Conditioning:** Dry
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

BL PANEL 1				BL PANEL 2			
Shot	Velocity	Penetration		Shot	Velocity	Penetration	
No.	(ft/s)	Complete	Partial	No.	(ft/s)	Complete	Partial
1	1746		X	1	1992		X
2	1913		X	2	2045	X	
3	2055	X		3	2017	X	
4	1904		X	4	1957		X
5	1977	X		5	1961	X	
6	1968		X	6	1938	X	
7	2028	X		7	1853		X
8	2017	X		8	1890		X
9	1990	X		9	1954		X
10	1952		X	10	2006	X	
11	2018	X		11	1969	X	
12	1978		X	12	1926		X
Count:	12	6	6	Count:	12	6	6

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:	1962	ft/s
Velocity Range:	309	ft/s
Standard Deviation (σ):	81	ft/s
Panel 2 BL:	1959	ft/s
Velocity Range:	192	ft/s
Standard Deviation (σ):	54	ft/s
Difference Panel 1 to 2:	3	ft/s
Panel 1 & 2 Average BL:	1960	ft/s

PAGE WILL AUTOMATICALLY CALCULATE

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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Summary of Results

Armor Manufacturer: FIRST CHOICE ARMOR & EQUIPME **Armor Style:** ICC526C
Armor Model No: ICC526C **NIJ Armor Type:** 3A

Report Number: 9643-05
Report Date: 02/02/05

PENETRATION AND BACKFACE SIGNATURE												
Test Samples (b)					Ballistic Threat					Results		
Item Number	Serial Number	Panel	Weight (lbs)	No. of Plies	Caliber	Obliquity (degrees)	Req'd Shots	Velocity (ft/s) Max.	Velocity (ft/s) Min.	Penetration (Y/N)	BFS (mm) BFS 1	BFS (mm) BFS 2
Sample 1	177128	Front	4.11	31	9mm	0	4	1448	1429	N	24	25
						30	2	1452	1439			
	177128	Back	4.35	31	9mm	0	4	1455	1415	N	21	22
						30	2	1451	1437			
Sample 2	178870	Front	4.15	31	9mm	0	4	1441	1426	N	20	24
						30	2	1442	1420			
	178870	Back	4.43	31	9mm	0	4	1452	1428	N	19	24
						30	2	1432	1431			
Sample 3	177129	Front	4.05	31	.44 Mag	0	4	1447	1408	N	30	31
						30	2	1442	1431			
	177129	Back	4.38	31	.44 Mag	0	4	1444	1423	N	32	33
						30	2	1430	1417			
Sample 4	177127	Front	4.12	31	.44 Mag	0	4	1441	1416	N	32	36
						30	2	1425	1420			
	177127	Back	4.42	31	.44 Mag	0	4	1433	1417	N	34	36
						30	2	1426	1424			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Aramid

P-BFS Result

Penetration: Pass
BFS: Pass

Model Compliance

Passed: YES

NIJ Baseline Ballistic Limit

Panel 1:
Type: 12 shots
Ballistic Limit: 1962 ft/s
Std Dev. (σ): 81 ft/s

Panel 2:
Type: 12 shots
Ballistic Limit: 1959 ft/s
Std Dev. (σ): 54 ft/s

CERTIFICATION:

Test Data Certification: FOY/HEIL
Name

Signature

Witnessed by: NA — Name
NA — Representing

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 02/01/05

Report Number: 9643-05
Report Date: 02/02/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/HEIL
Name

Witnessed by: NA
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 01/31/05
*Ballistic Material: Aramid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: ICC526C
Style: ICC526C
Male/Female: MALE

NIJ Armor Type: 3A *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	2X	2X	2X	2X	2X	2X	2X	2X	2X	2X										
Panel Serial Number:	177128	177128	178870	178870	177129	177129	177127	177127	178871	178871										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004	7151, 1004										
Gross Weight (lb.):	4.11	4.35	4.15	4.43	4.05	4.38	4.12	4.42	4.12	4.37										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.44 Mag	.44 Mag	.44 Mag	.44 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	240/SJHP	240/SJHP	240/SJHP	240/SJHP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):	[redacted]																			
Bullet Manufacturer:	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMIMNGTO	EMIMNGTO	EMIMNGTO	EMIMNGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO	EMINGTO
Bullet Lot Number:	23558	23558	23558	23558	23592	23592	23592	23592	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	10.0	10	10.0	10.0	8.0	8	8.0	8.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	31	31
Description of Stitching:	2" DIAMOND QUILT (1-5), TACKED AT THE SHOULDERS AND BOTTOM CORNERS (1-31)	2" DIAMOND QUILT (1-5), TACKED AT THE SHOULDERS AND BOTTOM CORNERS (1-31)
Individual Layer Description:	LAYERS 1-5 FLEX WOVEN ARAMID FIBER (5 TWO PLY LAMINATES, 29x10), LAYERS 6-31 FLEX ARAMID FILM	LAYERS 1-5 FLEX WOVEN ARAMID FIBER (5 TWO PLY LAMINATES, 29x10), LAYERS 6-31 FLEX ARAMID FILM

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/01/05
Range Conditions:
Temperature: 72 F
RH: 21 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 3:19 hrs
Clay Temperature: 88.7 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	18	19	16	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 1 Back

Test Date: 02/01/05
Range Conditions:
Temperature: 72 F
RH: 21 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 3:43 hrs
Clay Temperature: 86.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	18	18	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

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R&D TEST REPORT

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5

Sample/Panel: Sample 2 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:33 hrs
Clay Temperature: 91.4 deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
	19	18	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 2 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:57 hrs
Clay Temperature: 89.1 deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
	19	19	20	19	20	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:12 hrs
Clay Temperature: 89.7 deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
	18	17	18	18	17	18

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Stand 0101.04
Sep ber 2000

Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 9:25 hrs
Clay Temperature: 90.8 deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
	20	19	18	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 3 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 72 F
RH: 16 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:32 hrs
Clay Temperature: 88.7 deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
	19	19	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

Depth of Indent:	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.

Requirement: *19 ± 2 mm*
Pass: N

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Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Test Date: 02/02/05
Range Conditions:
Temperature: 71 F
RH: 19 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:53 hrs
Clay Temperature: 89.3 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	19	18	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 4 Back

Test Date: 02/02/05
Range Conditions:
Temperature: 71 F
RH: 19 %

Report Number: 9643-05
Report Date: 02/02/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:11 hrs
Clay Temperature: 88.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	19	18	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:30 hrs
Clay Temperature: 88.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	17	18	16	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
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NIJ Standard 0101.04
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Daily Wet Conditioning Spray Calibration

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, INC.
Model: ICC526C

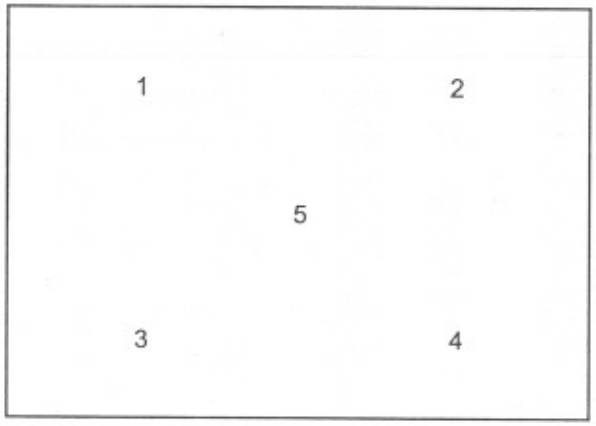
Report Number: 9643-05
Report Date: 02/02/05

Calibration Date:	02/01/05	02/02/05				

	Interval (min)						
Gauge Location	15	15	15	15	15	15	
1	1.5	1.5					inches
2	0.8	0.8					inches
3	0.8	0.7					inches
4	0.6	0.6					inches
5	1.5	1.5					inches
Average:	1.0	1.0					inches
Requirement:	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*inches*
Pass:	Y	Y	N	N	N	N	

Required Flow Rate: 4.0 +/- 0.8 in/hr 1.0 +/- 0.2 in/0.25 hr
Conditioning Surface Dimensions: 30.0 x 30.0 inches square

Gauge Locations



Top View

Spray Conditioning

NATIONAL H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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HANDLOAD VERIFICATION WORKSHEET

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Ammunition: 9mm 124/FMJ
Test Date: 02/01/05

