



Serial Number Restoration

Test No. 20-5250 Summary Report

Each participant received a sample pack containing a piece of metal bar stock, which had been stamped with a six-character serial number that was then obliterated. Also included was a piece of aluminum bar stock intended as a standard for the size, shape and positioning of the stamped characters. Participants were asked to restore the obliterated serial number and report their findings. Data were returned from 278 participants and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set consisted of a piece of steel bar stock that contained an obliterated serial number (Item 1) and a piece of aluminum bar stock intended as a standard for the size, shape, and positioning of the stamped digits. Participants were requested to attempt to restore the obliterated serial number utilizing their laboratory restoration methodologies and report the recovered serial number. The serial number to be restored consisted of 6 characters (DC102F).

SAMPLE PREPARATION:

Each sample set contained a piece of steel bar stock that was stamped with six characters (DC102F). The serial number was then obliterated by a milling machine.

A piece of aluminum bar stock was also included in the sample as a reference standard. The alphanumeric characters provided are digits 0-9 and letters A-F, H, J, K and N.

SAMPLE SET ASSEMBLY:

Each Item 1 bar stock and aluminum standard bar stock were separately enclosed in chip board, with the sides taped for security and then placed in their respective pre-labeled envelopes. Every sample pack was packaged to contain an Item 1 and aluminum standard. This process was repeated until all of the sample packs were prepared. Once verification was completed, all sample packs were sealed with a piece of evidence tape and initialed "CTS."

VERIFICATION:

Two of the three predistribution laboratories restored the obliterated six-character serial number and reported "DC102F". The remaining predistribution laboratory reported "DC1(0 or 8)2F". One laboratory used chemical restoration methods, one laboratory used a magnetic restoration method and the remaining laboratory used both magnetic and chemical methods to process the Item 1 bar stock.

Summary Comments

This test was designed to allow participants to assess their proficiency in the restoration of an obliterated serial number. Participants were provided with a piece of metal bar stock that contained an obliterated serial number (Item 1) and a piece of aluminum bar stock intended as a standard for the size, shape and positioning of the stamped characters. Participants were requested to restore the obliterated serial number utilizing their laboratory recovery methodologies and report the recovered serial number. The serial number to be restored consisted of 6 characters (DC102F). (Refer to Manufacturer's Information for preparation details.)

Of the 278 responding participants in Table 1 (Recovered Characters), 247 (89%) restored the six characters consistent with the Manufacturer's Information. Nineteen participants restored five of the six characters, nine participants reported less than five characters and two participants were unable to restore any of the characters of which were reported in the Manufacturer's Information.

In Table 3 (Sample Preparation), the majority of participants used polishing, sanding, or visual methods to prepare their sample. In Table 4 (Recovery Methods), the majority of participants used chemical processing for the serial number restoration. However, it was noted that there were many laboratories that used both chemical and magnetic restoration methods.

Recovered Characters

Please record the recovered characters below.

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
28GMZG	D	C	1	0	2	F
28YVQW	D	C	1	0	2	F
2A2R2Y	D	C	1	0	2	F
2FVHNM	D	C	1	0	2	F
2GPGWU	D	C	1	0	2	F
2LW2N8	D	C	1	0	2	F
2W99K8	D	C	1	0	2	F
2X7KEF	D	C	1	0	2	F
2XNMU3	D	C	1	0	2	F
2YFNTY	D	C	1	0	2	F
34HLJJ	D	C	1	0	2	6
34UMYQ	D	C	1	0	2	F
369WAC	D	C	1	0	2	F
38DG3J	D	C	1	0	2	F
39JZRE	D	C	1	0	2	F
3J6B9K	D	C	1	0	2	F
3VLVU3	D	C	1	0	2	F
3YJC9H	D	C	1	0	2	F
42LUHX	D	C	1	0	2	F
44NTJP	D	C	1	0	2	F
46ZKGD	D	C	1	0	2	F
47RLC3	D	C	1	0	2	F
48C7JL	D	C	1	0	2	F
4BLDRC	D	?	(1)	0	2	F
4ERP2Y	D	C	1	0	2	F
4FPZUG	D	C	1	0	2	F
4GUPV6	D	C	1	0	2	F
4MPFKP	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
686JFC	D	C	1	0	2	F
68Z43C	D	C	1	0	2	F
6E8DUE	D	C	1	0	2	F
6H9EXG	D	C	1	0	2	F
6P9UL4	D	C	1	0	2	F
6PJRKT	D	C	1	0	2	F
6U77PG	D	C	1	0	2	F
739WJ4	D	C	1	0	2	F
77LQ8M	D	C	1	0	2	F
7BZJ68	D	C	1	0	2	F
7FN9HQ	D	C	1	0	2	F
7GZ7R2	D	C	1	0	2	F
7HHW2L	D	C	?	?	2	F
7KCKWN	D	C	1	0	2	1
7LLPBC	D	C	1	0	2	F
7N9DLC	D	C	1	0	2	F
7R42B7	D	C	1	0	2	F
7RJKTH	D	C	1	0	2	F
7TYR8D	D	C	1	0	2	F
7VKKVZ	D	C	1	0	2	F
7ZNYEL	D	C	1	0	2	F
8A9PEH						
8EWER2	D	C	1	0	2	F
8F98D3	D	C	1	0	2	F
8N67XP	D	C	1	0	2	F
8PW4BM	D	C	1	0	2	F
8RDMXD	D	C	1	0	2	F
8Y2ATH	D	C	1	0	2	F
92RMHF	D	C	1	0	2	F
98CXDW	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
99NGGZ	D	C	1	0	2	F
9DXNQQ	D	C	1	0	2	F
9EQNW3	D	C	1	0	2	F
9EV4A4	D	C	1	0	2	F
9HEXCV	D	C	1	0	2	F
9KZVKL						
9LE7G7	D	C	1	0	2	F
9TEL7D	D	C	1	0	2	F
9UYQ8V	D	C	1	0	2	F
9VUEJY	D	C	1	0	2	F
9ZFX3B	D	C	1	0	2	F
A3EJNL	D	C	1	0	2	F
A443XX	D	C	1	0	2	F
A7V6VY	D	C	1	0	2	F
AAFRUE	D	C	1	0	2	F
ACKEDK	D	C	1	0	2	?
AE7HM3	D	C	1	0	2	F
AVXZ9T	D		1	0	2	F
AZ4R2X	D	C	1	0	2	F
B6VDAC	D	C	1	0	2	F
B7E3AK	D	C	1	0	2	F
B7P7EV	D	C	1	0	2	F
B9H24P	D	C	1	0	2	F
B9YZCG	D	C	1	0	2	F
BCCWRQ	D	C	1	0	2	F
BCEK96	D	C	1	0	2	F
BD9GL6	D	*	*	*	2	F
BG9M6G	D	C	1	0	2	F
BM3G7P	D	C	1	0	2	F
BMJH87	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
BT97QH	D	C	1	0	2	F
BUXJ92	D	C	1	0	2	F
C7K38X	D	C	1	0	2	F
CFUBVQ	D	C	1	?	2	F
CFXVZ8	D	C	1	0	2	F
CG77J4	D	C	1	0	2	F
CHKJC8	D	C	1	0	2	F
CHX8EU	D	C	1	0	2	F
CJX7W8	D	C	1	?	2	P
CLH6Y4	D	C	1	0	2	F
CMVQJD	D	C	1	0	2	F
CQU2ED	D	C	1	0	2	F
CUWUXC	D	C	1	0	2	F
CWLBXC	D	C	1	0	2	F
CWX9UG	D	C	1	0	2	F
DA6FHD	D	C	1	0	2	F
DGHD4C	D	C	1	0	2	F
DJVDA	D	C	1	0	2	F
DLVAJL	D	C	1	0	2	F
DR4D4U	D	C	1	0	2	F
DX9DXW	D	C	1	0	2	F
DXRZWE	D	C	1	0	2	F
DYA6ED	D	C	1	0	2	F
EAZZ6D	D	C	1	0	2	F
EEYET3	D	C	1	0	2	F
EF9LXG	D	C	1	0	2	F
EFM8A4	D	C	1	0	2	F
EKVPAR	D	C	1	0	2	F
EM4T9A	D	C	1	0	2	F
EQGMVT	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
EWTA6Q	D	C	1	0	2	F
EXRBD4	D			0		F
EZC9GZ	D	C	1	0	2	F
F26KVY	D	C	1	0	2	F
F2KY49	D	C	1	0	2	F
F4ACLR	D	C	1	0	2	F
FCHXFM	D	C	1	0	2	F
FEN7Y7	D	C	1	0	2	F
FGXAV3	D	C	1	0	2	F
FJ24EF	D	C	1	0	2	F
FKYCGX	D	C	1	0	2	F
FMZF9K	D	C	1	0	2	F
FUDJ3Y	D	C	1	0	2	F
FYXCC8	D	C	1	0	2	F
G2JBF4	D	C	1	0	2	F
G3MEEJ	D	C	1	0	2	F
G4GZAV	D	C	1	0	2	F
G6W64N	D	C	1	0	2	F
GHL4UQ	D	C	1	0	2	F
GXEUUT	D	C	1	0	2	F
GZ3AD2	D	C	1	0	2	F
H7MVG7	D	C	1	0	2	F
HDKLZV	D	C	1	0	2	F
HE6X8G	D	C	1	0	2	F
HG236T	D	C	1	0	2	F
HMB77T	D	?	1	0	2	F
HP27LD	D	C	1	0	2	F
HP4VQA	D	C	1	0	2	F
HQBDQQ	D	C	1	0	2	F
HXE8TY	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
HYBHYA	D	C	1	0	2	F
J4DZKF	D	C	1	0	2	F
J8YNB9	D	C	1	0	2	F
JCAUKY	D	C	1	0	2	F
JCUJU8	D	C	4	0	2	F
JF8GAG	D	C	1	0	2	F
JUVCQ8	D	C	1	0	2	F
K276A2	D	C	1	0	2	F
K9Q2HX	D	C	1	0	2	F
KQLRB7	D	C	1	0	2	F
KTT8BW	D	C	1	0	2	F
KV24A8	D	C	1	0	2	F
L7XPVW	D	C	1	0	2	F
L89G3R	D	C	1	0	2	F
L97ZRZ	D	C	1	0	2	F
LFG3WN	D	C	1	0	2	F
LFLKTR	D	C	1	0	2	F
LML384	D	C	1	0	2	F
LXLHBM	D	C	1	0	2	F
MDADYX	D	C	1	0	2	F
MFV7MK	D	C	1	0	2	F
MGLAD8	D	C	1	0	2	F
MK8ZU4	D	C	1	0	2	F
MMKEKX	D	C	1	0	2	F
MN789L	D	C	1	0	2	F
MUEKDY	D	C	1	0	2	F
MVB7VW	D	C	1	0	2	F
MY67UZ	D	C	1	0	2	F
MYQGT9	D	C	1	0	2	F
N46FYZ	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
NDPWJU	D	C	1	0	2	F
NDQJ7Z	D	C	1	0	2	F
NH2UW9	D	C	1	0	2	F
NJWHBX	D	C	1	0	2	F
NNMLA4	D	C	1	0	2	F
NRRBR6	D	C	1	0	?	F
NXCH64	D	C	1	0	2	F
P2WMH8	D	C	1	0	2	F
P6CDM3	D	C	1	0	2	1
PJ636R	D	C	1	0	2	F
PKGQUX	D	C	1	0	2	F
PLV6BF	D	C	1	0	2	F
PQN94J	D	C	1	0	2	F
PUW9UK	D	C	1	0	2	F
PV2XTM	D	C	1	0	2	F
PY23FF	D	C	1	0	2	F
Q8BX3L	D	C	1	0	2	F
Q8FCEL	D	C	1	0	2	F
QDHJUP	D	C	1	0	2	F
QHDDP6	D	C	1	0	2	F
QL8CZU	D	C	1	0	2	F
QQJ9E4	D	C	1	0	2	F
QRDUBF	D	C	1	0	2	F
QXAAAN	D	C	1	0	2	F
QXF4EM	D	C	1	0	2	F
QYL6UV	D	C	1	0	2	F
R4CWLP	D	C	1	0	2	F
R7B99N	D	C	1	0	2	F
R8N3L4	D	C	1	0	2	F
RE88RB	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
RGF6GL	D	C	1	0	2	F
RJKRYW	D	C	1	0	2	F
RKTY66	D	C	1	0	2	F
RKVUKV	D	C	1	0	2	F
RKXG29	D	C	1	0	2	F
RP72TM	D	C	1	0	8	F
RU7W7V	D	C	1	0	2	F
RY9EUM	D	C	1	0	8	F
T2YQGY	D	0	1	0	8	F
T44C97	D	C	1	0	2	F
T4ZQKC	D	C	1	0	2	F
TAULJ4	D	C	1	0	2	F
TBQ774	D		1	0	2	F
TL62JG	D	C	1	0	2	F
TUGCJV	D	C	1	0	2	F
TYUVZG	D	C	1	0	2	F
U2UQWP	D	C	1	0	2	F
U3NBQC	D	C	1	0	2	F
U6DLYH	D	C	1	0	2	F
U6VUNC	D	C	1	9	2	F
U98VDN	D	C	1	0	2	F
UHMGVT	D	C	1	0	2	F
UMC3HL	D	C	1	0	2	F
URT44T	D	C	1	0	2	F
UT36XE	D	C	1	0	2	F
UTXVUK	D	C	1	0	2	F
UXWZXQ	D	C	1	0	2	F
UZLEEN	D	C	1	0	2	F
V8CAKX	D	C	1	0	2	F
VBBQWR	D	C	1	*	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
VDLHCM	D	C	1	0	2	F
VF8B2B	D	C	1	0	8	F
VGKT9M	D	C	1	0	2	F
VGYZBZ8	D	C	1	0	2	F
VHHEPK	D	C	1	0	2	F
VK3DTG	D	C	1	0	2	F
VN6AKX	D	C	1	0	8	F
VNF8G2	D	C	1	0	2	F
VTDQKK	D	C	1	0	2	F
VX4ZUJ	D	C	1	0	2	F
W8ZWVT	D	?	?	?	?	F
WAYD2V	D	C	1	0	2	F
WC46T9	D	E	?	?	0	5
WPVPFQ	D	C	1	0	2	F
WQ27FH	D	C	1	0	2	F
WTDPUJ	D	C	1	0	2	F
WXN3BK	D	C	1	0	2	F
WYDD3D	D	C	1	0	2	F
WZXPAY	D	C	1	0	2	F
X2Z9CY	D	C	1	0	2	F
X437K7	D	C	1	0	2	F
X7W88	D	C	1	0	2	F
XU2JTA	D	C	1	0	2	F
XX2PE7	D	C	1	0	8	F
XXMCWP	D	?	1	0	2	F
Y9F9HM	D	C	1	0 OR 8	2	F
YARU8P	D	C	1	0	2	F
YAVMRH	D	C				F
YBKXHB	D	-	-	-	-	F
YCDNWC	D	C	1	0	2	F

