United States Test Laboratory, LLC
7447 W. 33rd. North
Wichita, KS 67205

This Data Is Not To Be Used For NIJ Compiance Testing Purposes

FACILITY DESCRIPTION:

Test Laboratory: United States Test Laboratory, LLC
Test Start Date: 04/17/05

Report Number: GH05001
Report Date: 04/17/05

TESTING CERTIFICATION:

Laboratory Representative: Richard W. Mouser
Name

Witnessed by:
Name

Representing

ARMOR DESCRIPTION:

Manufacturer: Gator Hawk Armor
Date Rec'd: 04/06/05
*Ballistic Material: Hybrid

*Ballistic Material Choices

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

Model: GH-2-1023
Style: N/A
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:	XLS34(F)	XLR34(B)	MS	MR	XLR	XLSL	2XL	2XRS												
Panel Serial Number:	2907-17	2907-18	2907-27	2907-28	2705-103	2705-104	2907-25	2907-26												
Plate Serial Number:	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A												
Lot Number:	061803-4	061803-4	061803-4	061803-4	050603-3	050603-3	061803-4	061803-4												
Gross Weight (lb.):	1.16	0.98	1.10	1.13	1.55	1.58	1.77	1.60												

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:	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.	Rem.
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:	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S	H.S
Test Barrel Length (in):	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	N
Removable Carrier (Y/N):	Y	Y
Number of Layers:	20	20
Description of Stitching:	Layers 1-6: Pinwheel stitch radiating from center. Layers 7-20: 1" diamond quilt. Layers 1-20: 1" horizontal bar tack at each shoulder; 1.5" horizontal bar tack at bottom center.	Layers 1-6: Pinwheel stitch radiating from center. Layers 7-20: 1" diamond quilt. Layers 1-20: 2" horizontal bar tack at each shoulder; 2" horizontal bar tack at bottom center.
Individual Layer Description:	Layers 1-15: Flex woven fiber (PBO, 31x30). Layers 16-20: Flex aramid film.	Layers 1-15: Flex woven fiber (PBO, 31x30). Layers 16-20: Flex aramid film.

REMARKS:

Lutz/Kennedy

HANDLOAD VERIFICATION WORKSHEET

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

TEST CONDITIONS:
Ambient Temp: 71 F
Rel. Humidity: 41 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 ft.

Ammunition: 9mm 124/FMJ
Test Date: 04/17/05

Ammunition: .357 Mag 158/JSP
Test Date: 04/17/05

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	4.6	4791	1196	3379	1209	1202	1	8.7	4022	1424	2867	1425	1425
2	4.6	4789	1196	3413	1197	1196	2	8.7	4033	1420	2875	1421	1421
3	4.6	4783	1198	3409	1198	1198	3	8.8	3956	1448	2820	1449	1448
4	4.7	4703	1218	3352	1219	1218	4	8.7	4044	1416	2882	1417	1417
5	4.6	4783	1198	3409	1198	1198	5	8.7	4068	1408	2890	1413	1411
6	4.7	4769	1201	3399	1202	1201	6	8.8	3960	1446	2823	1447	1447
7	4.7	4720	1214	3364	1214	1214	7	8.7	4020	1425	2865	1426	1425
8	4.7	4691	1221	3344	1222	1221	8	8.7	4044	1416	2882	1417	1417
9	4.6	4835	1185	3446	1185	1185	9	8.8	3937	1455	2806	1456	1455
10	4.7	4711	1216	3358	1216	1216	10	8.7	4023	1424	2868	1424	1424

Mean: 4.7 **Mean:** 1205 **Mean:** 8.7 **Mean:** 1429

	Test Round 1		
NIJ Reference Velocity:	1205		ft/s
Handload (NIJ Reference ± 10 ft/s):	1205		ft/s
Range (NIJ Reference ± 30 ft/s):	1175	1235	ft/s
	Min	Max	
Velocity Summary:	1185	1221	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:	1411	1455	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.