Ammunition: .44 Mag 240/SJHP
Test Date: 02/02/05

Test Round 1							Test Round 2						
Shot No.	Charge (grain)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Shot No.	Charge (grain)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)
1	6.4	3490	1433	3499	1429	1431	1	25.5	3456	1447	3463	1444	1445
2	6.4	3499	1429	3508	1425	1427	2	25.5	3456	1447	3464	1443	1445
3	6.4	3453	1448	3462	1444	1446	3	25.5	3455	1447	3462	1444	1446
4	6.4	3467	1442	3476	1438	1440	4	25.5	3465	1443	3472	1440	1442
5	6.4	3487	1434	3496	1430	1432	5	25.5	3477	1438	3484	1435	1437
6	6.4	3494	1431	3503	1427	1429	6	25.5	3452	1448	3460	1445	1447
7	6.4	3470	1441	3479	1437	1439	7	25.5	3483	1436	3489	1433	1434
8	6.4	3468	1442	3477	1438	1440	8	25.5	3516	1422	3524	1419	1420
9	6.4	3500	1429	3509	1425	1427	9	25.5	3517	1422	3524	1419	1420
10	6.4	3477	1438	3486	1434	1436	10	25.5	3508	1425	3516	1422	1424

Mean: 6.4 **Mean:** 1435 **Mean:** 25.5 **Mean:** 1436

	Test Round 1		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1435		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1427	1446	ft/s

	Test Round 2		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1436		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1420	1447	ft/s

NOTE:
Velocity input for time factor requires microsecond (10^{-6}) format.
Conduct handload verification test for each new compliance test series.
Use 3-shot series (Sec. 5.11.1) to check handload viability within each compliance series when there are significant breaks during testing.

H.P. WHITE LABORATORY, INC.
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NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 178870
Plate Serial No: NA

Panel Serial No: 178870
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3502	1428	3510	1425	1426		Y	N		20	1	3497	1430	3506	1426	1428		Y	N		19	Y	Y
2	3465	1443	3473	1440	1441		Y	N		24	2	3480	1437	3489	1433	1435		Y	N		23	Y	Y
3	3491	1432	3499	1429	1431		Y	N		22	3	3464	1443	3452	1448	1446		Y	N		24	Y	Y
4	3463	1444	3472	1440	1442	Y	Y	N		20	4	3490	1433	3499	1429	1431	Y	Y	N		16	Y	Y
5	3517	1422	3525	1418	1420	Y	Y	N		18	5	3458	1433	3497	1430	1432	Y	Y	N		21	Y	Y
6	3494	1431	3503	1427	1429		Y	N		19	6	3439	1454	3448	1450	1452		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 8:43 hrs
Firing Sequence End: 8:50 hrs
Duration: 7 min

Firing Sequence Start: 9:01 hrs
Firing Sequence End: 9:08 hrs
Duration: 7 min

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1426	1441	ft/s
Front Panel 30°:	1420	1442	ft/s
Back Panel 0°:	1428	1452	ft/s
Back Panel 30°:	1431	1432	ft/s

Handload Verification Velocity: 1435 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/01/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177128
Plate Serial No: NA

Panel Serial No: 177128
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3465	1443	3474	1439	1441		Y	N		24	1	3530	1416	3539	1413	1415		Y	N		21	Y	Y
2	3455	1447	3464	1443	1445		Y	N		25	2	3432	1457	3441	1453	1455		Y	N		22	Y	Y
3	3448	1450	3457	1446	1448		Y	N		24	3	3468	1442	3477	1438	1440		Y	N		22	Y	Y
4	3471	1441	3479	1437	1439	Y	Y	N		18	4	3475	1439	3484	1435	1437	Y	Y	N		18	Y	Y
5	3438	1454	3447	1451	1452	Y	Y	N		17	5	3442	1453	3451	1449	1451	Y	Y	N		16	Y	Y
6	3495	1431	3503	1427	1429		Y	N		21	6	3435	1456	3444	1452	1454		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 3:26 hrs
Firing Sequence End: 3:32 hrs
Duration: 6 min

Firing Sequence Start: 3:47 hrs
Firing Sequence End: 3:53 hrs
Duration: 6 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1429	1448	ft/s
Front Panel 30°:	1439	1452	ft/s
Back Panel 0°:	1415	1455	ft/s
Back Panel 30°:	1437	1451	ft/s

Handload Verification Velocity:	1435		ft/s
NIJ Reference Velocity:	1430		ft/s
Velocity Range:	1400	1460	ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/01/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177128
Plate Serial No: NA

Panel Serial No: 177128
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3465	1443	3474	1439	1441		Y	N		24	1	3530	1416	3539	1413	1415		Y	N		21	Y	Y
2	3455	1447	3464	1443	1445		Y	N		25	2	3432	1457	3441	1453	1455		Y	N		22	Y	Y
3	3448	1450	3457	1446	1448		Y	N		24	3	3468	1442	3477	1438	1440		Y	N		22	Y	Y
4	3471	1441	3479	1437	1439	Y	Y	N		18	4	3475	1439	3484	1435	1437	Y	Y	N		18	Y	Y
5	3438	1454	3447	1451	1452	Y	Y	N		17	5	3442	1453	3451	1449	1451	Y	Y	N		16	Y	Y
6	3495	1431	3503	1427	1429		Y	N		21	6	3435	1456	3444	1452	1454		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 3:26 hrs
Firing Sequence End: 3:32 hrs
Duration: 6 min

Firing Sequence Start: 3:47 hrs
Firing Sequence End: 3:53 hrs
Duration: 6 min

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1429	1448	ft/s
Front Panel 30°:	1439	1452	ft/s
Back Panel 0°:	1415	1455	ft/s
Back Panel 30°:	1437	1451	ft/s

Handload Verification Velocity: 1435 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
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NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ICC526C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 178870
Plate Serial No: NA

Panel Serial No: 178870
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3502	1428	3510	1425	1426		Y	N		20	1	3497	1430	3506	1426	1428		Y	N		19	Y	Y
2	3465	1443	3473	1440	1441		Y	N		24	2	3480	1437	3489	1433	1435		Y	N		23	Y	Y
3	3491	1432	3499	1429	1431		Y	N		22	3	3464	1443	3452	1448	1446		Y	N		24	Y	Y
4	3463	1444	3472	1440	1442	Y	Y	N		20	4	3490	1433	3499	1429	1431	Y	Y	N		16	Y	Y
5	3517	1422	3525	1418	1420	Y	Y	N		16	5	3488	1433	3497	1430	1432	Y	Y	N		21	Y	Y
6	3494	1431	3503	1427	1429		Y	N		19	6	3439	1454	3448	1450	1452		Y	N		21	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 8:43 hrs
Firing Sequence End: 8:50 hrs
Duration: 7 min

Firing Sequence Start: 9:01 hrs
Firing Sequence End: 9:08 hrs
Duration: 7 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 21.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1426	1441	ft/s
Front Panel 30°:	1420	1442	ft/s
Back Panel 0°:	1428	1452	ft/s
Back Panel 30°:	1431	1432	ft/s

Handload Verification Velocity:	1435		ft/s
NIJ Reference Velocity:	1430		ft/s
Velocity Range:	1400	1460	ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
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Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: FIRST CHOICE ARMOR & EQ
Model: ICC526C

Ammunition: .44 Mag 240/SJHP
Conditioning: Wet
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Panel Serial No: 177127
Plate Serial No: NA

Panel Serial No: 177127
Plate Serial No: NA

FRONT PANEL										
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)
1	3528	1417	3536	1414	1416		Y	N		32
2	3468	1442	3474	1439	1441		Y	N		36
3	3478	1438	3485	1435	1436		Y	N		34
4	3517	1422	3525	1418	1420	Y	Y	N		27
5	3505	1427	3512	1424	1425	Y	Y	N		27
6	3516	1422	3524	1419	1420		Y	N		28
7		0		0						
8		0		0						

BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3490	1433	3496	1430	1432		Y	N		32	Y	Y
2	3485	1435	3493	1431	1433		Y	N		36	Y	Y
3	3493	1431	3500	1429	1430		Y	N		[illegible]	Y	Y
4	3506	1426	3515	1422	1424	Y	Y	N		24	Y	Y
5	3502	1428	3509	1425	1426	Y	Y	N		28	Y	Y
6	3524	1419	3531	1418	1417		Y	N		28	Y	Y
7		0		0								
8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 10:56 hrs
Firing Sequence End: 11:05 hrs
Duration: 9 min

Firing Sequence Start: 11:17 hrs
Firing Sequence End: 11:26 hrs
Duration: 9 min

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 16.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1416	1441	ft/s
Front Panel 30°:	1420	1425	ft/s
Back Panel 0°:	1417	1433	ft/s
Back Panel 30°:	1424	1426	ft/s

Handload Verification Velocity:	1436	ft/s
NIJ Reference Velocity:	1430	ft/s
Velocity Range:	1400 1460	ft/s