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
YK9W8V	D	C	1	0	2	F
YKVZ4C	D	C	1	0	2	F
YN84LD	D	C	1	0	2	F
YTMHHK	D	C	1	0	2	F
YTP9P3	D	C	1	0	2	F
ZFUFHY	D	C	1	0	2	F
ZHWB33	D	C	1	0	2	F
ZUFTVY	D	C	1	0	2	F
ZWJQXE	D	C	1	0	2	F
ZWZYWG	D	C	1	0	2	F

Response Summary						Participants: 278
	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
Consensus	D	C	1	0	2	F
Number	276	265	268	266	264	270
Percent	99.3%	95.3%	96.4%	95.7%	95.0%	97.1%

Conclusions

TABLE 2

WebCode	Conclusions
28GMZG	The serial number is ground off. The serial number (DC102F) was restored by acid etching. Polishing and the Fry's reagent were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm.
28YVQW	Results and Conclusions: The obliterated serial number on the alloy steel bar stock, item 1, was restored to DC102F. Methods and Observations: The alloy steel bar stock, item 1, was examined noting that the serial number was obliterated by a possible grinding type of tool. Using standard restoration techniques, the area was sanded and treated with chemicals and magnetic inspection particles. Remarks: This report contains the opinions and interpretations of the analyst whose signature appears on the report.
2A2R2Y	The alloy steel bar received had an area of obliteration. After electrochemical process, the new set of number was developed to be read as "DC102F". "DC102F" could be the original number of the alloy steel bar.
2FWHNM	I used chemical etching techniques to recover Serial Number DC102F. This process and number was verified by [Name].
2GPGWU	Visual examination with mechanical and chemical processing of the 4140 alloy bar stock (Item 1) revealed the obliterated serial number to read: DC102F. Evidence examined for this report will be returned to the [Laboratory] Quality Manager.
2LW2N8	Examination and chemical processing of Item 1 restored the original obliterated serial number, which was determined to be "DC102F".
2W99K8	The piece of metal labeled as Item1 shows obliterated area due to the action of a tool, wich modified the original alphanumeric secuencia marked by the manufacturer. This secuencia was fully recovered by the procedure for revelation employed, getting DC102F. It is informed that the caracteres revealed are not to keep visibles but alteration remains.
2X7KEF	The serial number is milled off. The serial number (DC102F) was restored by the acid etching process. Polishing, Fry's reagent and Nitric Acid reagents were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. Disposition: This item will be held in the Firearm Section's Evidence Room
2XNMU3	I restored the serial number by means of the Magnaflux process followed by chemical etching. In my opinion, the serial number was DC102F.
2YFNTY	I visually inspected item 1 and found no readily visible alpha or numeric characters. Attempts to restore the serial number were made by sanding and polishing the surface with a Dremol tool and acid etching resulting in the serial number restored to read, DC102F.
34HLJJ	The steel bar stock was sanded and polished. After this step, no characters were observed. Magnetic particle inspection did not reveal any characters. A combination of Fry's reagent and Turner's reagent revealed D C ? ? ? ?. Application of Phosphoric & Nitric Acid and Davis reagent revealed the final four characters. Final restoration: DC1026.
34UMYQ	Visual examination with mechanical and chemical processing of the steel bar stock (Item 1) revealed the obliterated serial number to read: DC102F. Evidence examined for this report will be returned to the [Laboratory] Quality Manager.
369WAC	Examination of Item 1 revealed an obliterated area on the alloy steel bar stock. Standard chemical restoration techniques revealed the following characters: "DC102F".
38DG3J	Item 1 was examined and found to exhibit an area of obliteration. Polishing, chemical etching, and magnetic particle inspection of the obliterated area revealed the following serial number: DC102F.
39JZRE	Polishing, magnetic particle inspection (MPI), and chemical etching were used to restore the obliterated serial number to read "DC102F".

TABLE 2

WebCode	Conclusions
3J6B9K	The 6 character serial number was successfully recovered with combination of polishing and chemical treatment
3VLVU3	Examination of the metal block of 4140 alloy steel (001-1) found the serial number was obliterated. Submission 001-1 was examined and photographed before polishing the obliterated surface with a Dremel tool. Magnetic and chemical processing methods were applied to the polished surface in order to restore the serial number. The serial number was restored to read DC102F.
3YJC9H	Item 1 was found to exhibit an area of obliteration. Polishing, magnetic particle inspection, and chemical etching revealed the following serial number: DC102F.
42LUHX	Examination of the submitted steel bar stock (Item 1) found the manufacturer's serial number to have been obliterated. Physical and chemical processing of the submitted steel bar stock (Item 1) restored the obliterated, original serial number to read "DC102F".
44NTJP	The serial number on Item 1 was restored to read D C 1 0 2 F using chemical etching techniques.
46ZKGD	Serial number restoration was performed on item 1. The serial number DC102F was restored.
47RLC3	According to the results, the following conclusions: The piece of alloy steel bar stock (identified as Item 1) has a suspected obliterated serial number in the middle part of one of its sides. The DC102F sequence was recovered. The revealed characteristics are not permanently recovered and the wear persists in the alloy steel bar.
48C7JL	The serial number had been obliterated from the steel bar stock. Serial number restoration techniques via chemical etching yielded the serial number DC102F.
4BLDRC	The defaced serial number on the piece of 4140 alloy steel bar stock (item 1) was partially restored to read "D?(1)02F". The question mark ("?)") represents an unrestored character. The (1) represents a character visually consistent with "1".
4ERP2Y	Examination of the submitted metal bar stock found the serial number to have been obliterated. Physical and chemical processing of the metal bar stock restored the obliterated, original serial number to read "DC102F".
4FPZUG	Acid etching chemicals restored the following serial number on the steel alloy bar as DC102F.
4GUPV6	The serial number on item 1 was restored to D C 1 0 2 F .
4MPFKP	Visual examination, polishing, and chemical treatment of Item 1 restored the obliterated serial number to read "DC102F".
686JFC	Chemical restoration methods were employed to make the defaced serial number visible, now seen as "DC102F".
68Z43C	Serial number restoration techniques were applied to Item 1. The serial number was determined to be DC102F.
6E8DUE	The restoration revealed the following characters: D C 1 0 2 F
6H9EXG	As a result of an attempted obliterated number restoration proficiency test, the following characters were observed: DC102F
6P9UL4	1. Examination of Exhibit 1 revealed one ferromagnetic metal bar with approximate dimensions of 27.40mm by 68.45mm by 6.91mm. 2. An obliterated area was observed on Exhibit 1 containing toolmarks consistent with a grinding type tool such as an end mill. Standard restoration techniques revealed the following characters: DC102F.
6PJRKT	Steel bar stock (1) was physically/chemically/magnetically processed. Its serial number was restored to read DC102F.