Daily Wet Conditioning Spray Calibration

Manufacturer: Gator Hawk Armor
Model: GH-2-1023

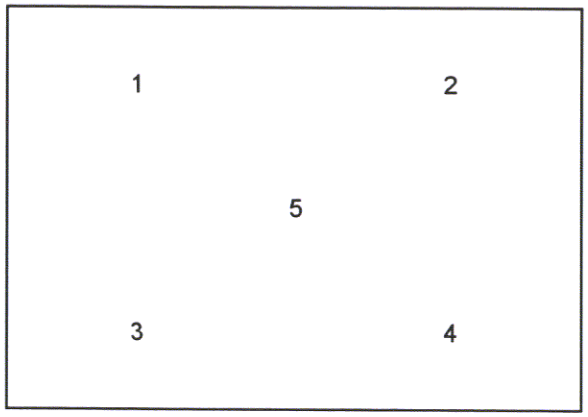
Report Number: GH05001
Report Date: 04/17/05

Calibration Date: 04/17/05

	Interval (min)						
Gauge Location	**15**	**15**	**15**	**15**	**15**	**15**	
1	1.1						inches
2	1.2						inches
3	1.3						inches
4	0.8						inches
5	0.9						inches
Average:	1.1						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

Drop Test Results

Sample/Panel: Sample 1 Front
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Test Date: 04/17/05
Range Conditions:
Temperature: 71 F
RH: 41 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 1
Time of Day: 0732 hrs
Clay Temperature: 88 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	22	19	20	20	20	20

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 1
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: 04/17/05
Range Conditions:
Temperature: 71 F
RH: 41 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 1
Time of Day: 0801 hrs
Clay Temperature: 88 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	22	21	21	20	20	21

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 1
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 Front
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Test Date: 04/17/05
Range Conditions:
Temperature: 71 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 1
Time of Day: 0805 hrs
Clay Temperature: 88 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	21	19	19	20	18	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 1
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: 04/17/05
Range Conditions:
Temperature: 71 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 1
Time of Day: 0855 hrs
Clay Temperature: 82 deg. F

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

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 1
Time of Day: 0908 hrs
Clay Temperature: 80 deg. F

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

Requirement: *19 ± 2 mm*
Pass: Y

Drop Test Results

Sample/Panel: Sample 3 Front
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Test Date: 04/17/05
Range Conditions:
Temperature: 72 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 2
Time of Day: 0914 hrs
Clay Temperature: 80 deg. F

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

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 2
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: 04/17/05
Range Conditions:
Temperature: 72 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 2
Time of Day: 1008 hrs
Clay Temperature: 80 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	20	19	17	17	17	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 2
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

Drop Test Results

Sample/Panel: Sample 4 Front
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Test Date: 04/17/05
Range Conditions:
Temperature: 72 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 2
Time of Day: 1025 hrs
Clay Temperature: 80 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	21	18	17	18	17	18

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 2
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: 04/17/05
Range Conditions:
Temperature: 72 F
RH: 42 %

Report Number: GH05001
Report Date: 04/17/05

Pre-Test Drop Calibration:

Block ID: 2
Time of Day: 1036 hrs
Clay Temperature: 80 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	21	20	18	18	17	19

Requirement: *19 ± 2 mm*
Pass: Y

Post-Test Drop Calibration:

Block ID: 2
Time of Day: 1056 hrs
Clay Temperature: 80 deg. F

	Drop 1	Drop 2	Drop 3	Drop 4	Drop 5	Avg.
Depth of Indent:	21	19	19	17	17	19

Requirement: *19 ± 2 mm*
Pass: Y

Penetration and BFS Firing Data - Sample 1

Sample No: Sample 1
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 04/17/05

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

Panel Serial No: 2907-17
Plate Serial No: N/A

Panel Serial No: 2907-18
Plate Serial No: N/A

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	4577	1251	3262	1252	1252		Y	N		39	1	4749	1206	3385	1207	1206		Y	N		39	Y	Y
2	4818	1189	3434	1190	1189		Y	N		39	2	4825	1187	3439	1188	1187		Y	N			Y	Y
3	4820	1188	3435	1189	1189		Y	N			3	4753	1205	3388	1206	1205		Y	N		39	Y	Y
4	4722	1213	3366	1214	1213	Y	Y	N			4	4861	1178	3464	1179	1179	Y	Y	N			Y	Y
5	4721	1213	3366	1214	1213	Y	Y	N			5	4772	1200	3401	1201	1201	Y	Y	N			Y	Y
6	4732	1210	3373	1211	1211		Y	N			6	4749	1206	3385	1207	1206		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: 0748 hrs
Firing Sequence End: 0755 hrs
Duration: 7 min