NOTE:

a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3 **Ammunition:** .44 Mag 240/SJHP **Report Number:** 9643-05
Manufacturer: FIRST CHOICE ARMOR **Conditioning:** Wet **Report Date:** 02/02/05
Model: ICC526C **Test Date:** 02/02/05 **NIJ Armor Type:** 3A

Panel Serial No: 177129 **Panel Serial No:** 177129
Plate Serial No: NA **Plate Serial No:** NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30° (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3516	1422	3524	1419	1420		Y	N		30	1	3474	1439	3481	1436	1438		Y	N		32	Y	Y
2	3547	1410	3556	1406	1408		Y	N		31	2	3511	1424	3516	1422	1423		Y	N		33	Y	Y
3	3452	1448	3459	1446	1447		Y	N		30	3	3482	1436	3489	1433	1435		Y	N		30	Y	Y
4	3465	1443	3471	1441	1442	Y	Y	N		26	4	3492	1432	3500	1429	1430	Y	Y	N		23	Y	Y
5	3499	1433	3497	1430	1431	Y	Y	N		27	5	3525	1418	3532	1416	1417	Y	Y	N		26	Y	Y
6	3469	1441	3477	1438	1440		Y	N		28	6	3460	1445	3467	1442	1444		Y	N		25	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:28 hrs
Firing Sequence End: 9:37 hrs
Duration: 9 min

Firing Sequence Start: 10:36 hrs
Firing Sequence End: 10:46 hrs
Duration: 10 min

TEST CONDITIONS:
Ambient Temp: 72.0 F
Rel. Humidity: 16.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1408	1447	ft/s
Front Panel 30°:	1431	1442	ft/s
Back Panel 0°:	1423	1444	ft/s
Back Panel 30°:	1417	1430	ft/s

Handload Verification Velocity:		36	ft/s
NIJ Reference Velocity:		30	ft/s
Velocity Range:	140	1460	ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, I **Ammunition:** 9mm 124/FMJ
Model: ICC526C **Conditioning:** Dry
Test Date: 02/02/05

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

BL PANEL 1				BL PANEL 2			
Shot	Velocity	Penetration		Shot	Velocity	Penetration	
No.	(ft/s)	Complete	Partial	No.	(ft/s)	Complete	Partial
1	1746		X	1	1992		X
2	1913		X	2	2045	X	
3	2055	X		3	2017	X	
4	1904		X	4	1957		X
5	1977	X		5	1961	X	
6	1968		X	6	1938	X	
7	2028	X		7	1853		X
8	2017	X		8	1890		X
9	1990	X		9	1954		X
10	1952		X	10	2006	X	
11	2018	X		11	1969	X	
12	1978		X	12	1926		X
Count:	12	6	6	Count:	12	6	6

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:	1962	ft/s
Velocity Range:	309	ft/s
Standard Deviation (σ):	81	ft/s
Panel 2 BL:	1959	ft/s
Velocity Range:	192	ft/s
Standard Deviation (σ):	54	ft/s
Difference Panel 1 to 2:	3	ft/s
Panel 1 & 2 Average BL:	1960	ft/s

PAGE WILL AUTOMATICALLY CALCULATE

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Ballistic Limit Firing Data

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT, INC.
Model: ICC526C
Test Date: 02/02/05

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: 9643-05
Report Date: 02/02/05
NIJ Armor Type: 3A

Enter NIJ Armor Types III and IV Sample Number(s) in Remarks Column as Applicable

BL PANEL 1										BL PANEL 2									
Shot	Time 1	Vel. 1	Time 2	Vel. 2	Vel. Avg.	Penetration			Used	Shot	Time 1	Velocity	Time 1	Velocity	Vel. Avg.	Penetration			Used
No.	(µs)	(ft/s)	(µs)	(ft/s)	(ft/s)	C	P	Remarks	(Y/N)	No.	(µs)	(m/s)	(µs)	(ft/s)	(ft/s)	C	P	Remarks	(Y/N)
1	2859	1749	2867	1744	1746		X	DEF. 31mm	Y	1	2506	1995	2515	1988	1992		X	DEF. 38mm	Y
2	2610	1916	2618	1910	1913		X	DEF. 39mm	Y	2	2441	2048	2449	2042	2045	X			Y
3	2429	2058	2437	2052	2055	X			Y	3	2476	2019	2483	2014	2017	X			Y
4	2622	1907	2630	1901	1904		X	DEF. 28mm	Y	4	2552	1959	2559	1954	1957		X	DEF. 36mm	Y
5	2524	1981	2533	1974	1977	X			Y	5	2546	1964	2554	1958	1961	X			Y
6	2537	1971	2545	1965	1968		X	DEF. 33mm	Y	6	2575	1942	2584	1935	1938	X			Y
7	2462	2031	2469	2025	2028	X			Y	7	2694	1856	2703	1850	1853		X	DEF. 33mm	Y
8	2475	2020	2483	2014	2017	X			Y	8	2641	1893	2649	1888	1890		X	DEF. 30mm	Y
9	2509	1993	2517	1986	1990	X			Y	9	2555	1957	2564	1950	1954		X	DEF. 34mm	Y
10	2558	1955	2566	1949	1952		X	DEF. 37mm	Y	10	2488	2010	2497	2002	2006	X			Y
11	2474	2021	2481	2015	2018	X			Y	11	2536	1972	2544	1965	1969	X			Y
12	2524	1981	2532	1975	1978		X	DEF. 35mm	Y	12	2592	1929	2601	1922	1926		X	DEF. 34mm	Y
13		0		0						13		0		0					
14		0		0						14		0		0					
15		0		0						15		0		0					
				Count:	12	6	6		12					Count:	12	6	6		12

INSTRUCTIONS:

1. Fill in shaded cells - all others are automatic calcualtions
2. Enter an "x" to designate complete or partial penetrations
3. Enter a "y" to designate use of the shot for calculation purposes - calculation group must include highest partial and lowest complete.
4. Velocity input for time factor requires microsecond (10-6) format.

TEST CONDITIONS:

Ambient Temp: 72.0 F
Rel. Humidity: 17.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Provided Lower Velocity: ____ ft/s
Calculated Lower Velocity: 1655 ft/s
Calculated Upper Velocity: 1805 ft/s
Calculated First Shot Velocity: 1730 ft/s

Velocity Results:	Min	Max
Panel 1:	1746	2055
Panel 2:	1853	2045

Remarks: Enter Sample No. e.g., 5...10
a - Too close to edge
b - Too close to prior impact
c - Impact on seam

CLAY BLOCK TEMPERATURE:

Pre-Test: 92 F
Post Test: 90.2 F

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Summary of Results

Armor Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Armor Style:** ICC526C
Armor Model No: ICC526C **NIJ Armor Type:** 3A

Report Number: 9643-05
Report Date: 02/02/05

PENETRATION AND BACKFACE SIGNATURE

Test Samples (b)					Ballistic Threat					Results		
Item Number	Serial Number	Panel	Weight (lbs)	No. of Plies	Caliber	Obliquity (degrees)	Req'd Shots	Velocity (ft/s) Max.	Velocity (ft/s) Min.	Penetration (Y/N)	BFS (mm) BFS 1	BFS (mm) BFS 2
Sample 1	177128	Front	4.11	31	9mm	0	4	1448	1429	N	24	25
						30	2	1452	1439			
	177128	Back	4.35	31	9mm	0	4	1455	1415	N	21	22
						30	2	1451	1437			
Sample 2	178870	Front	4.15	31	9mm	0	4	1441	1426	N	20	24
						30	2	1442	1420			
	178870	Back	4.43	31	9mm	0	4	1452	1428	N	19	24
						30	2	1432	1431			
Sample 3	177129	Front	4.05	31	.44 Mag	0	4	1447	1408	N	30	31
						30	2	1442	1431			
	177129	Back	4.38	31	.44 Mag	0	4	1444	1423	N	32	33
						30	2	1430	1417			
Sample 4	177127	Front	4.12	31	.44 Mag	0	4	1441	1416	N	32	36
						30	2	1425	1420			
	177127	Back	4.42	31	.44 Mag	0	4	1433	1417	N	34	36
						30	2	1426	1424			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Aramid

P-BFS Result

Penetration: Pass
BFS: Pass

Model Compliance

Passed: YES

NIJ Baseline Ballistic Limit

Panel 1:
Type: 12 shots
Ballistic Limit: 1962 ft/s
Std Dev. (σ): 81 ft/s

Panel 2:
Type: 12 shots
Ballistic Limit: 1959 ft/s
Std Dev. (σ): 54 ft/s

CERTIFICATION:

Test Data Certification: FOY/HEIL
Name

Signature

Witnessed by: NA — NA
Name — Representing

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 06/10/05
Report Number: 9643-31
Report Date: 06/13/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/HEIL
Name