TABLE 2

WebCode	Conclusions
6U77PG	The serial number from the obliterated area on item 1 was processed by magnetic particle inspection and acid etching and determined to be DC102F.
739WJ4	The serial number on item 1 was restored to DC102F.
77LQ8M	The serial number was restored to read DC102F using chemical etching techniques.
7BZJ68	The serial number on the alloy steel bar stock was restored to read D C 1 0 2 F using chemical etching techniques.
7FN9HQ	Attempts to restore the obliterated serial number of the steel bar, Item 1.1, were successful. The restored serial number is DC102F.
7GZ7R2	The piece of metal analyzed was determined altered. The alphanumeric sequence was obtained by chemical development, and concordant with characteristics evaluated in the comparative material
7HHW2L	A serial number restoration was attempted using chemical etching techniques on Item 1. The serial number was partially restored to read D C ? ? 2 F. The third character could be either a "4", a "J", or a "1" and the fourth character appears to be a "0".
7KCKWN	The steel bar in Sample Pack SNR1 was physically and chemically processed in an attempt to recover the serial number. The serial number was recovered and appeared to be DC1021.
7LLPBC	The serial number had been erased. I was able to restore the serial number to read DC102F
7N9DLC	The serial number is milled off. The serial number (DC102F) was restored by the acid etching process. Polishing, Fry's reagent and Nitric Acid reagents were used for the restored. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. Disposition: This item will be stored in the Firearm Section's Evidence Room.
7R42B7	The erased serial number was successfully restored: in my opinion it was DC102F.
7RJKTH	The characters were removed from the metal sample approximately 0.2-0.3 mm thickness. The removed serial number was resulted by the examination DC102F
7TYR8D	Serial number is obliterated (deeply abraded), restored using the MPI (Magnetic Particle Inspection) as well as the Chemical etching processes. "20-5250D" etched on MB1 (metal block 1) for identification.
7VKKVZ	Restored number using acid application and Magnaflux - DC102F
7ZNYEL	[No Conclusions Reported.]
8A9PEH	Number restoration techniques were applied to the received item, described as a piece of 4140 alloy bar stock, in an attempt to restore a suspected obliterated serial number. No characters or partial characters were restored on the alloy bar stock.
8EWER2	The obliterated area on the Item 1 metal block was processed using standard serial number restoration techniques. The characters were restored and appeared as follows: DC102F.
8F98D3	Unique: It was obtained a full restoration of the metallic alloy steel bar described in digit 1; the serial number is DC102F, which corresponds to the size and shape of the characters engraved on the reference plate described and identified in digit 2.
8N67XP	2020-5250: Serial Number Restoration [Participant Code] The following findings reflect the professional opinion of the examiner authoring this report. Examination of Item 1 revealed (1) piece of reportedly 4140 alloy steel bar stock with a suspected obliterated serial number. Using chemical and physical serial number restoration techniques, an attempt was made to restore the obliterated serial number with the following results: Serial Number: DC102F was restored on Item 1
8PW4BM	Using standard laboratory physical and chemical restoration techniques the obliterated serial number on Item 1 was restored to read DC102F.

TABLE 2

WebCode	Conclusions
8RDMXD	The serial number of Item 1 was restored using mechanical polishing and chemical etching techniques and was found to be: DC102F.
8Y2ATH	The serial number was restored to read DC102F, using chemical etching techniques.
92RMHF	The serial number on the metal plate (Exhibit 1) was mechanically and chemically treated and restored to read DC102F.
98CXDW	The serial number was successfully restored to read DC102F.
99NGGZ	Item 1 is a piece of alloy steel bar stock bearing an obliterated area which was restored to read DC102F. The serial number in Item 1 was restored using polishing tools and various chemical etchants.
9DXNQQ	On the examination, I found that there were filing mark on the alloy steel bar stock and no numbers were observed. On electrochemical treatment, a set of number read as "DC102F" was restored. Hence, I am of the opinion that the numbers of the alloy steel bar stock were tempered and the original numbers were "DC102F"
9EQNW3	The following findings reflect the professional opinion of the examiner authoring this report. Using chemical and physical serial number restoration techniques, an attempt was made to restore the obliterated serial number with the following results: Serial Number: D C 1 0 2 F was restored on Item 1
9EV4A4	Item 1-1 Trace item - A piece of 4140 alloy steel bar stock with suspected obliterated serial number: Visual examination of this item revealed the presence of grind marks on one side. This area was magnetically processed and etched with acid solutions. The following was restored: D C 1 0 2 F
9HEXCV	Examination of the submitted bar stock revealed the manufacturer's applied serial number to have been obliterated. Physical and chemical processing of the bar stock restored the obliterated, original serial number to read "DC102F".
9KZVKL	No complete or partial characters were recovered; therefore, results are inconclusive.
9LE7G7	The obliterated serial number on the piece of bar stock (Item 1) was magnetically processed and chemically restored to read "DC102F".
9TEL7D	Using physical and chemical restoration techniques, the obliterated serial number on Item 1 was restored to read the following: DC102F.
9UYQ8V	After Application of the electromagnetic and chemical process, I determined the serial number as DC102F.
9VUEJY	Upon analysis, I am opinion the obliterated serial number on "Item 1" bar stick was restored and interpreted as "DC102F".
9ZFX3B	Item 1 was examined and found to exhibit an obliterated area in the center of the bar stock. Polishing, magnetic particle inspection, and chemicals etching revealed the following serial number: DC102F.
A3EJNL	The obliterated serial number on the steel bar stock in Item #1 was completely restored and found to be D C 1 0 2 F.
A443XX	The alphanumeric sequence revealed in the piece of questioned aluminum identified as E1-20-0706 (Test No. 20-5250 Item 1) corresponds to "DC102F".
A7V6VY	The obliterated serial number on Item 1 was recovered and interpreted as "DC102F"
AAFRUE	The piece of steel was cleaned, polished and chemically processed to restore the obliterated serial number. The serial number DC102F was successfully restored.
ACKEDK	The serial number was partially restored to read D C 1 0 2 ? using chemical etching techniques.
AE7HM3	After polishing and etching the erased area I was able to read the following DC102F.

TABLE 2

WebCode	Conclusions
AVXZ9T	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1A, reveal the following partially restored number: D _ 1 0 2 F. The second character appears to be a C or a G. Item 1B was inspected to verify and document contents. No analysis was performed on the item listed.
AZ4R2X	The serial number "DC102F" was recovered from the piece of steel bar stock, identified Item 1.
B6VDAC	The examination and processing of the obliterated serial number on the Item 1 bar stock was restored to read "DC102F".
B7E3AK	The obliterated serial number on the piece of metal was restored: D C 1 0 2 F
B7P7EV	Mechanical and chemical processing was applied and the following characters were developed: D C 1 0 2 F
B9H24P	Using Magnetic Particle Inspection, the obliterated number on Item 1 was restored to reveal the serial number DC102F.
B9YZCG	The restoration revealed the following characters: D C 1 0 2 F
BCCWRQ	Based on the above examination and finding, I am of the opinion that the original serial number on the piece of alloy steel bar stock 'Item 1' is DC102F.
BCEK96	The obliterated serial number on Item 1 was restored as DC102F.
BD9GL6	Serial number restoration techniques were applied to the submitted bar stock (Item 1). The partially restored serial number was determined to be D***2F. The asterisks represent unrestored characters.
BG9M6G	THE OBLITERATED SERIAL NUMBER LOCATED ON THE FRONT MIDDLE OF THE STEEL BAR STOCK (ITEM 1) WAS POLISHED USING THE DREMEL AND CHEMICALLY PROCESSED TO READ DC102F.
BM3G7P	Item 1 was examined, and the obliterated number on Item 1 was polished, processed magnetically, and chemically restored to reveal the serial number DC102F.
BMJH87	Standard laboratory procedures for restoring serial numbers stamped in metal have been employed on the center of this piece of metal. The serial number was determined to be "DC102F".
BT97QH	RESULTS and INTERPRETATIONS: The serial number on the bar was restored to read: D C 1 0 2 F EXAMINATION: The serial number on the center of the bar had been obliterated. The bar was processed with magnetic techniques and chemical etchants.
BUXJ92	Item 1-1 Trace item – A piece of 4140 alloy steel bar stock with suspected obliterated serial number: Visual examination of this item revealed the presence of grind marks on one side of the steel bar stock. This area was magnetically processed and etched with acid solutions. The following was restored: D C 1 0 2 F
C7K38X	Upon electrochemical treatment on the filed surface, the number DC102F was restored. Based on my findings, i am of the opinion that DC102F was the original number stamped on the surface that was subsequently obliterated.
CFUBVQ	The serial number was restored to read as follows: DC1?2F. The "?" represents either a 0 or an 8.
CFXVZ8	Following a Magnetic Particle Inspection (MPI) and chemical restoration process, I restored the number on the alloy steel bar stock, identifying it as DC102F.
CG77J4	Examination and chemical processing of the obliterated serial number on item 1 (A) was restored and determined to be "DC102F".
CHKJC8	The serial number is milled off. The serial number (DC102F) was restored by the acid etching process. Polishing, Fry's reagent and Nitric Acid reagents were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. Disposition: This item will be held in the Firearm Section's Evidence Room