Firing Sequence Start: 0820 hrs
Firing Sequence End: 0832 hrs
Duration: 12 min

TEST CONDITIONS:
Ambient Temp: 71 F
Rel. Humidity: 41 %

TEST DIMENSIONS:
Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1189	1252	ft/s
Front Panel 30°:	1213	1213	ft/s
Back Panel 0°:	1187	1206	ft/s
Back Panel 30°:	1179	1201	ft/s

Handload Verification Velocity:	1205		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

Penetration and BFS Firing Data - Sample 2

Sample No: Sample 2
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Ammunition: 9mm 124/FMJ
Conditioning: Wet
Test Date: 04/17/05

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

Panel Serial No: 2907-27
Plate Serial No: N/A

Panel Serial No: 2907-28
Plate Serial No: N/A

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	4803	1193	3424	1193	1193		Y	N		35	1	4705	1217	3353	1218	1218		Y	N		39	Y	Y
2	4771	1201	3400	1201	1201		Y	N		36	2	4788	1196	3413	1197	1197		Y	N			Y	Y
3	4796	1194	3419	1195	1195		Y	N			3	4767	1202	3398	1202	1202		Y	N		35	Y	Y
4	4803	1193	3423	1193	1193	Y	Y	N			4	4844	1182	3453	1183	1183	Y	Y	N			Y	Y
5	4755	1205	3389	1205	1205	Y	Y	N			5	4827	1187	3441	1187	1187	Y	Y	N			Y	Y
6	4778	1199	3405	1200	1199		Y	N			6	4812	1190	3430	1191	1191		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: 0841 hrs
Firing Sequence End: 0849 hrs
Duration: 8 min

Firing Sequence Start: 0858 hrs
Firing Sequence End: 0905 hrs
Duration: 7 min

TEST CONDITIONS:

Ambient Temp: 71 F
Rel. Humidity: 41 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1193	1201	ft/s
Front Panel 30°:	1193	1205	ft/s
Back Panel 0°:	1191	1218	ft/s
Back Panel 30°:	1183	1187	ft/s

Handload Verification Velocity:	1205		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

Penetration and BFS Firing Data - Sample 3

Sample No: Sample 3
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Ammunition: .357 Mag 158/JSP
Conditioning: Wet
Test Date: 04/17/05

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

Panel Serial No: 2705-103
Plate Serial No: N/A

Panel Serial No: 2705-104
Plate Serial No: N/A

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	4045	1416	2883	1417	1416		Y	N		46	1	4041	1417	2880	1418	1418		Y	N		49		
2	4033	1420	2874	1421	1421		Y	N		49	2	4052	1414	2888	1414	1414		Y	N		51		
3	4066	1409	2898	1410	1409		Y	N			3	4060	1411	2893	1412	1411		Y	N			Y	Y
4	4022	1424	2866	1425	1425	Y	Y	N			4	4004	1431	2854	1431	1431	Y	Y	N			Y	Y
5	3998	1433	2850	1433	1433	Y	Y	N			5	4019	1425	2865	1426	1426	Y	Y	N			Y	Y
6	4048	1415	2885	1416	1415		Y	N			6	3983	1438	2839	1439	1438		Y	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: 0952 hrs
Firing Sequence End: 1001 hrs
Duration: 9 min

Firing Sequence Start: 1009 hrs
Firing Sequence End: 1019 hrs
Duration: 10 min

TEST CONDITIONS:

Ambient Temp: 72 F
Rel. Humidity: 42 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1409	1421	ft/s
Front Panel 30°:	1425	1433	ft/s
Back Panel 0°:	1411	1438	ft/s
Back Panel 30°:	1426	1431	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

Penetration and BFS Firing Data - Sample 4

Sample No: Sample 4
Manufacturer: Gator Hawk Armor
Model: GH-2-1023

Ammunition: .357 Mag 158/JSP
Conditioning: Wet
Test Date: 04/17/05

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

Panel Serial No: 2907-25
Plate Serial No: N/A

Panel Serial No: 2907-26
Plate Serial No: N/A

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	4020	1425	2865	1426	1425		Y	Y		N/A	1	4006	1430	2855	1431	1430		Y	N		47		
2	4035	1420	2876	1420	1420		Y	N			2	4043	1417	2881	1418	1417		Y	N		47	Y	
3	4001	1432	2852	1432	1432		Y	Y		N/A	3	4046	1416	2884	1416	1416		Y	N				Y
4	4016	1426	2862	1427	1427	Y	Y	N			4	4029	1422	2872	1422	1422	Y	Y	N			Y	Y
5	4013	1427	2860	1428	1428	Y	Y	N			5	4025	1423	2869	1424	1423	Y	Y	N			Y	Y
6	4019	1425	2864	1426	1426		Y	Y			6	4073	1406	2903	1407	1407		Y	N				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: 1024 hrs
Firing Sequence End: 1032 hrs
Duration: 8 min

Firing Sequence Start: 1039 hrs
Firing Sequence End: 1047 hrs
Duration: 8 min

TEST CONDITIONS:

Ambient Temp: 72 F
Rel. Humidity: 42 %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 ft.