Witnessed by: NA
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 06/09/05
*Ballistic Material: Hybrid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: ATGF243C
Style: ATGF243C
Male/Female: MALE

NIJ Armor Type: 2 *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED										
Panel Serial Number:	219757	219757	219754	219754	219752	219752	219753	219753	219756	219756										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	004, 43723	004, 43723	004, 43723	004, 437236	004, 43723	004, 43723	004, 43723	004, 43723	004, 43723	004, 437236										
Gross Weight (lb.):	2.07	2.26	2.08	2.27	2.08	2.27	2.08	2.27	2.07	2.26										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.357 Mag	.357 Mag	.357 Mag	.357 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	158/JSP	158/JSP	158/JSP	158/JSP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1205	1205	1205	1205	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):																				
Bullet Manufacturer:	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON	EMINGTON
Bullet Lot Number:	23558	23558	23558	23558	22847	22847	22847	22847	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	4.0	4	4.0	4.0	10.0	10	10.0	10.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	28	28
Description of Stitching:	1.5" DIAMOND QUILT (1-24), TACKED AT THE SHOULDERS, SIDES AND BOTTOM CORNERS (1-28)	1.5" DIAMOND QUILT (1-24), TACKED AT THE SHOULDERS, SIDES AND BOTTOM CORNERS (1-28)
Individual Layer Description:	LAYERS 1-24 FLEX WOVEN ARTEC FIBER (34x34), LAYERS 25-27 FLEX ARAMID FILM, LAYERS 28 WHITE BACKING MATERIAL	LAYERS 1-24 FLEX WOVEN ARTEC FIBER (34x34), LAYERS 25-27 FLEX ARAMID FILM, LAYERS 28 WHITE BACKING MATERIAL

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL

NATIONAL H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

HANDLOAD VERIFICATION WORKSHEET

Report Number: 9643-31
Report Date: 06/13/05
NIJ Armor Type: 2

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Ammunition: 9mm 124/FMJ
Test Date: 06/10/05

Ammunition: .357 Mag 158/JSP
Test Date: 06/10/05

Test Round 1							Test Round 2						
Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)
1	5.1	4207	1188	4217	1186	1187	1	8.3	3469	1441	3476	1438	1440
2	5.1	4168	1200	4178	1197	1198	2	8.3	3504	1427	3511	1424	1426
3	5.1	4115	1215	4125	1212	1214	3	8.3	3488	1433	3495	1431	1432
4	5.1	4136	1209	4146	1206	1207	4	8.3	3497	1430	3504	1427	1428
5	5.1	4152	1204	4162	1201	1203	5	8.3	3477	1438	3484	1435	1437
6	5.1	4140	1208	4150	1205	1206	6	8.3	3502	1428	3509	1425	1426
7	5.1	4159	1202	4169	1199	1201	7	8.3	3466	1443	3473	1440	1441
8	5.1	4171	1199	4181	1196	1197	8	8.3	3491	1432	3498	1429	1431
9	5.1	4151	1205	4161	1202	1203	9	8.3	3500	1429	3507	1426	1427
10	5.1	4131	1210	4141	1207	1209	10	8.3	3489	1433	3496	1430	1432

Mean: 5.1 **Mean:** 1203 **Mean:** 8.3 **Mean:** 1432

	Test Round 1		
NIJ Reference Velocity:	1205		ft/s
Handload (NIJ Reference ± 10 ft/s):	1203		ft/s
Range (NIJ Reference ± 30 ft/s):	1175	1235	ft/s

	Min	Max	
Velocity Summary:	1187	1214	ft/s

	Test Round 2		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1432		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1426	1441	ft/s

NOTE:
Velocity input for time factor requires microsecond (10^{-6}) format.
Conduct handload verification test for each new compliance test series.
Use 3-shot series (Sec. 5.11.1) to check handload viability within each compliance series when there are significant breaks during testing.

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Daily Wet Conditioning Spray Calibration

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

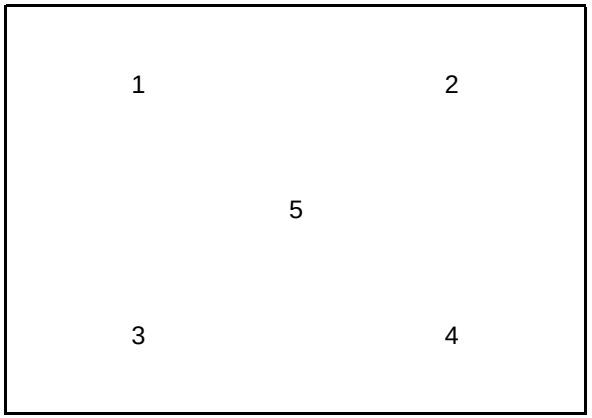
Report Number: 9643-31
Report Date: 06/13/05

Calibration Date:	06/10/05					

	Interval (min)						
Gauge Location	**15**	**15**	**15**	**15**	**15**	**15**	
1	1.1						inches
2	0.6						inches
3	0.7						inches
4	0.9						inches
5	1.5						inches
Average:	1.0						inches
Requirement:	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*inches*
Pass:	**Y**	**N**	**N**	**N**	**N**	**N**	

Required Flow Rate: 4.0 +/- 0.8 in/hr 1.0 +/- 0.2 in/0.25 hr
Conditioning Surface Dimensions: 30.0 x 30.0 inches square

Gauge Locations



Top View

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Test Date: 06/10/05
Range Conditions:
Temperature: 68 F
RH: 71 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:24 hrs
Clay Temperature: 101.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	20	19	18	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 1 Back

Test Date: 06/10/05
Range Conditions:
Temperature: 68 F
RH: 71 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:43 hrs
Clay Temperature: 98.5 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	20	20	19	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

5

Sample/Panel: Sample 2 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Test Date: 06/10/05
Range Conditions:
Temperature: 70 F
RH: 71 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:00 hrs
Clay Temperature: 99.2 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	20	18	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 2 Back

Test Date: 06/10/05
Range Conditions:
Temperature: 70 F
RH: 71 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:28 hrs
Clay Temperature: 97.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	19	18	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:43 hrs
Clay Temperature: 96.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	17	18	17	16	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Test Date: 06/10/05
Range Conditions:
Temperature: 70 F
RH: 73 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:02 hrs
Clay Temperature: 100.9 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	19	17	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 3 Back

Test Date: 06/10/05
Range Conditions:
Temperature: 70 F
RH: 73 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:40 hrs
Clay Temperature: 97.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	18	18	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Test Date: 06/10/05
Range Conditions:
Temperature: 72 F
RH: 76 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:59 hrs
Clay Temperature: 98.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	18	17	17	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 4 Back

Test Date: 06/10/05
Range Conditions:
Temperature: 72 F
RH: 76 %

Report Number: 9643-31
Report Date: 06/13/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 1:20 hrs
Clay Temperature: 96.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	18	18	17	17	16	17

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: 1:40 hrs
Clay Temperature: 96.1 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	16	17	18	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 06/10/05

Report Number: 9643-31
Report Date: 06/13/05
NIJ Armor Type: 2

Panel Serial No: 219757
Plate Serial No: NA

Panel Serial No: 219757
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4198	1191	4209	1188	1189		Y	N		26	1	4083	1225	4093	1222	1223		Y	N		25	Y	Y
2	4196	1192	4206	1189	1190		Y	N			2	4178	1197	4188	1194	1195		Y	N			Y	Y
3	4150	1205	4160	1202	1203		Y	N		25	3	4121	1213	4131	1210	1212		Y	N		28	Y	Y
4	4152	1204	4162	1201	1203	Y	Y	N			4	4129	1211	4139	1208	1209	Y	Y	N			Y	Y
5	4122	1213	4132	1210	1212	Y	Y	N			5	4107	1217	4117	1214	1216	Y	Y	N			Y	Y
6	4135	1209	4145	1206	1208		Y	N			6	4131	1210	4141	1207	1209		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:30 hrs
Firing Sequence End: 9:38 hrs
Duration: 8 min

Firing Sequence Start: 9:49 hrs
Firing Sequence End: 9:55 hrs
Duration: 6 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1189	1208	ft/s
Front Panel 30º:	1203	1212	ft/s
Back Panel 0º:	1195	1223	ft/s
Back Panel 30º:	1209	1216	ft/s

Handload Verification Velocity: 1203 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 06/10/05