TABLE 2

WebCode	Conclusions
CHX8EU	Steel bar identified as Item 1 has an obliterated area. By restoration process the alphanumeric sequence DC102F was recovered.
CJX7W8	A Forensic procedure was performed on the machined area of the steel bar. A series of previously stamped characters was restored which read: DC102P. The question marked character was partially restored but could not be interpreted. The characters were similar in size and font as that used on the aluminium bar standard.
CLH6Y4	Serial number restoration techniques were applied to the submitted steel plate (Item 1). The serial number was determined to be DC102F.
CMVQJD	The Bar stock (1) was Physically and chemically processed. Its serial number was restored to read: DC102F
CQU2ED	The restoration techniques applied allowed to identify the previously obliterated serial number "D C 1 0 2 F".
CUWUXC	The obliterated serial number was restored to read DC102F.
CWLBXC	Results/Conclusions: 1) The serial number on the metal bar (Exhibit 1) was restored to be: DC102F.
CWX9UG	The serial number on Item 1 was restored to read D C 1 0 2 F using chemical etching techniques.
DA6FHD	The serial number on the 4140 alloy steel bar stock (Item 01-01) was fully restored as "DC102F."
DGHD4C	The restoration of the obliterated serial number revealed the 6 characters : DC102F
DJVVDA	Serial Number Restoration Analysis: Methodology:Physical(Visual Examination), Chemical(Reagent Etching/MPI), Microscopy(Stereo/Comparison Microscope). Serial number restoration procedures revealed the serial number on Item 1, the bar stock, to be: D C 1 0 2 F
DLVAJL	I found filing marks on the metal plate 'Item 1'. Upon electrochemical treatment on the filed surface, the number 'DC102F' was restored. Therefore, I am of the opinion that the obliterated serial number is 'DC102F'
DR4D4U	Item 1 was examined and found to have an obliterated area on the front side. Standard chemical restoration techniques were applied to Item 1 and the following characters were revealed: DC102F
DX9DXW	The serial number on item 1 was restored to DC102F.
DXRZWE	The serial number restoration process restored serial number: DC102F
DYA6ED	The serial number was restored to read D C 1 0 2 F.
EAZZ6D	Examination and restoration of the obliterated area on Item 1 (alloy steel bar stock) revealed the following characters interpreted as "DC102F". The reported results relate only to the item tested.
EYET3	Examination of Item 1 revealed an obliterated area. Standard chemical restoration techniques were applied to Item 1 and revealed the following characters: "DC102F".
EF9LXG	Using physical, magnetic, and chemical restoration techniques, the obliterated serial number on Item 1 was restored to read DC102F.
EFM8A4	The area of obliteration was mechanically polished and chemically etched fully restoring the serial number to: D C 1 0 2 F
EKVPAR	The serial number was fully restored to read 'DC102F'.
EM4T9A	The serial number on the piece of metal (Exhibit 01) was mechanically and chemically treated and restored to read DC102F.

TABLE 2

WebCode	Conclusions
EQGMVT	Items 1 (4140 alloy steel bar) and Item 2 (Aluminum standard) were photographed. The obliterated area of item 1 was sanded with 400 grit sandpaper and treated with Fry's chemical reagent, twice. After both treatment photographs were taken. After the second treatment the alpha-numeric combination was observed (DC102F). The alpha-numeric combination was photographed and viewed in Adobe.
EWTA6Q	Examination of the submitted alloy steel bar found that the serial number was obliterated. Physical and chemical processing of the submitted steel bar restored the serial number to read DC102F. This evidence will be returned to your agency for storage.
EXRBD4	Examination of the alloy steel bar (SNR1) indicated that the surface of the metal bar had been ground/milled. The ground metal bar was subjected to a restoration technique and I subsequently made a recovery of the characters 'D__0_F'. A partial recovery of possible further characters included 'DC10_F'. I formed the opinion that the characters 'D__0_F' had been originally stamped onto the surface of the alloy steel bar.
EZC9GZ	Serial number restoration techniques were applied to item 1. The serial number was determined to be DC102F.
F26KVV	Examination of Item 1 revealed an obliterated area. Standard restoration technique was applied to Item 1 and the following characters were restored: DC102F.
F2KY49	Examinations showed the serial number of Item 1 to be obliterated. The serial number of Item 1 was restored using mechanical polishing, magnetic, chemical etching techniques and found to read: DC102F.
F4ACLR	AFTER USE OF OUR STANDARD PROCEDURES FOR OBLITERATED SERIAL NUMBER RESTORATION WE FOUND THE FOLLWING NUMBER (LEFT TO RIGHT): DC102F
FCHXFM	Serial number restoration revealed the number D C 1 0 2 F.
FEN7Y7	ONE (1) 303 STAINLESS STEEL BAR STOCK 3-3/4" IN LENGTH, 1" WIDTH. SPIRAL ABRASION ON BAR WITH SUSPECTED OBLITERATED SERIAL NUMBER. CONCLUSION; SERIAL NUMBER RESTORED USING CHEMICAL ETCHING PROCESS. READS "DC102F" CTS #20-5250C SCRIBED ON BACK OF BAR STOCK BY EXAMINER FOR IDENTIFICATION PURPOSES.
FGXAV3	Using standard laboratory restoration techniques, the serial number on the steel bar was restored to DC102F.
FJ24EF	Serial number restoration revealed the number DC102F.
FKYCGX	The obliterated number stamped into Item 1 was restored to read DC102F
FMZF9K	The obliterated number on Item 1 was polished and magnetically processed to reveal the serial number DC102F.
FUDJ3Y	Serial number restoration was performed on item 1.1. The serial number DC102F was restored on item 1.1.
FYXCC8	Item 1 serial number was cleaned, polished, and processed with chemical etchants. Item 1 serial number was restored to read DC102F. An aluminum standard bearing alphanumeric characters was received and not analyzed.
G2JBF4	ITEM Q1- ONE (1) STAINLESS STEEL BAR STOCK 2-3/4" IN LENGTH & 1" WIDTH. SERIAL NUMBER BAR STOCK OLITERATED BY MACHINING TOOL, SPIRAL IMPRESSIONS OBSERVED IN AFFECTED AREAS. CONCLUSION: SERIAL NUMBER RESTORED USING MAGNETIC PARTICLE INSPECTION. RESTORED SERIAL # INDICATES "DC102F". CTS # SCRIBED ON BACK OF BAR STOCK FOR IDENTIFICATION PURPOSES.
G3MEEJ	The original number was grinded and have been restored, read as DC102F.

TABLE 2

WebCode	Conclusions
G4GZAV	Upon electrochemical treatment on the filed surface, the original serial number was restored and read as DC102F
G6W64N	Serial number restoration revealed the number DC102F.
GHL4UQ	The development process was carried out un the area where it was altered and it was altered and it was possible to restoration the alphanumeric sequence corresponding: DC102F
GXEUIT	The examination and chemical processing of the above item, revealed a full serial number, with sufficient characteristics to allow the Examiner to make a positive identification. The characters recovered are as follows, DC102F.
GZ3AD2	From Test No. 20-5250 Item 1: One piece of 4140 alloy steel bar stock, labeled SNR1, with suspected obliterated serial number. Results: Chemical serial number restoration was completed on Item 1. Serial number for item 1 is: D C 1 0 2 F
H7MVG7	The serial number on the piece of metal (Exhibit 1) was mechanically and chemically treated and restored to read DC102F.
HDKLZV	Serial number techniques were applied to the submitted metallic block Item 1. The serial number was determined to be: DC102F
HE6X8G	An area of obliteration was identified. Attempts were made to restore the obliterated number using magnetic restoration, polishing and chemical etching techniques. The serial number on the steel bar was restored and determined to be DC102F.
HG236T	[No Conclusions Reported.]
HMB77T	The obliterated serial number on the Item 1.1 piece of bar stock was partially restored to read D?102F, with the ? representing an unknown letter/number.
HP27LD	Item 1, One metal plate with an obliterated serial number on same. The Serial number was chemically restored and found to be "DC102F".
HP4VQA	CONCLUSIONS: THE OBLITERATED SERIAL NUMBER ON THE EVIDENCE PIECE OF 4140 ALLOY STEEL BAR, MARKED Q1, WAS FULLY RESTORED USING THE MAGNETIC PARTICLE INSPECTION METHOD (MAGNAFLUX) WHILE UTILIZING THE PREPARED BATH 7HF SPRAY SOLUTION. THE RESTORED SERIAL NUMBER IS AS FOLLOWS: DC102F.
HQBDQQ	1. Exhibit 1 is a ferromagnetic metal bar with an obliterated area. The bar overall has a length of 68.32 mm, width of 27.41 mm, and height of 6.90 mm. The obliterated area on the bar has a length of 25.10 mm, width of 27.40 mm, and a height of 6.61 mm. 2. The obliterated area has toolmarks consistent with a grinding type of tool. 3. Standard serial number restoration techniques were used to recover the serial number "DC102F". 4. All measurements are approximate.
HXE8TY	As a result of this examination, 6 characters were restored being: DC102F
HYBHYA	The restoration process allowed us to reveal the following serial number : "DC102F".
J4DZKF	The obliterated area on the piece of alloy steel bar stock in item 1 was chemically etched and the serial number was determined to be DC102F.
J8YNB9	Restoration of the obliterated serial number was performed on the questioned surface of the metal bar stock marked "Item 1". The restored serial number was found to have six characters - "DC102F".
JCAUKY	[No Conclusions Reported.]
JCUJU8	We have proceeded in the serial number restoration on the steel plate found in Sample Pack SNR 1. The restored serial number is : DC402F There is a slight uncertainty wether the 3rd digit is a '4' or a '1', but much likely a '4'.