VELOCITY SUMMARY:

	Min	Max	
Front Panel 0°:	1420	1432	ft/s
Front Panel 30°:	1427	1428	ft/s
Back Panel 0°:	1407	1430	ft/s
Back Panel 30°:	1422	1423	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

Ballistic Limit Firing Data

Manufacturer: Gator Hawk Armor
Model: GH-2-1023
Test Date:

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: GH05001
Report Date: 04/17/05
NIJ Armor Type: 2

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		0		0					
2		0		0					
3		0		0					
4		0		0					
5		0		0					
6		0		0					
7		0		0					
8		0		0					
9		0		0					
10		0		0					
11		0		0					
12		0		0					
13		0		0					
14		0		0					
15		0		0					
				Count:	0	0	0		0

BL PANEL 2									
Shot No.	Time 1 (µs)	Velocity (f/s)	Time 1 (µs)	Velocity (ft/s)	Vel. Avg. (ft/s)	Penetration C	Penetration P	Remarks	Used (Y/N)
1		0		0				9.5	
2		0		0					
3		0		0					
4		0		0					
5		0		0					
6		0		0					
7		0		0					
8		0		0					
9		0		0					
10		0		0					
11		0		0					
12		0		0					
13		0		0					
14		0		0					
15		0		0					
				Count:	0	0	0		0

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: F
Rel. Humidity: %

TEST DIMENSIONS:

Range Length: 16.40 ft.
Velocity 1: 5.73 ft.
Velocity 2: 4.09 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:	0	0
Panel 2:	0	0

CLAY BLOCK TEMPERATURE:

Pre-Test: F
Post Test: F

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

NIJ BASELINE BALLISTIC LIMIT CALCULATION

Manufacturer: Gator Hawk Armor
Model: GH-2-1023
Test Date: 01/00/00

Ammunition: 9mm 124/FMJ
Conditioning: Dry

Report Number: GH05001
Report Date: 04/17/05
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
Count:	0	0	0	Count:	0	0	0

BALLISTIC LIMIT SUMMARY		
Panel 1 BL:		ft/s
Velocity Range:	0	ft/s
Standard Deviation (σ):		ft/s
Panel 2 BL:		ft/s
Velocity Range:	0	ft/s
Standard Deviation (σ):		ft/s
Difference Panel 1 to 2:	#VALUE!	ft/s
Panel 1 & 2 Average BL:		ft/s

PAGE WILL AUTOMATICALLY CALCULATE

Summary of Results

Armor Manufacturer: Gator Hawk Armor
Armor Model No: GH-2-1023
Armor Style: N/A
NIJ Armor Type: 2
Report Number: GH05001
Report Date: 04/17/05

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	2907-17	Front	1.16	20	9mm	0	4	1252	1189	N	39	39
						30	2	1213	1213			
	2907-18	Back	0.98	20	9mm	0	4	1206	1187	N	39	39
						30	2	1201	1179			
Sample 2	2907-27	Front	1.10	20	9mm	0	4	1201	1193	N	35	36
						30	2	1205	1193			
	2907-28	Back	1.13	20	9mm	0	4	1218	1191	N	39	35
						30	2	1187	1183			
Sample 3	2705-103	Front	1.55	20	.357 Mag	0	4	1421	1409	N	46	49
						30	2	1433	1425			
	2705-104	Back	1.58	20	.357 Mag	0	4	1438	1411	Y	49	51
						30	2	1431	1426			
Sample 4	2907-25	Front	1.77	20	.357 Mag	0	4	1432	1420	Y	N/A	0
						30	2	1428	1427			
	2907-26	Back	1.60	20	.357 Mag	0	4	1430	1407	N	47	47
						30	2	1423	1422			

NOTES:

Maximum BFS: 44 mm
Ballistic Material: Hybrid

Model Compliance: NO

P-BFS Result

Penetration: Fail
BFS: Fail

NIJ Baseline Ballistic Limit

Panel 1:
Type: 0 shots
Ballistic Limit: ft/s
Std Dev. (σ): ft/s

Panel 2:
Type: 0 shots
Ballistic Limit: ft/s
Std Dev. (σ): ft/s

CERTIFICATION:

Test Data Certification: Richard W. Mouser
Name
Richard Mouser
Signature

Witnessed by: 0 Name
0 Representing

UNITED STATES TEST LABORATORY
V50 BALLISTIC LIMIT TEST

Date Received: 4/6/05
Via: UPS
Returned Via: UPS

Record No: GH05002
Test Date: 4/19/05
Customer: Gator Hawk

Sample

Manufacturer: Gator Hawk
Size: LR
No. of Plies: N/A
Thickness: N/A
Weight: 1.63 lb.
Temperature: 73 deg. F.
Sample No: Gator Hawk Model #: G-LITE-2, Lot #: 063003-4, Serial #: 3045-3, Front panel.

BALLISTIC THREAT

Projectile: 9 mm
Weight: 124 FMJ
Powder: Power Pistol
Barrel Length: 10 in.
Obliquity: 0 deg.
Test Spec: Mil-Std-662F

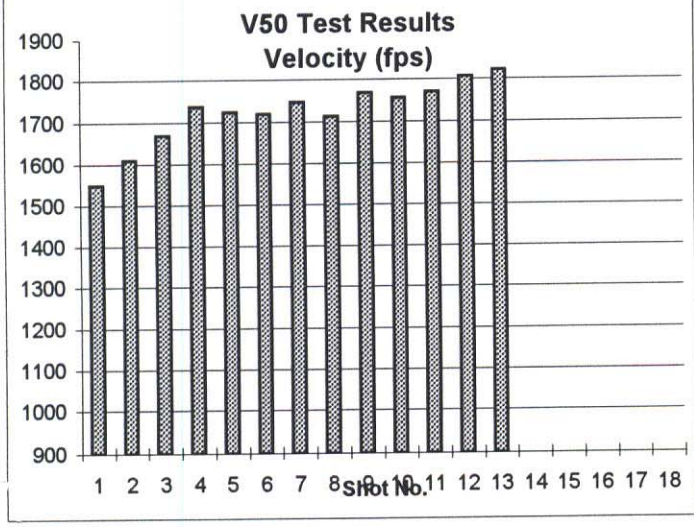
Range 2

Muzzle to Scr. 1: 6.02 ft.
Screen 1 - 2: 5.73 ft.
Screen 2 - Target: 4.45 ft.
Target to Witness: 0 ft.
Midpoint to Target: 7.32 ft.
Witness Panel: 5.5 in. clay

SHOT No.	Powder	Chronograph 1 TIME sx-5	VELOCITY fps	Chronograph 2 TIME sx-5	VELOCITY fps	AVERAGE Velocity (fps)	Loss	Instrument	SHOT Incl.	Penetration Complete Partial
1	9.3	370.0	1548	264.1	1547	1547	0	1547	n	p
2	9.7	356.3	1608	253.7	1610	1609	0	1609	n	p
3	10.2	343.5	1668	244.6	1670	1669	0	1669	n	p
4	10.7	330.3	1734	235.3	1736	1735	0	1735	y	c
5	10.4	332.6	1722	236.9	1724	1723	0	1723	y	p
6	10.6	333.7	1717	237.6	1719	1718	0	1718	y	p
7	10.8	328.6	1743	234.0	1746	1744	0	1744	y	c
8	10.7	334.9	1710	238.5	1713	1712	0	1712	y	p
9	10.9	324.4	1766	231.0	1768	1767	0	1767	y	c
10	10.8	326.6	1754	232.6	1756	1755	0	1755	y	p
11	11.0	324.1	1767	230.9	1769	1768	0	1768	y	p
12	11.4	317.5	1804	226.1	1807	1805	0	1805	y	c
13	11.4	314.5	1821	224.0	1824	1822	0	1822	y	c
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		

This test was performed in accordance with the specification requirements and the results properly reflect the ballistic performance of the listed sample.

V50 VELOCITY	HIGH PARTIAL	LOW COMPLETE	RANGE OF RESULTS	RANGE OF MIXED RESULTS
1755	**1768**	**1735**	**111**	**33**



REMARKS/NOTES

Humidity: 56%

Clay Temp.: 82 deg. F.

