

Trainee:

## Training Checklist for Examination of Gunshot Residue

### Module 1 – Introduction to Gunshot Residue and Primer Residue

Read and compile literature pertaining to:

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Origin of GSR		
Make-up of Ammunition		
Composition of Primers		
GSR Collection		
Compile Literature		

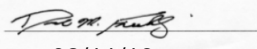
### EXERCISES

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Discuss current methods, history and limitations of GSR analysis		
Practice gunpowder visual examinations		
Practice gunpowder stereomicroscope examinations		
Practice gunpowder chemical testing		
Practice gunpowder FTIR analysis		

### EVALUATION

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Perform dermal nitrate tests on smokeless powders		
Obtain FTIR spectra on smokeless powders		
Record morphology of smokeless powders		
Discuss differences between single, double, and triple based smokeless powders		

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## Module 2- Analysis of Gunshot Residue Samples using ICP-MS

Under supervision of training officer the trainee will learn to operate and conduct analyses on the ICP-MS.

### EXERCISES

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Practice pipetting water		
Discuss operation of ICP/MS		
Prepare GSR Standards and plot standard curve		
Discuss effects of adjusting parameters on ICP/MS		
Read and Compile literature		

### EVALUATION

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Practical examination on Pipetting		
Practical examination on ICP/MS operation		
Practical examination on Unknowns		

## Module 3 - Analysis of Gunshot Residue Samples using SEM-EDX

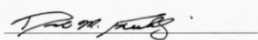
Read and compile literature pertaining to:

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Gunshot Residue formation during firearm discharge		
Morphology/elemental composition of GSR particles		
GSR vs. environmental particles		
Ammunition formulations effect on particle formation		

### EXERCISES

	<u>Date</u> <u>Completed</u>	<u>Initials</u>
Discuss peak identification process		

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Demonstrate ability to setup GSR program and archive data		
Setup <u>known</u> GSR samples and examine for GSR		
Setup ten <u>unknown</u> GSR samples and examine for GSR		
Examine samples from Brake pads and fireworks		
Setup case samples and analyze under instructor supervision		

#### EVALUATION

Record and Print Results from Exercises		
Submit and Discuss results from exercises		

#### Module 4 – Gunshot Residue Deposition Exercise

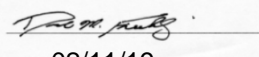
Under supervision of training officer the trainee will learn to operate and conduct analyses on the ICP-MS.

EXERCISES	<u>Date</u>	<u>Initials</u>
	<u>Completed</u>	
Read and Compile literature		
Collect samples for Caliber Study		
Collect samples for Ammunition Study		
Collect samples for Time Study		
Collect samples for Number of Shots Fired Study		
Collect samples for Gun Handling Study		
Collect samples for Occupational Study		

#### EVALUATION

Prepare and analyze swab samples from Exercises by ICP/MS		
Submit and Discuss results from exercises		

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### Module 5 - Casework

<b>EXERCISES</b>	<b><u>Date</u> <u>Completed</u></b>	<b><u>Initials</u></b>
Discuss proper note taking and marking of evidence		
Discuss proper collection of Gunshot Residue evidence		
Discuss documentation of Evidence and packaging		
Discuss selection of proper analysis techniques		

### EVALUATION

Complete Gunshot Residue Examination (Mock Case)		
Complete Laboratory Report		

### Module 6 – Final Evaluation & Preparation for Court

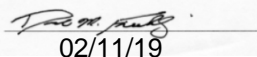
Read and compile literature pertaining to:

	<b><u>Date</u> <u>Completed</u></b>	<b><u>Initials</u></b>
Daubert vs. Merrill Dow Pharmaceuticals		
Frye vs. United States		
Courtroom Testimony Techniques		

### EXERCISES

	<b><u>Date</u> <u>Completed</u></b>	<b><u>Initials</u></b>
Prepare or update CV		
Prepare series of qualifying questions and answers		
Observe pretrial conferences and/or courtroom testimony (if possible)		

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Training Checklist for Examination of Gunshot Residue  
Physical Evidence Section – Trace Unit

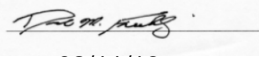
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**EVALUATION**

Complete Moot Court or Roundtable Discussion		
Complete Final Written Competency Test		

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