TABLE 2

WebCode	Conclusions
JF8GAG	On analysis, i found there was a filling mark on the surface of the steel bar. On electrochemical treatment on the filled surface region, i found a number DC102F. Hence, i am of the opinion that the number of the steel bar was tempered and the original number was DC102F.
JUVCQ8	The serial number was restored to read DC102F.
K276A2	Item 1A, Item 1B: A serial number restoration was attempted using chemical etching techniques on Item 1A. The characters were observed as DC102F. Item 1B was not examined.
K9Q2HX	The area of obliteration was polished with a Dremel wheel then subjected to a series of magnetic and chemical etching tests. The obliterated serial number was fully restored to read : D C 1 0 2 F
KQLRB7	Exhibit 1 was processed with serial number restoration techniques and the following was developed in the ground area "DC102F"
KTT8BW	The serial number of the piece of alloy steel, Item 1, was determined to be: D C 1 0 2 F.
KV24A8	CONCLUSIONS: THE OBLITERATED SERIAL NUMBER ON Q1, 4140 ALLOY STEEL BAR STOCK WAS RESTORED USING THE MAGNETIC PARTICLE INSPECTION (MAGNAFLUX) TECHNIQUE. THE RESTORED SERIAL NUMBER READS AS FOLLOWS: DC102F.
L7XPVW	The obliterated serial number on Item 1 was located in the middle of the steel bar. This area was magnetically and chemically processed and the serial number was fully restored to read: DC102F ("0" is a zero).
L89G3R	The defaced serial number of the bar stock, item 1, was physically, magnetically and chemically processed to read: "DC102F".
L97ZRZ	Serial Number Restoration Analysis: Methodology: Physical (Visual Examination, Sanding/Polishing), Microscopy (Comparison Microscope), Chemical (Reagent Etching). Serial number restoration procedures revealed the serial number on Item 1, the bar stock, to be: DC102F
LFG3WN	The alphanumeric sequence recovered in the metal part is DC102F.
LFLKTR	The serial number of Item 1 was restored to read "DC102F."
LML384	Chemical restoration on the alloy steel bar stock revealed the serial number to be DC102F. The Aluminum standard was used for character reference. The evidence will be retained in the Firearms Property Room.
LXLHBM	Standard laboratory procedures for restoring serial numbers stamped in metal have been employed on the center of this slab. The serial number was determined to be DC102F.
MDADYX	ONE (1) BLOCK OF SILVER FERROUS METAL MEASURING APPROXIMATELY 2 3/4" LONG X 1" WIDE X 1/4" THICK DISPLAYING A 1" X 1" AREA MILLED AWAY. SERIAL NUMBER DC102F RECOVERED WITH CHEMICAL ETCHING. ITEM MARKED 20-5250A FOR IDENTIFICATION. CTS TEST NUMBER ETCHED ON BACK FOR IDENTIFICATION.
MFV7MK	The surface in the metal piece was determined obliterated. After the analysis analphanumeric sequence was revealed concordant with the characteristics evaluated in the comparative material
MGLAD8	One Piece Of 4140 Alloy Steel Bar Stock: RESULTS: Examination of Item 1 revealed the presence of a defaced area. Item 1 was physically, chemically, and magnetically processed. The serial number was restored as: DC102F
MK8ZU4	The examination of the submitted sample of a metal piece with a removed six-digit stamped serial number was carried out by etching procedures using the acid solutions "Oberhoffer" and "Meyer-Eichholz". By this process the number/letter combination "DC102F" could be made visible. The used etching agents: Oberhoffer: 15 g FeCL3; 0.5 g CuCl2; 0.25 g SnCl2; 250 ml H2O; 250 ml Ethyl alcohol 96%; 25 ml HCl 32%. Meyer-Eichholz: 20 g FeCl3; 20 g CuCl2; 100 ml H2O; 30 ml HCl 32%

TABLE 2

WebCode	Conclusions
MMKEKX	The obliterated surface on the steel bar stock (Item 1) was sanded and chemically processed. All characters could have been seen during the examination, but not all at the same time. Some have been visible later than other ones.
MN789L	The alphanumeric sequence of the piece of metal was determined altered. After the analysis, the sequence according to the characteristics evaluated in the comparative material was revealed.
MUEKDY	The defaced serial number of Item 1 was physically, magnetically and chemically processed to read: "D C 1 0 2 F".
MVB7VW	The serial number on the bar stock Item 1 had been removed by a milling type machine. An examination showed the serial number to be DC102F.
MY67UZ	The examination and processing of the obliterated serial number on the Item 1 bar stock was restored to read "DC102F".
MYQGT9	Using standard restoration techniques, the obliterated serial number on item 1 was restored to read: "D C 1 0 2 F".
N46FYZ	Exhibit 1 was examined with mechanical, magnetic and chemical methods. The obliterated serial number was restored to be: D C 1 0 2 F
NDPWJU	ITEM #1: (Q1) ONE (1) BLOCK OF SILVER NON FERROUS METAL MEASURING APPROXIMATELY 2 3/4" LONG X 1 1/16" WIDE x 1/4" THICK. DISPLAYING A 1" X 1 1/16" AREA MILLED AWAY (ABRADED). SERIAL NUMBER DC102F RECOVERED THROUGH CHEMICAL ETCHING. ITEM #1 (Q1) MARKED 20-5250H THROUGH SCRIBING FOR IDENTIFICATION PURPOSES.
NDQJ7Z	Using standard physical and chemical restoration techniques, the obliterated serial number on Item 1 was restored to read "DC102F."
NH2UW9	The obliterated serial number on item 1 was restored and found to consist of six alphanumeric characters, as follows; D-C-1-0-2-F.
NJWHBX	I found filing marks on the metal plate 'Item 1'. Upon electrochemical treatment on the filed surfaced, the number 'DC102F' was restored. Therefore, I am of the opinion that obliterated serial number is 'DC102F'.
NNMLA4	The serial number on the item was restored to read "DC102F" using chemical etching techniques.
NRRBR6	After a visual inspection, the area where the serial number had been removed was determined to be magnetic. The area was subjected to sanding with a sanding drum on an electric Dremmel tool and hand sanding/polishing with varying grades of wet/dry sandpaper. The area was then treated with: -Turner's Solution -Davis' Solution -Fry's Solution -10% Nitric Acid -25% Nitric Acid -Ferric Chloride Solution -Acidic Ferric Chloride Solution -10% Sodium Hydroxide -Davis' Solution -Fry's Solution. Photographs were taken during the processing. A partial serial number was recovered. The partially restored serial number was: DC10?F. ?=unknown character/possible 2.
NXCH64	SERIAL NUMBER RESTORATION PROCESS CONSISTING OF THE USE OF A DREMEL TOOL AND MAGNETIC METHODS RESTORED SERIAL NUMBER: DC102F.
P2WMH8	The obliterated serial number on the metal bar, item 1, was restored to DC102F.
P6CDM3	The obliterated area was treated using mechanical and chemical methods. The restored six character serial number appeared to be DC1021.
PJ636R	Attempts to determined what the serial number may be included sanding, polishing and the use of magnetic particle inspection and etching solutions. The serial number for the piece of 4140 alloy steel bar stock was determined to be DC102F.
PKGQUX	The obliterated serial number has been restored and it can be read as: DC102F
PLV6BF	C*6

TABLE 2

WebCode	Conclusions
PQN94J	With forensic examination it was achieved full serial number restoration. This examination number is DC102F.
PUW9UK	1. Examination of Exhibit 1 revealed a metal bar with an obliterated area in the approximate center. Standard serial number restoration techniques were used to restore the characters which appeared as follows: D C 1 0 2 F.
PV2XTM	Serial number restoration techniques were applied to the submitted piece of metal (Item #1). The serial number was determined to be DC102F.
PY23FF	Alphanumerics sequence "DC102F" was restored in the disturb area of the object identified as E1-20-0708.
Q8BX3L	[No Conclusions Reported.]
Q8FCEL	The Exhibit 1 obliterated serial number was magnetically and chemically processed and restored to read "DC102F".
QDHJUP	Examination of Item 1 revealed an obliterated area. Standard chemical restoration techniques revealed the following characters: DC102F
QHDDP6	The serial number on the metal block was restored to read DC102F using chemical etching techniques.
QL8CZU	ONE (1) ALUMINUM BAR STOCK, MEASURING APPROXIMATELY 2 3/4" LONG X 1" WIDE, DISPLAYING A 1" X 1" AREAL MILLED AWAY. "SERIAL NUMBER" OBLITERATED (ABRASION). MAGNETIC PARTICLE INSPECTION AND CHEMICAL RESTORATION TECHNIQUES RESULTED IN A FULL RESTORATION "DC102F". ITEM #1 WAS SCRIBED "CTS 20-5250B" FOR IDENTIFICATION.
QQJ9E4	Serial number restoration revealed the number DC102F.
QRDUBF	A six digit alphanumeric serial number was successfully restored by chemical treatment to read: D C 1 0 2 F
QXAAAN	Serial number restoration techniques were applied to item 1 (steel bar stock). The serial number was determined to be D C 1 0 2 F.
QXF4EM	The serial number on Item 1 was restored to DC102F
QYL6UV	The submitted specimen marked Item 1 was examined and identified as one (1) piece of 4140 alloy steel bar stock with a suspected obliterated serial number. The Item 1 obliterated serial number, located on the piece of bar stock, was chemically processed and restored to read "DC102F".
R4CWLP	The obliterated serial number of the Lab ITEM # 1 - Serial Number Restoration was located on the top center of the sample. This area was polished, magnetically and chemically processed and the serial number was fully restored to read: DC102F
R7B99N	Using a combination of mechanical and chemical restoration techniques, the serial number was fully restored to read: D C 1 0 2 F.
R8N3L4	Examination and chemical processing restored the obliterated serial number, which was determined to be "DC102F".
RE88RB	Examination of the Item 1 submitted steel bar stock found the serial number to have been obliterated. Physical processing of the submitted Item 1 steel bar stock restored the obliterated, original serial number to read "DC102F".
RGF6GL	The Item 1.1 stainless steel bar stock has an area of obliteration. This area was polished followed by the chemical etching technique. The obliterated serial number of Item 1.1 was restored using chemical etching to read DC102F. The restored information is similar in design and size to the provided aluminum standard, Item 1.2.

TABLE 2

WebCode	Conclusions
RJKRYW	The item 1 (LIMS #1-1-1) bar stock with obliterated area was examined and processed using standard serial number restoration techniques. The serial number was restored to read: DC102F.
RKTY66	The obliterated area on the piece of 4140 alloy steel bar stock in item 1 was chemically etched and the serial number was determined to be DC102F.
RKVUKV	Item 1: The area of obliteration on the piece of metal was restored to read: DC102F, after using chemical etching techniques.
RKXG29	Item 1 was microscopically examined. The obliterated number on Item 1 was polished and processed magnetically to reveal the serial number DC102F.
RP72TM	I used Magnaflux, abrasives, and chemical etchants to restore the serial number to DC108F.
RU7W7V	The serial number on Item 1 was restored to read DC102F using chemical etching techniques.
RY9EUM	Serial number restoration was performed on the piece of metal. The serial number DC108F was restored.
T2YQGY	THE SERIAL NUMBER RESTORATION PROCESS ON THE ITEM 1 PIECE OF 4140 ALLOY STEEL BAR STOCK RESTORED THE SERIAL NUMBER: D0108F
T44C97	The obliterated serial number on Item 1 was polished and chemically restored to reveal the serial number DC102F.
T4ZQKC	In the piece of metal sent as questioned element and identified as E1-2020-0710 (Item 1), it was possible to recover through the restoration process, the following alphanumeric sequence: DC102F.
TAULJ4	Examination of Item #1 revealed one (1) portion of metal bar stock approximately 2 9/16 inches long, 1 1/16 inches wide, with serial number obliterated. Using physical and chemical restoration techniques, an attempt was made to restore the serial number on Item #1 with the following results: Serial Number: D C 1 0 2 F was restored to Item #1.
TBQ774	A serial number restoration was attempted on item [Participant Code] using chemical etching techniques and magnetic particle inspection. The serial number was partially restored to read D?102F.
TL62JG	The obliterated serial number of Item 1 was restored to read DC102F.
TUGCJV	the serial numbers restore to read :DC102F
TYUVZG	Standard restoration techniques revealed the following characters: D C 1 0 2 F.
U2UQWP	As a result of an attempted obliterated number restoration the following characters were observed: DC102F.
U3NBQC	The restoration procedure was applied to the steel bar and the alphanumeric sequence DC102F was obtained
U6DLYH	1. The obliterated area on the Exhibit 1 metal block was processed using magnetic particle reagent and chemical etching. The characters were restored to read: D C 1 0 2 F.
U6VUNC	A piece of steel bar stock (Item 1) was examined and noted to possess a recessed area with a possible obliterated serial number. The serial numbered area may have been excessively obliterated, however the following possible serial number sequence was recovered using physical, chemical and magnetic techniques: DC192F.
U98VDN	[No Conclusions Reported.]
UHMGBT	Examinations showed the serial number of Item 1 to be obliterated. The serial number was restored using mechanical polishing and chemical etching techniques. The serial number was found to be: DC102F.