2 Horizontal, 2 Vertical Straps

Lutz/Kennedy

U.S. Test Laboratory, 7447 W. 33rd. St. N. Wichita, KS. 67205
Phone 316-832-1600 Fax 316-832-1602

UNITED STATES TEST LABORATORY
V50 BALLISTIC LIMIT TEST

Date Received: 4/6/05
Via: UPS
Returned Via: UPS

Record No: GH05003
Test Date: 4/19/05
Customer: Gator Hawk

Sample
Manufacturer: Gator Hawk
Size: LRR
No. of Plies: N/A
Thickness: N/A
Weight: 1.67 lb.
Temperature: 73 deg. F.
Sample No: Gator Hawk Model #: G-LITE-2, Lot #: 063003-4, Serial #: 3045-4, Back panel.

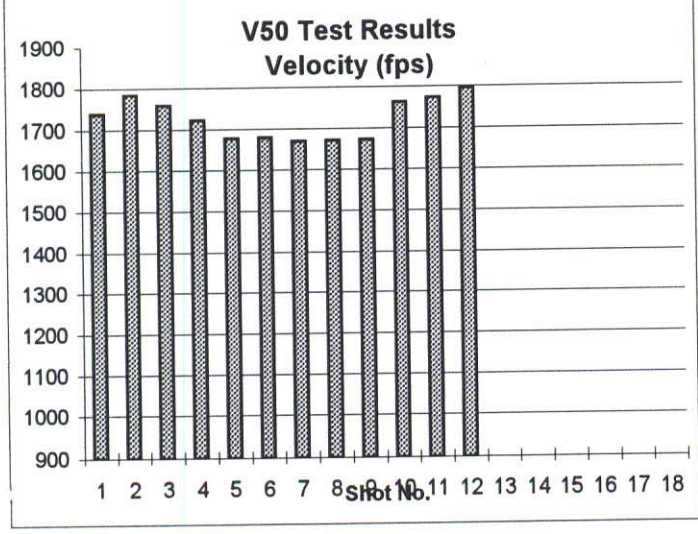
BALLISTIC THREAT
Projectile: 9 mm
Weight: 124 FMJ
Powder: Power Pistol
Barrel Length: 10 in.
Obliquity: 0 deg.
Test Spec: Mil-Std-662F

Range 2
Muzzle to Scr. 1: 6.02 ft.
Screen 1 - 2: 5.73 ft.
Screen 2 - Target: 4.45 ft.
Target to Witness: 0 ft.
Midpoint to Target: 7.32 ft.
Witness Panel: 5.5 in. clay

SHOT No.	Powder	Chronograph 1 TIME sx-5	VELOCITY fps	Chronograph 2 TIME sx-5	VELOCITY fps	AVERAGE Velocity (fps)	Loss	Instrument	SHOT Incl.	Penetration Complete Partial
1	10.7	329.9	1736	235.0	1738	1737	0	1737	y	p
2	11.2	321.6	1781	229.1	1783	1782	0	1782	y	c
3	10.9	326.3	1755	232.4	1758	1757	0	1757	y	c
4	10.6	332.9	1721	237.1	1723	1722	0	1722	y	c
5	10.2	341.6	1677	243.3	1679	1678	0	1678	y	p
6	10.3	341.2	1679	243.0	1681	1680	0	1680	y	c
7	10.1	343.3	1669	244.5	1671	1670	0	1670	n	p
8	10.1	343.0	1670	244.3	1672	1671	0	1671	n	p
9	10.2	342.6	1672	244.0	1674	1673	0	1673	y	p
10	10.9	325.5	1760	231.9	1762	1761	0	1761	y	p
11	11.1	323.4	1771	230.4	1773	1772	0	1772	y	p
12	11.3	319.3	1794	227.5	1796	1795	0	1795	y	c
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		
			-		-	-	0	-		

This test was performed in accordance with the specification requirements and the results properly reflect the ballistic performance of the listed sample.

V50 VELOCITY	HIGH PARTIAL	LOW COMPLETE	RANGE OF RESULTS	RANGE OF MIXED RESULTS
1736	**1772**	**1680**	**122**	**92**



REMARKS/NOTES

Humidity: 56%

Clay Temp.: 82 deg. F.

2 Horizontal, 2 Vertical Straps

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