Report Number: 9643-31
Report Date: 06/13/05
NIJ Armor Type: 2

Panel Serial No: 219754
Plate Serial No: NA

Panel Serial No: 219754
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4130	1211	4140	1208	1209		Y	N		26	1	4066	1230	4076	1227	1228		Y	N		25	Y	Y
2	4122	1213	4132	1210	1212		Y	N		26	2	4051	1234	4061	1231	1233		Y	N		26	Y	Y
3	4204	1189	4214	1187	1188		Y	N			3	4139	1208	4149	1205	1207		Y	N			Y	Y
4	4096	1221	4106	1218	1219	Y	Y	N			4	4094	1221	4104	1218	1220	Y	Y	N			Y	Y
5	4189	1194	4199	1191	1192	Y	Y	N			5	4096	1221	4106	1218	1219	Y	Y	N			Y	Y
6	4114	1215	4124	1212	1214		Y	N			6	4161	1202	4171	1199	1200		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 10:05 hrs
Firing Sequence End: 10:12 hrs
Duration: 7 min

Firing Sequence Start: 10:33 hrs
Firing Sequence End: 10:39 hrs
Duration: 6 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 71.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1188	1214	ft/s
Front Panel 30º:	1192	1219	ft/s
Back Panel 0º:	1200	1233	ft/s
Back Panel 30º:	1219	1220	ft/s

Handload Verification Velocity: 1203 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3 **Ammunition:** .357 Mag 158/JSP **Report Number:** 9643-31
Manufacturer: FIRST CHOICE ARMOR & EQ **Conditioning:** Wet **Report Date:** 06/13/05
Model: ATGF243C **Test Date:** 06/10/05 **NIJ Armor Type:** 2

Panel Serial No: 219752 **Panel Serial No:** 219752
Plate Serial No: NA **Plate Serial No:** NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3553	1407	3560	1404	1406		Y	N		34	1	3498	1429	3505	1427	1428		Y	N		33	Y	Y
2	3534	1415	3541	1412	1413		Y	N		34	2	3521	1420	3528	1417	1419		Y	N			Y	Y
3	3542	1412	3549	1409	1410		Y	N			3	3473	1440	3480	1437	1438		Y	N		34	Y	Y
4	3529	1417	3536	1414	1415	Y	Y	N			4	3501	1428	3508	1425	1427	Y	Y	N			Y	Y
5	3497	1430	3504	1427	1428	Y	Y	N			5	3515	1422	3522	1420	1421	Y	Y	N			Y	Y
6	3495	1431	3502	1428	1429		Y	N			6	3491	1432	3498	1429	1431		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 11:13 hrs
Firing Sequence End: 11:21 hrs
Duration: 8 min

Firing Sequence Start: 12:46 hrs
Firing Sequence End: 12:54 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 70.0 F
Rel. Humidity: 73.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1406	1429	ft/s
Front Panel 30º:	1415	1428	ft/s
Back Panel 0º:	1419	1438	ft/s
Back Panel 30º:	1421	1427	ft/s

Handload Verification Velocity: 1432 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: FIRST CHOICE ARMOR & EQ
Model: ATGF243C

Ammunition: .357 Mag 158/JSP
Conditioning: Wet
Test Date: 06/10/05

Report Number: 9643-31
Report Date: 06/13/05
NIJ Armor Type: 2

Panel Serial No: 219753
Plate Serial No: NA

Panel Serial No: 219753
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3496	1430	3503	1427	1429		Y	N		35	1	3487	1434	3494	1431	1432		Y	N		31	Y	Y
2	3468	1442	3475	1439	1440		Y	N		35	2	3464	1443	3471	1441	1442		Y	N		36	Y	Y
3	3483	1436	3490	1433	1434		Y	N			3	3493	1431	3500	1429	1430		Y	N			Y	Y
4	3484	1435	3491	1432	1434	Y	Y	N			4	3480	1437	3487	1434	1435	Y	Y	N			Y	Y
5	3458	1446	3465	1443	1444	Y	Y	N			5	3496	1430	3503	1427	1429	Y	Y	N			Y	Y
6	3488	1433	3495	1431	1432		Y	N			6	3484	1435	3491	1432	1434		Y	N			Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 1:06 hrs
Firing Sequence End: 1:14 hrs
Duration: 8 min

Firing Sequence Start: 1:26 hrs
Firing Sequence End: 1:34 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 70.0 F
Rel. Humidity: 73.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1429	1440	ft/s
Front Panel 30º:	1434	1444	ft/s
Back Panel 0º:	1430	1442	ft/s
Back Panel 30º:	1429	1435	ft/s

Handload Verification Velocity: 1432 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Ballistic Limit Firing Data

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: ATGF243C
Test Date: 06/13/05

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: 9643-31
Report Date: 06/13/05
NIJ Armor Type: 2

Enter NIJ Armor Types III and IV Sample Number(s) in Remarks Column as Applicable

BL PANEL 1										BL PANEL 2									
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)	Shot No.	Time 1 (µs)	Velocity (m/s)	Time 1 (µs)	Velocity (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1	2905	1721	2913	1716	1719		X		Y	1	2826	1769	2833	1765	1767	X			N
2	2812	1778	2819	1774	1776		X		Y	2	2856	1751	2864	1746	1748	X			N
3	2654	1884	2661	1879	1881	X			N	3	2902	1723	2909	1719	1721		X		Y
4	2773	1803	2781	1798	1801	X			N	4	2891	1730	2899	1725	1727		X		Y
5	2851	1754	2859	1749	1751	X			Y	5	2866	1745	2874	1740	1742	X			Y
6	2882	1735	2890	1730	1733		X		Y	6	2907	1720	2915	1715	1718	X			Y
7	2803	1784	2810	1779	1782	X			Y	7	2929	1707	2937	1702	1705	X			Y
8	2833	1765	2841	1760	1762	X			Y	8	2946	1697	2954	1693	1695		X		Y
9	2934	1704	2942	1700	1702		X		Y	9	2938	1702	2946	1697	1700		X		Y
10	2852	1753	2860	1748	1751	X			Y	10	2899	1725	2907	1720	1722	X			Y
11	2946	1697	2954	1693	1695	X			Y	11	2952	1694	2960	1689	1691	X			Y
12	2945	1698	2953	1693	1695		X		Y	12	2999	1667	3007	1663	1665		X		Y
13		0		0						13		0		0					
14		0		0						14		0		0					
15		0		0						15		0		0					
				Count:	12	7	5		10					**Count:**	12	7	5		10

INSTRUCTIONS:

1. Fill in shaded cells - all others are automatic calcualtions
2. Enter an "x" to designate complete or partial penetrations
3. Enter a "y" to designate use of the shot for calculation purposes - calculation group must include highest partial and lowest complete.
4. Velocity input for time factor requires microsecond (10-6) format.

TEST CONDITIONS:

Ambient Temp: 73.0 F
Rel. Humidity: 77.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Provided Lower Velocity: ft/s
Calculated Lower Velocity: 1655 ft/s
Calculated Upper Velocity: 1805 ft/s
Calculated First Shot Velocity: 1730 ft/s

Velocity Results:	**Min**	**Max**
Panel 1:	1695	1881
Panel 2:	1665	1767

Remarks: Enter Sample No. e.g., 5…10
a - Too close to edge
b - Too close to prior impact
c - Impact on seam

CLAY BLOCK TEMPERATURE:

Pre-Test: 101.4 F
Post Test: 97.7 F

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Ammunition:** 9mm 124/FMJ **Report Number:** 9643-31
Model: ATGF243C **Conditioning:** Dry **Report Date:** 06/13/05
Test Date: 06/13/05 **NIJ Armor Type:** 2

BL PANEL 1				BL PANEL 2			
Shot No.	Velocity (ft/s)	Penetration		Shot No.	Velocity (ft/s)	Penetration	
		Complete	Partial			Complete	Partial
1	1719		X				
2	1776		X				
				3	1721		X
				4	1727		X
5	1751	X		5	1742	X	
6	1733		X	6	1718	X	
7	1782	X		7	1705	X	
8	1762	X		8	1695		X
9	1702		X	9	1700		X
10	1751	X		10	1722	X	
11	1695	X		11	1691	X	
12	1695		X	12	1665		X
Count:	10	5	5	**Count:**	10	5	5

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:	1737	ft/s
Velocity Range:	87	ft/s
Standard Deviation (σ):	33	ft/s
Panel 2 BL:	1709	ft/s
Velocity Range:	77	ft/s
Standard Deviation (σ):	22	ft/s
Difference Panel 1 to 2:	28	ft/s
Panel 1 & 2 Average BL:	1723	ft/s

PAGE WILL AUTOMATICALLY CALCULATE

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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Summary of Results

Armor Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Armor Style:** ATGF243C **Report Number:** 9643-31
Armor Model No: ATGF243C **NIJ Armor Type:** 2 **Report Date:** 06/13/05