TABLE 2

WebCode	Conclusions
UMC3HL	Serial number restoration techniques were applied to Item 1 (Flat metal bar stock). The serial number was determined to be DC102F.
URT44T	Chemical restoration of number on stainless steel sample. Start time : 15:00:00. Finish time : 15:15:00. Characters stamped : DC102F
UT36XE	The restoration process was carried out in alloy steel bar, in the area where it was altered and the sequence "DC102F" was restored
UTXVUK	Serial number restoration techniques were applied to the piece of metal bar stock (Item 1). The serial number was determined to be DC102F.
UXWZXQ	The serial number had been erased. I was able to restore the serial number which read DC102F.
UZLEEN	Examination and chemical restoration of the obliterated area on Item 1 revealed the following characters interpreted as "DC102F".
V8CAKX	The serial number was restored to read DC102F using chemical etching techniques.
VBBQWR	Using magnetic and chemical methods, the obliterated serial number located on the face of Item 001, was partially restored to read DC1*2F. The asterisk represents either a 0 or an 8.
VDLHCM	Silver barstock, ferrous, measuring 2 - 3/4" by 1 - 1/8". Serial number is obliterated. No characters visible as received. Restoration techniques resulted in a full recovery. The serial number was recorded as "DC102F". CTS number scribed on reverse for identification. Note: Methods used were both Magnetic Particle Inspection and Chemical Etching.
VF8B2B	Regula 7505M, Magnetic Tape, Regula 7515M and NUCA Software have been used to find the result
VGKT9M	Item Q1 is one (1) tan coin envelope containing one (1) piece of metal bar stock of approximately 2 3/4"L x 1/4"W x 1"H with suspected obliterated serial number on center portion. Case# scribed onto back of bar stock by examiner for identification purposes. CONCLUSIONS: The obliterated serial number was chemically processed and restored to read "DC102F".
VGYZB8	Serial restoration testing was performed on item "test 20-5250" and the following alpha numerical code was observed "DC102F".
VHHEPK	The area of the obliterated serial number was polished and chemical etchants applied. This resulted in the digits DC102F being restored.
VK3DTG	The item is a piece of steel bar stock with suspected obliterated serial number. Laboratory chemical restoration procedures revealed the following serial number: DC102F. The item will be forwarded to the "Proficiency Test Long Term Storage".
VN6AKX	The obliterated serial number of the submitted steel bar stock, Item 1, was determined to be DC108F.
VNF8G2	The above listed defaced serial number was chemically restored to read DC102F.
VTDQKK	The serial number of the 4140 alloy steel bar stock, Exhibit 1, was determined to be D C 1 0 2 F.
VX4ZUJ	The obliterated serial number was restored to read: D C 1 0 2 F
W8ZWVT	Number restoration techniques revealed a line of characters in this area. These were "D ? ? ? ? F". Partial characters were observed in the areas represented by the "?"; however, the form of each character was not able to be verified.
WAYD2V	The serial number of the Item 01-01 steel bar was recovered to read "D C 1 0 2 F".
WC46T9	The obliterated serial number was partially restored to read DE??05, where ? denotes unknown characters.
WPVPFQ	The serial number was restored and read D C 1 0 2 F.

TABLE 2

WebCode	Conclusions
WQ27FH	The serial number on Item 1 was restored to read D C 1 0 2 F using chemical etching techniques. The "Aluminum Standard" was not further examined.
WTDPUL	Item 1, the bar of alloy steel, was examined noting an obliterated/machined area in the middle of the bar. Using standard restoration techniques, the number DC102F was restored.
WXN3BK	Item 1 is one (1) 4140 alloy steel bar stock submitted with suspected serial number obliterated. The serial number was restored to read: DC102F using magna flux.
WYDD3D	The serial number on Submission 001 as restored is DC102F.
WZXPAY	The serial number of Item 001 was mechanically, magnetically, and chemically processed and restored to read "DC102F". This is also the opinion of Firearms Examiner [name].
X2Z9CY	Examination and magnetic and chemical processing of [Laboratory] Item 1 restored the original obliterated serial number which was determined to be DC102F.
X437K7	Serial number restoration revealed the number D C 1 0 2 F.
X7VV88	The obliterated serial number on the metal bar was restored to read: D C 1 0 2 F
XU2JTA	The alphanumeric sequence revealed in the evidence identified as E1-20-0713 is DC102F.
XX2PE7	Regula 7505M, Magnetic Tape, Regula 7515M and NUCA Software have been used to find the result
XXMCWP	After an preliminary magnetic investigation method, the obliterated serial number has been restored by using sandpaper and acid (Fry and Wazau). Finally a thermal restoration method was used, but brought no further insights. The second character could not be determined exactly, because of too low expression. It could be either "C" or "0" or Maybe "6".
Y9F9HM	Using standard laboratory physical and chemical restoration techniques, the serial number on Item 1 was partially restored to read DC1*2F. The fourth character could be either a 0 or an 8.
YARU8P	The serial number on Item 1 was mechanically and chemically treated and restored to read: DC102F.
YAVMRH	Multiple serial number restoration techniques were applied to the milled surface of Sample Pack SNR1. As a result a partial recovery of a previously stamped serial number D C _ _ _ F was obtained. (The symbol '_' represents an unrecoverable or undecipherable alpha-numeric character). This recovery appeared consistent with the alpha-numeric characters supplied stamped into the aluminium standard.
YBKXHB	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1A, reveal the following partially restored number: D _ _ _ F Item 1B was inspected to verify and document contents. No analysis was performed on the item listed.
YCDNWC	Examination and restoration of the obliterated area on the steel block (Item 1) revealed the serial number DC102F.
YK9W8V	THE SURFACE OF Q1 (ITEM 1) 4140 ALLOY STEEL BAR STOCK WAS POLISHED UTILIZING A DREMEL TOOL TO PREPARE IT FOR THE APPLICATION OF CHEMICAL ETCHING SOLUTIONS. THE NUMBER RESTORED BY THIS SERIAL NUMBER RESTORATION PROCESS READS: DC102F
YKVZ4C	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1, reveal the following number: DC102F.
YN84LD	The above number was obliterated through mechanically obliterated of metal surface from serial number field.
YTMHHK	The serial number is milled off. The serial number (DC102F) was restored by the acid etching process. Polishing, Fry's reagent and Nitric Acid reagents were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. Disposition: This item will be held in the Firearm Section's Evidence Room

TABLE 2

WebCode	Conclusions
YTP9P3	Visual examination and chemical treatment of the serial number area on the metal bar stock, Item 1A, reveal the following number: DC102F. Item 1B was inspected to verify and document contents. No analysis was performed on the items listed.
ZFUFHY	The Bar Stock (1) was physically/chemically processed. Its Serial Number was fully restored to read: DC102F
ZHWP33	Examination and chemical processing of the firearm listed as item #1 restored the original obliterated serial number which was determined to be "DC102F".
ZUFTVY	The obliterated number on Item 1 was sanded and chemically restored to reveal the serial number: DC102F.
ZWJQXE	Serial number restoration techniques were applied to Item 1 (metal plate). The serial number was determined to be DC102F.
ZWZYWG	Fry,s and Turner,s reagents were used to restore the obliterated serial number

Sample Preparation

(listed in order of use)

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
28GMZG	Polishing	Sand paper	Fine
	Polishing	Rotary Tool	Buffing wheel
28YVQW	Sanding	Sand paper	400 grit
2A2R2Y	None		
2FVHNM	Sanding	Steel wool	120/80
2GPGWU	Sanding	Sand paper	150, 220, 400, 600
2LW2N8	Polishing	Dremel	
2W99K8	Polishing	Sand paper	1000
2X7KEF	Sanding	Sand paper	Fine
	Polishing	Rotary Tool	Buffing Wheel
2XNMU3	Sanding	Dremel	600
	Polishing	Dremel	
2YFNTY	Sanding	Dremel	Buff Wheel
	Polishing	Dremel	
34HLJJ	Sanding	Sand paper	120
	Polishing	Dremel	
34UMYQ	Sanding	file	
	Sanding	Sand paper	150, 220
	Polishing	Sand paper	400, 600
369WAC	Cleaning	Acetone	
	Polishing	Dremel	#500 Medium Soft
38DG3J	Polishing	Dremel	
39JZRE	Polishing	Dremel	
3J6B9K	Polishing	Rotary Tool	
3VLVU3	Visual	Stereoscope	
	Polishing	Stereoscope	
3YJC9H	Polishing	Dremel	

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
42LUHX	Polishing	Dremel	N/A
44NTJP	Visual	Stereoscope	
	Sanding	Sand paper	P80, 100C
46ZKGD	None		
47RLC3	Sanding	Sand paper	220
	Polishing	Sand paper	1000
48C7JL	Polishing	Dremel	
4BLDRC	Polishing	Dremel	
	Polishing	Sand paper	320 & 4/0
4ERP2Y	Polishing	Dremel	---
	Sanding	Sand paper	Fine
4FPZUG	Visual	Stereoscope	
	Sanding	Sand paper	240 grit
	Polishing	Steel wool	
	Grinding	Dremel	
4GUPV6	Polishing	Rotary Tool	
4MPFKP	Polishing	Dremel	Extra fine 240 grit Cratex wheel
686JFC	Polishing	Dremel	
	Polishing	Polishing Wheel	
68Z43C	Polishing	Dremel	
6E8DUE	Sanding	Sand paper	220; 1200; 2000
6H9EXG	Sanding	Sand paper	Fine
	Sanding	Steel wool	
6P9UL4	Visual		
	Polishing	Dremel	
6PJRKT	Sanding	Sand paper	medium
6U77PG	Polishing	Sand paper	30 micron
739WJ4	Polishing	Dremel	

