



# ANALYSIS OF A WET SILENCER IN A DOUBLE HOMICIDE CASE

MICHEAL VILLARREAL, BA, FORENSIC CHEMIST; JEFFREY DAKE, MSFS, FORENSIC CHEMIST  
UNITED STATES ARMY CRIMINAL INVESTIGATION LABORATORY



## CASE SUMMARY

01 MAR 2008 (NIGHT) – SUSPECT LEFT A CASINO, WENT TO THE HOUSE OF THE VICTIMS. SHOT AND KILLED VICTIMS, STOLE THE PURSE AND PHONE OF WIFE.

02 MAR 2008 (MORNING) – BABYSITTER CALLS THE PHONE TO SEE WHEN THEY WOULD PICK UP THE CHILD, SUSPECT TEXTS BACK (IMPERSONATING WIFE), STATES THAT (THE SUSPECT) WILL BE PICKING UP THE CHILD FOR THE VICTIMS.

02 MAR 2008 (MORNING) – SUSPECT PICKS UP THE CHILD, PURCHASES MURIATIC ACID AND GAS MASKS AT LOWE'S TO DISPOSE OF THE BODIES.

02 MAR 2008 (AFTERNOON) – SUSPECT RETURNED TO HER BARRACKS ROOM WITH THE BABY. UPON QUESTIONING ABOUT THE BABY, CONFESSED TO THE MURDERS.

02 MAR 2008 (AFTERNOON) – MP TOOK SUSPECT INTO CUSTODY, RECOVERED CHILD. LOCAL PD WENT TO THE MURDER SCENE TO DOCUMENT/COLLECT EVIDENCE. MP RECOVERED PISTOL, SILENCER AND CLEANING SUPPLIES FROM SUSPECT'S BARRACKS ROOM.



FIGURE 1: SHOWER CURTAIN

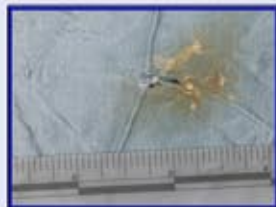


FIGURE 2: CLOSE-UP CURTAIN



FIGURE 3: BARREL OF GLOCK PISTOL (40 CAL)



FIGURE 4: LITHIUM GREASE (LITH-EASE)

## BACKGROUND

SILENCERS ARE DESIGNED TO MINIMIZE OR ELIMINATE NOISES ASSOCIATED WITH FIRING A WEAPON. THEY WORK BY DISSIPATING HOT GASES THROUGH BAFFLES AND EXPANSION CHAMBERS. THIS COOLS DOWN THE GASES SO THAT THE NOISE PRODUCED IS MUTED. THIS SUPPRESSION CAN BE ENHANCED BY A "WET" FIRE. THIS IS DONE BY ADDING A LIQUID, OIL, GREASE OR GEL IN THE EXPANSION CHAMBER WHICH WILL COOL THE PROPELLANT GASES AND REDUCE THEIR VOLUME.



FIGURE 5: SILENCER INTERIOR



FIGURE 6: SILENCER EXTERIOR

## SAMPLE PREP

- STEP 1: NEAT SMEARS OF RESIDUE FROM SAMPLES PLACED ON MYLAR SHEETS (ANALYZED BY XRF).
- STEP 2: EXTRACTED SAMPLES WITH HEXANE (ANALYZED BY FTIR AND GC-MS).
- STEP 3: EXTRACTED SAMPLES WITH TOLUENE.
- STEP 4: MIXED TOLUENE WITH METHANOL AND SULFURIC ACID.
- STEP 5: HEATED MIXTURE, CENTRIFUGED AND REMOVED TOLUENE LAYER (ANALYZED BY GC-MS).
- STEP 6: SAMPLE PLACED IN PLATINUM DISH AND ASHED.
- STEP 7: SAMPLE HEATED WITH SULFURIC ACID.
- STEP 8: ASHED SAMPLE RINSED WITH DEIONIZED WATER (ANALYZED BY IC).

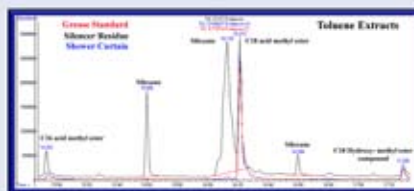


FIGURE 7: GCMS - TOLUENE

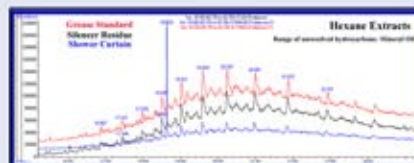


FIGURE 8: GCMS - HEXANE

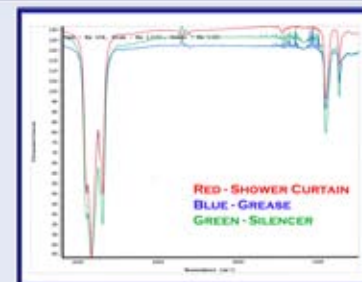


FIGURE 9: FTIR OVERLAY

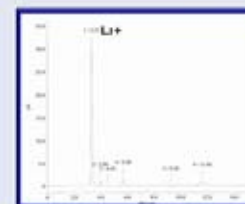


FIGURE 10: IC - CURTAIN STAIN

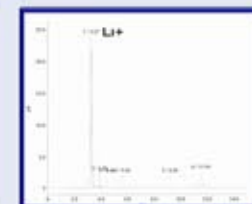


FIGURE 11: IC - GREASE

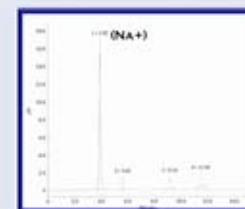


FIGURE 12: IC - CURTAIN CONTROL

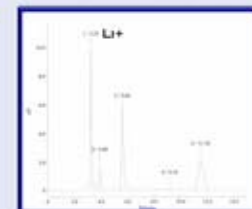


FIGURE 13: IC - SILENCER

## RESULTS

- LITHIUM GREASE CONSISTENT WITH RESIDUE RECOVERED FROM THE RESIDUE IN THE SILENCER BARREL
- LITHIUM GREASE CONSISTENT WITH STAINS AROUND DAMAGE IN SHOWER CURTAIN
- SAMPLES OF LIQUID SOAKED CLOTHING TESTED POSITIVE FROM A HIGHLY ACIDIC SUBSTANCE WITH ELEVATED LEVELS OF CHLORINE.
- DNA LINKED THE CHILD TO ONE OF THE GAS MASKS
- DNA LINKED BLOOD FROM THE BARREL OF THE SILENCER (BLOWBACK) AND FRAME OF THE GUN TO BOTH VICTIMS
- SUSPECT'S DNA ALSO FOUND ON THE GUN

## RESOLUTION

SUSPECT PLED GUILTY TO 2 COUNTS OF PREMEDITATED MURDER, AND 2 COUNTS OF KIDNAPPING AND OBSTRUCTION OF JUSTICE. SHE WAS SENTENCED TO BE CONFINED FOR THE REST OF HER LIFE WITHOUT THE POSSIBILITY OF PAROLE, REDUCTION TO E-1, AND A DISHONORABLE DISCHARGE.