PENETRATION AND BACKFACE SIGNATURE												
Test Samples (b)					Ballistic Threat					Results		
Item Number	Serial Number	Panel	Weight (lbs)	No. of Plies	Caliber	Obliquity (degrees)	Req'd Shots	Velocity (ft/s) Max.	Velocity (ft/s) Min.	Penetration (Y/N)	BFS (mm) BFS 1	BFS (mm) BFS 2
Sample 1	219757	Front	2.07	28	9mm	0	4	1208	1189	N	26	25
						30	2	1212	1203			
	219757	Back	2.26	28	9mm	0	4	1223	1195	N	25	28
						30	2	1216	1209			
Sample 2	219754	Front	2.08	28	9mm	0	4	1214	1188	N	26	26
						30	2	1219	1192			
	219754	Back	2.27	28	9mm	0	4	1233	1200	N	25	26
						30	2	1220	1219			
Sample 3	219752	Front	2.08	28	.357 Mag	0	4	1429	1406	N	34	34
						30	2	1428	1415			
	219752	Back	2.27	28	.357 Mag	0	4	1438	1419	N	33	34
						30	2	1427	1421			
Sample 4	219753	Front	2.08	28	.357 Mag	0	4	1440	1429	N	35	35
						30	2	1444	1434			
	219753	Back	2.27	28	.357 Mag	0	4	1442	1430	N	31	36
						30	2	1435	1429			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Hybrid

P-BFS Result

Penetration: Pass
BFS: Pass

Model Compliance

Passed: YES

NIJ Baseline Ballistic Limit

Panel 1:
Type: 10 shots
Ballistic Limit: 1737 ft/s
Std Dev. (σ): 33 ft/s

Panel 2:
Type: 10 shots
Ballistic Limit: 1709 ft/s
Std Dev. (σ): 22 ft/s

CERTIFICATION:

Test Data Certification: FOY/HEIL
Name

Signature

Witnessed by: NA — Name
NA — Representing

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

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COMPLIANCE TESTING INFORMATION

FACILITY DESCRIPTION:

Test Laboratory: H.P. White Laboratory, I
Test Start Date: 04/28/05
Report Number: 9643-23
Report Date: 04/28/05

TESTING CERTIFICATION:

Laboratory Representative: FOY/SHAFFER
Name

Witnessed by: NA
Name

NA
Representing

ARMOR DESCRIPTION:

Manufacturer: FIRST CHOICE ARMOR & EQUIPME
Date Rec'd: 04/27/05
*Ballistic Material: Aramid

*Ballistic Material Choices

Aramid	*PBO*	*Ceramic*	*Metal*
Polyethylene	*Hybrid*	*Composite*	*Other*

Model: MF19C
Style: MF19C
Male/Female: MALE

NIJ Armor Type: 2 *Enter as: 1, 2A, 2, 3A, 3, 4, or Special*
NIJ STD-0101.03 Compliant: NO

SAMPLE DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Size:	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED	NOT LISTED										
Panel Serial Number:	216647	216647	216650	216650	216649	216649	216646	216646	216648	216648										
Plate Serial Number:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Lot Number:	1356	1356	1356	1356	1356	1356	1356	1356	1356	1356										
Gross Weight (lb.):	2.26	2.46	2.26	2.47	2.26	2.46	2.26	2.48	2.26	2.47										

TEST DESCRIPTION:

	Penetration-Backface Signature (P-BFS)								Baseline Ballistic Limit											
	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10	
	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
Test Condition:	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Threat Ammunition:	9mm	9mm	9mm	9mm	.357 Mag	.357 Mag	.357 Mag	.357 Mag	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm	9mm
Bullet (grain/type):	124/FMJ	124/FMJ	124/FMJ	124/FMJ	158/JSP	158/JSP	158/JSP	158/JSP	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ	124/FMJ
NIJ Reference Velocity (ft/s):	1205	1205	1205	1205	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Provided BL Lower Velocity (ft/s):																				
Bullet Manufacturer:	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTOR	REMINGTON
Bullet Lot Number:	23558	23558	23558	23558	23592	23592	23592	23592	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558	23558
Test Barrel Manufacturer:	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI	HPWLI
Test Barrel Length (in):	10.0	10	10.0	10.0	8.0	8	8.0	8.0	10.0	10	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

ARMOR CONSTRUCTION:

	Front Panel	Rear Panel
Front Closure (Y/N):	N	NA
Removable Carrier (Y/N):	Y	Y
Number of Layers:	19	19
Description of Stitching:	3" DIAMOND QUILT (1-19)	3" DIAMOND QUILT (1-19)
Individual Layer Description:	LAYERS 1-19 FLEX WOVEN ARAMID FIBER (22x22)	LAYERS 1-19 FLEX WOVEN ARAMID FIBER (22x22)

REMARKS:

STRAPPING: 2 VERTICAL, 3 HORIZONTAL

NATIONAL H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

HANDLOAD VERIFICATION WORKSHEET

Report Number: 9643-23
Report Date: 04/28/05
NIJ Armor Type: 2

TEST CONDITIONS:
Ambient Temp: 66.0 F
Rel. Humidity: 36.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Ammunition: 9mm 124/FMJ
Test Date: 04/28/05

Ammunition: .357 Mag 158/JSP
Test Date: 04/28/05

Test Round 1							Test Round 2						
Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Shot No.	Charge (grain)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)
1	5.2	4149	1205	4158	1203	1204	1	8.2	3513	1423	3519	1421	1422
2	5.2	4161	1202	4170	1199	1200	2	8.2	3491	1432	3497	1430	1431
3	5.2	4054	1233	4063	1231	1232	3	8.2	3493	1431	3499	1429	1430
4	5.2	4045	1236	4054	1233	1235	4	8.2	3511	1424	3517	1422	1423
5	5.2	4122	1213	4131	1210	1212	5	8.2	3489	1433	3495	1431	1432
6	5.2	4173	1198	4184	1195	1197	6	8.2	3509	1425	3515	1422	1424
7	5.2	4152	1204	4161	1202	1203	7	8.2	3492	1432	3498	1429	1431
8	5.2	4159	1202	4168	1200	1201	8	8.2	3495	1431	3501	1428	1429
9	5.2	4140	1208	4149	1205	1206	9	8.2	3490	1433	3496	1430	1431
10	5.2	4178	1197	4187	1194	1195	10	8.2	3487	1434	3493	1431	1433

Mean: 5.2 **Mean:** 1208 **Mean:** 8.2 **Mean:** 1429

	Test Round 1		
NIJ Reference Velocity:	1205		ft/s
Handload (NIJ Reference ± 10 ft/s):	1208		ft/s
Range (NIJ Reference ± 30 ft/s):	1175	1235	ft/s

	Min	Max	
Velocity Summary:	1195	1235	ft/s

	Test Round 2		
NIJ Reference Velocity:	1430		ft/s
Handload (NIJ Reference ± 10 ft/s):	1429		ft/s
Range (NIJ Reference ± 30 ft/s):	1400	1460	ft/s

	Min	Max	
Velocity Summary:	1422	1433	ft/s

NOTE:
Velocity input for time factor requires microsecond (10^{-6}) format.
Conduct handload verification test for each new compliance test series.
Use 3-shot series (Sec. 5.11.1) to check handload viability within each compliance series when there are significant breaks during testing.

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Daily Wet Conditioning Spray Calibration

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

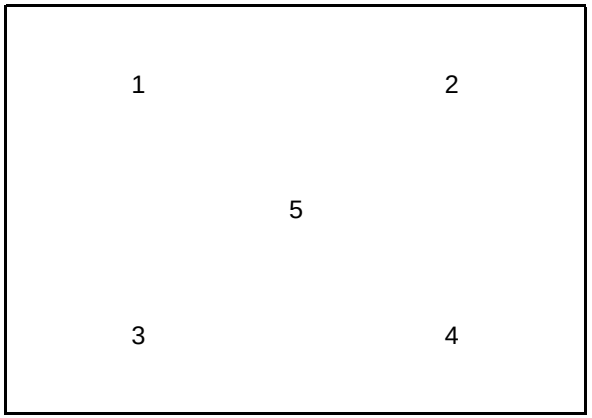
Report Number: 9643-23
Report Date: 04/28/05

Calibration Date:	04/28/05					

	Interval (min)						
Gauge Location	**15**	**15**	**15**	**15**	**15**	**15**	
1	0.7						inches
2	1.2						inches
3	0.6						inches
4	0.8						inches
5	1.5						inches
Average:	1.0						inches
Requirement:	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*inches*
Pass:	**Y**	**N**	**N**	**N**	**N**	**N**	