TABLE 3

Sample Preparation			
<u>WebCode</u>	<u>Method</u>	<u>Tool Used</u>	<u>Grit Size</u>
77LQ8M	Visual	Stereoscope	
	Sanding	Sand paper	320 grit
	Grinding	Dremel	
7BZJ68	Visual	Stereoscope	
	Visual	Microscope	
	Visual	Digital Camera	
	Sanding	Sand paper	P320 & 150C
7FN9HQ	Polishing	Rotary Tool	
7GZ7R2	Sanding	Sand paper	220, 360, 400, 600.
7HHW2L	Visual	Stereoscope	
	Sanding	Sand paper	P80, P320
	Polishing	Steel wool	
7KCKWN	Polishing	Dremel	ExFine
7LLPBC	Visual	Microscope	
	Polishing	Rotary Tool	
	Sanding	Emery paper	
	Polishing	Rotary Tool	
7N9DLC	Sanding	Sand paper	FINE
7R42B7	Sanding	Sand paper	Wet and dry paper, 120, 240, 400
7RJKTH	Cleaning	Acetone	
	Polishing	Sand paper	200
	Polishing	fiberglass sander	
7TYR8D	Polishing	Rotary Tool	
7VKKVZ	None		
7ZNYEL	Polishing	Dremel	
8A9PEH	Sanding	Power sander	60, 240
	Sanding	Sand paper	600, 1200
8EWER2	Polishing	Dremel	
8F98D3	Polishing	Dremel	-----
8N67XP	Polishing	Dremel	

TABLE 3

Sample Preparation			
<u>WebCode</u>	<u>Method</u>	<u>Tool Used</u>	<u>Grit Size</u>
8PW4BM	Visual	Stereoscope	
	Sanding	Sand paper	P400
	Polishing	Dremel	
8RDMXD	Sanding	Dremel	120
	Polishing	Dremel	
8Y2ATH	Visual	Microscope	
	Polishing	Dremel	Fine
92RMHF	Polishing	Dremel	
98CXDW	Polishing	Dremel	fine
99NGGZ	Polishing	Steel wool	
9DXNQQ	Visual	magnifying glasses	Nil
9EQNW3	Polishing	Dremel	
9EV4A4	Visual	Stereoscope	
9HEXCV	Polishing	Dremel	N/A
9KZVKL	Visual	Stereoscope	
	Sanding	Sand paper	Various
	Sanding	Dremel	Various
9LE7G7	Visual		
	Polishing	Dremel	425 Wheel
9TEL7D	None		
9UYQ8V	Sanding	Sand paper	120 & 180
	Polishing	Dremel	
9VUEJY	Cleaning	Acetone	
9ZFX3B	Polishing	Dremel	
A3EJNL	None		
A443XX	Sanding	Sand paper	220
A7V6VY	Sanding	Rotary Tool	Medium
AAFRUE	Sanding	Sand paper	320
ACKEDK	Sanding	Dremel	220 Grit

TABLE 3

Sample Preparation			
<u>WebCode</u>	<u>Method</u>	<u>Tool Used</u>	<u>Grit Size</u>
AE7HM3	Visual	Stereoscope	
	Polishing	Sand paper	400, 600, 1200 grit
AVXZ9T	Sanding	Sand paper	220
AZ4R2X	Sanding	Sand paper	80, 220 and 400
B6VDAC	Sanding	Dremel	400
B7E3AK	Visual	Stereoscope	
	Sanding	Sand paper	P600
	Polishing	Dremel	
B7P7EV	Visual	eyes	
	Visual	Stereoscope	
	Sanding	Sand paper	various
B9H24P	None		
B9YZCG	Visual	Stereoscope	
	Sanding	Dremel	120
	Sanding	Sand paper	220, 1500, 2000
BCCWRQ	None		
BCEK96	Visual	Physical Observation	
BD9GL6	Polishing	Dremel	
BG9M6G	None	Dremel	
BM3G7P	None		
BMJH87	Visual	Stereoscope	
	Polishing	Dremel	
BT97QH	Polishing	Dremel	
BUXJ92	Visual	Stereoscope	
C7K38X	Cleaning	Acetone	-
CFUBVQ	Sanding	Dremel	unknown
CFXVZ8	Visual		

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
CG77J4	Visual		
	Polishing	Dremel	
	Sanding	Emery paper	Microgrit (30um)
CHKJC8	Polishing	Rotary Tool	Buffing wheel
CHX8EU	Cleaning	Acetone	
	Polishing	Sand paper	200 and 400
CJX7W8	Polishing	Emery paper	400, 800 and 1200 grit.
CLH6Y4	Visual	magnaflux Y-7 magnet	Magnaflux was applied prior to any surface preparation (polishing)
	Polishing	Dremel	The milling marks were polished using the polishing wheel
CMVQJD	Sanding	Sand paper	200
CQU2ED	Cleaning	Acetone	
	Polishing	Steel wool	
CUWUXC	Polishing	Dremel	
	Cleaning	Methanol	
CWLBXC	Visual	low magnification	
	Polishing	Dremel	dark red wheel
CWX9UG	Visual	Stereoscope	
	Sanding	Sand paper	medium and fine
DA6FHD	Polishing	Dremel	
DGHD4C	Visual	naked eyes	
	Polishing	Sand paper	80
	Polishing	Sand paper	600
	Cleaning	Ethanol	
	Visual	naked eyes	
DJVDA	Visual		
DLVAJL	Cleaning	Acetone	
DR4D4U	Visual	Magnifying Glass	
	Polishing	Dremel	Polishing Wheel

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
DX9DXW	None		
DXRZWE	Polishing	Dremel	
DYA6ED	Polishing	Sand paper	120 & 320 grit
EAZZ6D	Visual	Stereoscope	
	Polishing	Dremel	240 grit
EEYET3	Polishing	Dremel	
EF9LXG	Visual		
	Polishing	Dremel	320
EFM8A4	Polishing	Dremel	
EKVPAR	Polishing	Dremel	N/A
EM4T9A	Polishing	Dremel	
EQGMVT	Sanding	Sand paper	400
EWTA6Q	Visual	Stereoscope	
	Polishing	Dremel	
EXRBD4	Visual	Microscope	
	Sanding	Sand paper	600 + 400
EZC9GZ	Polishing	Dremel	
F26KVY	Visual	Stereoscope	
F2KY49	Visual	Stereoscope	
	Polishing	Dremel	
F4ACLR	Polishing	Dremel	Sic 120 Grit
FCHXFM	Visual	Stereoscope	
	Cleaning	Acetone	
FEN7Y7	Polishing	Rotary Tool	
FGXAV3	Sanding	Sand paper	220
	Polishing	Sand paper	400
FJ24EF	Grinding	Rotary Tool	
FKYCGX	Polishing	Dremel	500

TABLE 3

Sample Preparation			
<u>WebCode</u>	<u>Method</u>	<u>Tool Used</u>	<u>Grit Size</u>
FMZF9K	Polishing	Rotary Tool	
	Cleaning	Magnaflux solvent	
FUDJ3Y	Polishing	Dremel	
FYXCC8	Visual	Stereoscope	with MagnaFlux
	Polishing	Dremel	400 grit
G2JBF4	Polishing	Dremel	
G3MEEJ	Cleaning	Acetone	
G4GZAV	Cleaning	Acetone	
G6W64N	Visual	Eyes	
GHL4UQ	Sanding	Sand paper	80-220
GXEUUT	Polishing	Dremel	
GZ3AD2	Visual	Stereoscope	
	Polishing	Dremel	
H7MVG7	Polishing	Dremel	
	Cleaning	Water	
HDKLZV	Polishing	Dremel	
HE6X8G	Visual	Stereoscope	
	Polishing	Dremel	
HG236T	Visual		
HMB77T	Visual	Stereoscope	
	Polishing	Dremel	
HP27LD	Grinding	Rotary Tool	
HP4VQA	Polishing	Dremel	
HQBDQQ	Polishing	Dremel	
HXE8TY	Cleaning		
HYBHYA	Polishing	Emery paper	
J4DZKF	Polishing	Dremel	425
J8YNB9	Polishing	Sand paper	Various grit sizes were used (100, 360, 1000)

TABLE 3

Sample Preparation			
<u>WebCode</u>	<u>Method</u>	<u>Tool Used</u>	<u>Grit Size</u>
JCAUKY	Polishing	Ethanol	
JCUJU8	Sanding	Rotary Tool	500
JF8GAG	Visual	Microscope	
JUVCQ8	Polishing	Dremel	
K276A2	Visual	Stereoscope	
	Cleaning	Acetone	
K9Q2HX	Polishing	Dremel	
KQLRB7	Polishing	Dremel	
KTT8BW	Sanding	Sand paper	
	Polishing	Steel wool	
KV24A8	Polishing	Dremel	
L7XPWW	None		
L89G3R	Polishing	Dremel	
L97ZRZ	Polishing	Emery paper	2000
LFG3WN	Polishing	Sand paper	400
LFLKTR	Cleaning	Acetone	
	Visual	Stereoscope	
	Sanding	Sand paper	220
	Polishing	Sand paper	600
LML384	Polishing	Sand paper	
LXLHBM	Visual	Stereoscope	
	Polishing	Dremel	
MDADYX	Polishing	Rotary Tool	
MFV7MK	Visual		
	Sanding	Sand paper	400 and 600
MGLAD8	Polishing	Dremel	unknown

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
MK8ZU4	Visual	electro-magnetic visual inspection	
	Grinding	File	
	Sanding	Emery paper	P100 and P400
	Polishing	Dremel	Polish paste 1000
MMKEKX	Sanding	Sand paper	P400
MN789L	Visual		100 and 600
	Sanding		
MUEKDY	Polishing	Dremel	
MVB7VW	Polishing	Emery paper	Fine
	Polishing	Rotary Tool	
	Visual	Stereoscope	
MY67UZ	Visual		
MYQGT9	Polishing	Dremel	
	Sanding	Sand paper	600
N46FYZ	Polishing	Dremel	
NDPWJU	Visual	Stereoscope	
	Polishing	Dremel	
NDQJ7Z	Visual	Stereoscope	
NH2UW9	Sanding	Emery paper	600
NJWHBX	Cleaning	Acetone	
NNMLA4	Visual	Stereoscope	
	Sanding	Sand paper	fine
NRRBR6	Visual		
	Grinding	Dremel	
	Sanding	Sand paper	course/medium
	Polishing	Sand paper	fine
NXCH64	Polishing	Dremel	
P2WMH8	Visual		
	Polishing	Dremel	