Required Flow Rate: 4.0 +/- 0.8 in/hr 1.0 +/- 0.2 in/0.25 hr
Conditioning Surface Dimensions: 30.0 x 30.0 inches square

Gauge Locations



Top View

Spray Conditioning

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Test Date: 04/28/05
Range Conditions:
Temperature: 66 F
RH: 35 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 8:44 hrs
Clay Temperature: 98.7 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	18	19	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 1 Back

Test Date: 04/28/05
Range Conditions:
Temperature: 66 F
RH: 35 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:15 hrs
Clay Temperature: 96.6 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	20	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

5

Sample/Panel: Sample 2 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Test Date: 04/28/05
Range Conditions:
Temperature: 68 F
RH: 35 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 9:34 hrs
Clay Temperature: 96.3 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	19	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 2 Back

Test Date: 04/28/05
Range Conditions:
Temperature: 68 F
RH: 35 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:15 hrs
Clay Temperature: 94.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	19	18	18	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B1
Time of Day: 10:30 hrs
Clay Temperature: 94.5 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	17	18	16	16	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Test Date: 04/28/05
Range Conditions:
Temperature: 68 F
RH: 33 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 10:49 hrs
Clay Temperature: 99.0 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	20	20	21	19	20

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 3 Back

Test Date: 04/28/05
Range Conditions:
Temperature: 68 F
RH: 33 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:09 hrs
Clay Temperature: 97.2 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	20	20	20	19	20

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Test Date: 04/28/05
Range Conditions:
Temperature: 70 F
RH: 32 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 11:27 hrs
Clay Temperature: 95.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	19	21	19	19	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: hrs
Clay Temperature: deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:						

Requirement: *19 ± 2 mm*
Pass: N

Sample/Panel: Sample 4 Back

Test Date: 04/28/05
Range Conditions:
Temperature: 70 F
RH: 32 %

Report Number: 9643-23
Report Date: 04/28/05

Pre-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:38 hrs
Clay Temperature: 94.4 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	19	18	18	18	17	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: R2B2
Time of Day: 12:49 hrs
Clay Temperature: 93.8 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	17	17	17	17	17	17

Requirement: *19 ± 2 mm*
Pass: Y

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 04/28/05

Report Number: 9643-23
Report Date: 04/28/05
NIJ Armor Type: 2

Panel Serial No: 216647
Plate Serial No: NA

Panel Serial No: 216647
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4061	1231	4070	1229	1230		Y	N		24	1	4148	1205	4157	1203	1204		Y	N		24	Y	Y
2	4136	1209	4145	1206	1208		Y	N		25	2	4107	1217	4116	1215	1216		Y	N		25	Y	Y
3	4135	1209	4144	1207	1208		Y	N		27	3	4142	1207	4151	1205	1206		Y	N		28	Y	Y
4	4140	1208	4149	1205	1206	Y	Y	N		20	4	4119	1214	4128	1211	1213	Y	Y	N		20	Y	Y
5	4142	1207	4151	1205	1206	Y	Y	N		21	5	4138	1208	4147	1206	1207	Y	Y	N		25	Y	Y
6	4109	1217	4118	1214	1216		Y	N		26	6	4183	1195	4192	1193	1194		Y	N		25	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:02 hrs
Firing Sequence End: 9:10 hrs
Duration: 8 min

Firing Sequence Start: 9:22 hrs
Firing Sequence End: 9:29 hrs
Duration: 7 min

TEST CONDITIONS:
Ambient Temp: 66.0 F
Rel. Humidity: 35.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1208	1230	ft/s
Front Panel 30º:	1206	1206	ft/s
Back Panel 0º:	1194	1216	ft/s
Back Panel 30º:	1207	1213	ft/s

Handload Verification Velocity: 1208 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
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Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 04/28/05

Report Number: 9643-23
Report Date: 04/28/05
NIJ Armor Type: 2

Panel Serial No: 216650
Plate Serial No: NA

Panel Serial No: 216650
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	4138	1208	4147	1206	1207		Y	N		24	1	4096	1221	4105	1218	1219		Y	N		23	Y	Y
2	4117	1214	4126	1212	1213		Y	N		27	2	4153	1204	4162	1201	1203		Y	N		26	Y	Y
3	4156	1203	4165	1200	1202		Y	N		25	3	4115	1215	4124	1212	1214		Y	N		26	Y	Y
4	4166	1200	4175	1198	1199	Y	Y	N		22	4	4140	1208	4149	1205	1206	Y	Y	N		22	Y	Y
5	4207	1188	4216	1186	1187	Y	Y	N		20	5	4103	1219	4112	1216	1217	Y	Y	N		22	Y	Y
6	4196	1192	4205	1189	1190		Y	N		22	6	4114	1215	4123	1213	1214		Y	N		24	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 9:40 hrs
Firing Sequence End: 9:46 hrs
Duration: 6 min

Firing Sequence Start: 10:18 hrs
Firing Sequence End: 10:26 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 66.0 F
Rel. Humidity: 35.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1190	1213	ft/s
Front Panel 30º:	1187	1199	ft/s
Back Panel 0º:	1203	1219	ft/s
Back Panel 30º:	1206	1217	ft/s

Handload Verification Velocity: 1208 ft/s
NIJ Reference Velocity: 1205 ft/s
Velocity Range: 1175 1235 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3 **Ammunition:** .357 Mag 158/JSP **Report Number:** 9643-23
Manufacturer: FIRST CHOICE ARMOR & EQ **Conditioning:** Wet **Report Date:** 04/28/05
Model: MF19C **Test Date:** 04/28/05 **NIJ Armor Type:** 2

Panel Serial No: 216649 **Panel Serial No:** 216649
Plate Serial No: NA **Plate Serial No:** NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3507	1426	3513	1423	1425		Y	N		35	1	3552	1408	3557	1406	1407		Y	N		30	Y	Y
2	3510	1425	3517	1422	1423		Y	N		34	2	3487	1434	3493	1431	1433		Y	N		32	Y	Y
3	3498	1429	3504	1427	1428		Y	N		32	3	3461	1445	3467	1442	1443		Y	N		34	Y	Y
4	3511	1424	3517	1422	1423	Y	Y	N		27	4	3484	1435	3490	1433	1434	Y	Y	N		28	Y	Y
5	3494	1431	3500	1429	1430	Y	Y	N		24	5	3462	1444	3468	1442	1443	Y	Y	N		27	Y	Y
6	3494	1431	3499	1429	1430		Y	N		30	6	3503	1427	3509	1425	1426		Y	N		32	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 10:56 hrs
Firing Sequence End: 11:03 hrs
Duration: 7 min

Firing Sequence Start: 11:15 hrs
Firing Sequence End: 11:23 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 33.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1423	1430	ft/s
Front Panel 30º:	1423	1430	ft/s
Back Panel 0º:	1407	1443	ft/s
Back Panel 30º:	1434	1443	ft/s

Handload Verification Velocity:	1429		ft/s
NIJ Reference Velocity:	1430		ft/s
Velocity Range:	1400	1460	ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: FIRST CHOICE ARMOR & EQ
Model: MF19C

Ammunition: .357 Mag 158/JSP
Conditioning: Wet
Test Date: 04/28/05

Report Number: 9643-23
Report Date: 04/28/05
NIJ Armor Type: 2

Panel Serial No: 216646
Plate Serial No: NA

Panel Serial No: 216646
Plate Serial No: NA

FRONT PANEL											BACK PANEL											COMPLIANCE	
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	30º (Y)	Fair (Y/N)	Penetrate (Y/N)	Note	BFS (mm)	Front Panel	Back Panel
1	3487	1434	3493	1431	1433		Y	N		33	1	3547	1410	3553	1407	1408		Y	N		34	Y	Y
2	3490	1433	3497	1430	1431		Y	N		31	2	3483	1436	3489	1433	1434		Y	N		33	Y	Y
3	3506	1426	3512	1424	1425		Y	N		32	3	3481	1436	3487	1434	1435		Y	N		29	Y	Y
4	3521	1420	3528	1417	1419	Y	Y	N		28	4	3513	1423	3519	1421	1422	Y	Y	N		27	Y	Y
5	3516	1422	3523	1419	1421	Y	Y	N		28	5	3500	1429	3507	1426	1427	Y	Y	N		26	Y	Y
6	3483	1436	3489	1433	1434		Y	N		28	6	3490	1433	3496	1430	1431		Y	N		29	Y	Y
7		0		0							7		0		0								
8		0		0							8		0		0								

Velocity input for time factor requires microsecond (10^{-6}) format.

Firing Sequence Start: 11:35 hrs
Firing Sequence End: 11:42 hrs
Duration: 7 min

Firing Sequence Start: 12:46 hrs
Firing Sequence End: 12:44 hrs
Duration: 8 min

TEST CONDITIONS:
Ambient Temp: 68.0 F
Rel. Humidity: 33.0 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0º:	1431	1434	ft/s
Front Panel 30º:	1419	1421	ft/s
Back Panel 0º:	1408	1435	ft/s
Back Panel 30º:	1422	1427	ft/s

Handload Verification Velocity: 1429 ft/s
NIJ Reference Velocity: 1430 ft/s
Velocity Range: 1400 1460 ft/s

NOTE:
a - Excessive velocity
b - Insufficient velocity
c - Too close to edge
d - Too close to prior impact
e - Excessive total impacts (test terminated)
f - Excessive area impacts (test terminated)
g - Impact on seam

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Ballistic Limit Firing Data

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT
Model: MF19C
Test Date: 04/28/05

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: 9643-23
Report Date: 04/28/05
NIJ Armor Type: 2

Enter NIJ Armor Types III and IV Sample Number(s) in Remarks Column as Applicable

BL PANEL 1										BL PANEL 2									
Shot No.	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)	Shot No.	Time 1 (µs)	Velocity (m/s)	Time 1 (µs)	Velocity (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1	2878	1737	2865	1745	1741	X			N	1	2882	1735	2888	1731	1733	X			N
2	3153	1586	3160	1582	1584		X		Y	2	3080	1623	3088	1619	1621	X			Y
3	3005	1664	3011	1661	1662		X		Y	3	3250	1538	3257	1535	1537		X		N
4	2909	1719	2916	1715	1717	X			N	4	3179	1573	3186	1569	1571		X		Y
5	2929	1707	2925	1709	1708	X			Y	5	3135	1595	3143	1591	1593		X		Y
6	2983	1676	2990	1672	1674	X			Y	6	3018	1657	3025	1653	1655	X			Y
7	3079	1624	3085	1621	1622	X			Y	7	3111	1607	3118	1604	1605		X		Y
8	3194	1565	3202	1562	1563		X		Y	8	3065	1631	3072	1628	1629		X		Y
9	3121	1602	3128	1598	1600		X		Y	9	3017	1657	3024	1653	1655		X		Y
10	3047	1641	3054	1637	1639	X			Y	10	2938	1702	2944	1698	1700	X			Y
11	3118	1604	3125	1600	1602	X			Y	11	2993	1671	3000	1667	1669	X			Y
12	3207	1559	3215	1555	1557		X		Y	12	3011	1661	3018	1657	1659	X			Y
13		0		0						13		0		0					
14		0		0						14		0		0					
15		0		0						15		0		0					
				Count:	12	7	5		10					**Count:**	12	6	6		10

INSTRUCTIONS:

1. Fill in shaded cells - all others are automatic calcualtions
2. Enter an "x" to designate complete or partial penetrations
3. Enter a "y" to designate use of the shot for calculation purposes - calculation group must include highest partial and lowest complete.
4. Velocity input for time factor requires microsecond (10-6) format.

TEST CONDITIONS:

Ambient Temp: 70.0 F
Rel. Humidity: 33.0 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.00 ft.
Velocity 2: 5.00 ft.

Provided Lower Velocity: ft/s
Calculated Lower Velocity: 1655 ft/s
Calculated Upper Velocity: 1805 ft/s
Calculated First Shot Velocity: 1730 ft/s

Velocity Results:	**Min**	**Max**
Panel 1:	1557	1741
Panel 2:	1537	1733

Remarks: Enter Sample No. e.g., 5…10
a - Too close to edge
b - Too close to prior impact
c - Impact on seam

CLAY BLOCK TEMPERATURE:

Pre-Test: 98.8 F
Post Test: 95.4 F

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Ammunition:** 9mm 124/FMJ **Report Number:** 9643-23
Model: MF19C **Conditioning:** Dry **Report Date:** 04/28/05
Test Date: 04/28/05 **NIJ Armor Type:** 2

BL PANEL 1				BL PANEL 2			
Shot No.	Velocity (ft/s)	Penetration		Shot No.	Velocity (ft/s)	Penetration	
		Complete	Partial			Complete	Partial
2	1584		X	2	1621	X	
3	1662		X				
				4	1571		X
5	1708	X		5	1593		X
6	1674	X		6	1655	X	
7	1622	X		7	1605		X
8	1563		X	8	1629		X
9	1600		X	9	1655		X
10	1639	X		10	1700	X	
11	1602	X		11	1669	X	
12	1557		X	12	1659	X	
Count:	10	5	5	**Count:**	10	5	5

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:	1621	ft/s
Velocity Range:	151	ft/s
Standard Deviation (σ):	49	ft/s
Panel 2 BL:	1636	ft/s
Velocity Range:	129	ft/s
Standard Deviation (σ):	39	ft/s
Difference Panel 1 to 2:	15	ft/s
Panel 1 & 2 Average BL:	1629	ft/s

PAGE WILL AUTOMATICALLY CALCULATE

H.P. WHITE LABORATORY, INC.
R&D TEST REPORT

NIJ Standard 0101.04
September 2000

Summary of Results

Armor Manufacturer: FIRST CHOICE ARMOR & EQUIPMENT **Armor Style:** MF19C **Report Number:** 9643-23
Armor Model No: MF19C **NIJ Armor Type:** 2 **Report Date:** 04/28/05

PENETRATION AND BACKFACE SIGNATURE												
Test Samples (b)					Ballistic Threat					Results		
Item	Serial		Weight	No. of		Obliquity	Req'd	Velocity (ft/s)		Penetration	BFS (mm)	
Number	Number	Panel	(lbs)	Plies	Caliber	(degrees)	Shots	Max.	Min.	(Y/N)	BFS 1	BFS 2
Sample 1	216647	Front	2.26	19	9mm	0	4	1230	1208	N	24	27
						30	2	1206	1206			
	216647	Back	2.46	19	9mm	0	4	1216	1194	N	24	28
						30	2	1213	1207			
Sample 2	216650	Front	2.26	19	9mm	0	4	1213	1190	N	24	27
						30	2	1199	1187			
	216650	Back	2.47	19	9mm	0	4	1219	1203	N	23	26
						30	2	1217	1206			
Sample 3	216649	Front	2.26	19	.357 Mag	0	4	1430	1423	N	35	34
						30	2	1430	1423			
	216649	Back	2.46	19	.357 Mag	0	4	1443	1407	N	30	34
						30	2	1443	1434			
Sample 4	216646	Front	2.26	19	.357 Mag	0	4	1434	1431	N	33	32
						30	2	1421	1419			
	216646	Back	2.48	19	.357 Mag	0	4	1435	1408	N	34	33
						30	2	1427	1422			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Aramid

P-BFS Result

Penetration: Pass
BFS: Pass

Model Compliance

Passed: YES

NIJ Baseline Ballistic Limit

Panel 1:
Type: 10 shots
Ballistic Limit: 1621 ft/s
Std Dev. (σ): 49 ft/s

Panel 2:
Type: 10 shots
Ballistic Limit: 1636 ft/s
Std Dev. (σ): 39 ft/s

CERTIFICATION:

Test Data Certification: FOY/SHAFFER
Name

Signature

Witnessed by: NA NA
Name Representing

H.P. WHITE LABORATORY, INC.
3114 Scarboro Road
Street, Maryland 21154-1822
Telephone: (410) 838-6550
Facsimile: (410) 838-2802
Email: info@hpwhite.com
www.hpwhite.com

29 April 2005
(HPWLI 9643-23A)

First Choice Armor and Equipment, Inc.
764 N. Main Street
Brockton, MA 02301

Attention: Mr. Tom Madison

Gentlemen:

In accordance with your letter, dated 25 April 2005, H.P. White Laboratory, Inc. conducted ballistic resistance testing of one male model of First Choice Armor and Equipment, Inc. protective armor, identified as Model MF19C, received 27 April 2005.

Testing, which was NOT authorized by the National Law Enforcement and Corrections Technology Center (NLECTC), was conducted in accordance with modified provisions of NIJ-STD-0101.04, BALLISTIC RESISTANCE TESTING OF POLICE BODY ARMOR, dated September 2000, Level 2. The results of this test are NOT to be used for certification of the armor in conjunction with the U.S. Department of Justice certification program for personal protective armor intended for use by law enforcement officers.

All data obtained from this testing were derived from the samples tested, and should NOT be interpreted as an endorsement by H.P. White Laboratory, Inc. of the continuing quality, or performance, of any other items of the same, or similar, design.

Should you have any questions regarding this matter, or if we may be of any further service, please do not hesitate to contact us.

Very truly yours,

H.P. White Laboratory, Inc.

Craig B. Dunn

CBD/tc
Enclosures