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
P6CDM3	Sanding	Dremel	
	Polishing	Dremel	Rubberized Cratex Tip
	Polishing	Steel wool	
PJ636R	Sanding	Sand paper	180 & 320
	Polishing	Rotary Tool	
PKGQUX	Polishing	Rotary Tool	
	Sanding	Sand paper	600
PLV6BF	Cleaning	Acetone	
PQN94J	Sanding	grit paper	510
PUW9UK	Polishing	Dremel	
PV2XTM	Visual		
	Polishing	Dremel	
PY23FF	Sanding	Sand paper	1000
Q8BX3L	Polishing	Dremel	Steel wool
Q8FCEL	Visual	Stereoscope	
	Polishing	Rotary Tool	
QDHJUP	Polishing	Dremel	
QHDDP6	Visual	Stereoscope	
QL8CZU	Polishing	Rotary Tool	
QQJ9E4	None		
QRDUBF	Polishing	Rotary Tool	
	Cleaning	Acetone	
QXAAAN	Visual	Stereoscope	No characters observed
	Polishing	Rotary Tool	No characters observed
QXF4EM	None		
QYL6UV	Polishing	Steel wool	
R4CWLP	Visual		
	Polishing	Dremel	

TABLE 3

Sample Preparation				
WebCode	Method	Tool Used	Grit Size	
R7B99N	Sanding	Dremel	120	
	Sanding	Sand paper	320	
	Sanding	Sand paper	600	
R8N3L4	None			
RE88RB	Polishing	Dremel	N/A	
RGF6GL	Visual	Stereoscope	n/a	
	Polishing	Dremel	Coarse grit	
	Polishing	Dremel	Extra-fine grit	
	Polishing	Buffer	n/a	
RJKRYW	Polishing	Dremel		
RKTY66	Visual	Stereoscope		
	Polishing	Dremel	#425 polishing wheel	
RKVUKV	Visual	Stereoscope		
	Sanding	Sand paper	Fine 150 grit	
RKXG29	Visual	Stereoscope		
	Polishing	Dremel		
RP72TM	Sanding	Sand paper	320, 400, 600	
	Polishing	Rotary Tool		
	Visual	Stereoscope		
RU7W7V	Visual	Stereoscope		
	Polishing	Dremel		
RY9EUM	None			
T2YQGY	Visual	Eye Loupe		
	Polishing	Dremel		
T44C97	Polishing	Dremel		
	Polishing	Sand paper	220	
T4ZQKC	Sanding	Sand paper	220,400	
	Polishing	Sand paper	1000	
TAULJ4	None			
TBQ774	Polishing	Dremel		

TABLE 3

Sample Preparation				
WebCode	Method	Tool Used	Grit Size	
TL62JG	Polishing	Emory stones	120	
	Polishing	Emory stones	240	
TUGCJV	Cleaning	Sand paper	120-600	
	Polishing	Dremel		
TYUVZG	Sanding	Dremel		
U2UQWP	Sanding	Sand paper	fine	
	Polishing	Steel wool		
U3NBQC	Sanding	Sand paper	80, 220, 400 y 1000	
U6DLYH	Visual	Stereoscope		
	Polishing	Dremel		
U6VUNC	Sanding	Dremel	unknown	
U98VDN	Visual			
	Sanding	Dremel	80	
	Polishing	Dremel		
UHMGVT	Polishing	Dremel	Abrasive Pad	
UMC3HL	Polishing	Dremel		
URT44T	Cleaning	Sand paper	320	
UT36XE	Sanding	Sand paper	#80, 220, 1000	
UTXVUK	Polishing	Dremel		
UXWZXQ	Visual	Microscope		
	Polishing	Rotary Tool		
	Visual	Microscope		
	Polishing	Rotary Tool		
UZLEEN	Visual	Stereoscope		
V8CAKX	Visual	Stereoscope		
	Sanding	Sand paper	100C	
	Polishing	Dremel	Steel Wool	
VBBQWR	Polishing	Dremel		
VDLHCM	None			
VF8B2B	Sanding	Sand paper	320	

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
VGKT9M	Polishing	Rotary Tool	
VGYZB8	Sanding	Emery paper	
VHHEPK	Grinding	Dremel	Just enough to remove coarse machining marks left by milling machine.
	Sanding	Emery paper	400
	Sanding	Emery paper	1200
	Polishing	Rotary Tool	Buffing wheel
VK3DTG	Polishing	Dremel	
VN6AKX	Sanding	Sand paper	600
VNF8G2	Polishing	Dremel	Coarse to Extra Fine
VTDQKK	Polishing	Dremel	
VX4ZUJ	Grinding	Dremel	
	Sanding	Sand paper	320 Extra Fine
W8ZWVT	Sanding	Sand paper	120, 240, 400, 800, 1200
WAYD2V	Polishing	Dremel	
	Grinding	Dremel	
WC46T9	Polishing	Dremel	
WPVPFQ	Visual	Stereoscope	
	Polishing	Sand paper	240, 400
WQ27FH	Visual	Stereoscope	
	Sanding	Dremel	60
	Polishing	Dremel	
WTDPUJ	Sanding	Sand paper	220
	Sanding	Sand paper	400
	Polishing	Polish	Flitz
WXN3BK	Cleaning	Acetone	
WYDD3D	Sanding	Sand paper	60
	Sanding	Sand paper	220
	Polishing	Sand paper	400
WZXPAY	Polishing	Dremel	

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
X2Z9CY	Polishing	Dremel	
X437K7	Sanding	Dremel	
	Cleaning	Acetone	
X7V88	Sanding	Dremel	46-50 silicon carbide
XU2JTA	Sanding	Sand paper	220, 400 and 1000
XX2PE7	Sanding	Sand paper	320
XXMCWP	None		
Y9F9HM	None		
YARU8P	Polishing	Dremel	
YAVMRH	Visual	Sand paper	180/320/800/1200
	Sanding	Acetone	
	Visual		
YBKXHB	Sanding	Dremel	mid analysis, 220 see notes
YCDNWC	Polishing	Dremel	fine and extra fine
YK9W8V	Polishing	Dremel	
YKVZ4C	Visual	Stereoscope	
	Sanding	Sand paper	120
YN84LD	Grinding	Dremel	
	Polishing	Dremel	
YTMHHK	Sanding	Sand paper	Fine
	Polishing	Rotary Tool	Buffing Wheel
YTP9P3	Visual		
	Sanding	Sand paper	100 and 220
ZFUFHY	Sanding	Sand paper	Medium
ZHWB33	Sanding	Emery paper	150
	Sanding	Sand paper	1500
	Polishing	Dremel	
ZUFTVY	None		

TABLE 3

Sample Preparation			
WebCode	Method	Tool Used	Grit Size
ZWJQXE	Visual		
	Polishing	Dremel	
ZWZYWG	Sanding	Sand paper	200

Response Summary		Participants: 278
Sample Preparation		
Visual Method:	79	
Sanding Method:	93	
Polishing Method:	172	
None:	20	
<p>Note: The total number of preparation methods used is not equivalent to the total number of participants because some participants used more than one sample preparation method.</p>		

Recovery Methods

(listed in order of use)

TABLE 4

Recovery Methods		
WebCode	Method	Time
28GMZG	Fry's Reagent	5 minutes
28YVQW	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	seconds; moved reagent back and forth across the obliterated area (after sanding)
	Acid Etch Method	25% Nitric Acid; seconds; moved reagent back and forth across obliterated area (after Fry's Reagent)
2A2R2Y	Acidic Ferric Chloride	1 minutes
2FWHNM	Fry's Reagent	5 Mins
2GPGWU	Fry's Reagent	~30 sec to 1 Minute
	Griffin Reagent	~30 sec to 1 Minute
	Turner's Reagent	~30 sec to 1 Minute
2LW2N8	Fry's Reagent	10 minutes
	Turner's Reagent	20 minutes
2W99K8	MagnaFlux	*****
	Fry's Reagent	5 minutes
2X7KEF	Fry's Reagent	10 minutes
	Nitric Acid 20%	5 minutes - alternating with Fry's
2XNMU3	MagnaFlux	
	Fry's Reagent	
2YFNTY	Ferric Chloride	1 Minute
	Nitric Acid 10%	1 Minute
	Nitric Acid 10%	1 Minute
	Acidic Ferric Chloride	1 Minute
	Acidic Ferric Chloride	1 Minute
	Acidic Ferric Chloride	1 Minute
34HLJJ	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	
	Fry's Reagent	
34UMYQ	Davis Reagent	20 second intervals for about 5 minutes
	Fry's Reagent	5 second intervals for about 30 seconds total

TABLE 4

Recovery Methods		
WebCode	Method	Time
369WAC	MagnaFlux	
	Fry's Reagent	3 minutes
	10% Sodium Hydroxide	3 minutes
	Fry's Reagent	3 minutes
	20% Nitric Acid	3 minutes
38DG3J	Acidic Ferric Chloride	10 min.
	Magnetic Particle Inspection (MPI)	30 min.
	Fry's Reagent	10 min.
	Acidic Ferric Chloride	5 min.
	Fry's Reagent	5 min.
	Acid Etch Method	2 min.
	Acidic Ferric Chloride	2 min.
39JZRE	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	Multiple applications of ~1 min duration over a period of 30 minutes
3J6B9K	Fry's Reagent	20 min
3VLVU3	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	Swabbed 2-5 minutes
3YJC9H	Magnetic Particle Inspection (MPI)	
	Polish and MPI	
	Fry's Reagent	10 min
	Fry's Reagent	10 min
	Modified Fry's Reagent	5 min
42LUHX	Fry's Reagent	45 min.
44NTJP	Davis	
	Turner's Reagent	
	Fry's Reagent	
46ZKGD	MagnaFlux	
	Polish	
	MagnaFlux	
	Davis Reagent	10
	Turner's Reagent	10
	Fry's Reagent	15
	Polish	
	Fry's Reagent	20
	Fry's with 25% Nitric Acid (to highlight)	15
	Fry's with Davis (to highlight)	15

TABLE 4

Recovery Methods		
WebCode	Method	Time
47RLC3	MagnaFlux	
48C7JL	Acid Etch Method	Swab was soaked in the acid (25% Nitric acid) and then swiped across the surface repeatedly. Remainder wiped off with chem-wipe. Repeated until serial number restored
	Fry's Reagent	
	Turner's Reagent	
4BLDRC	Fry's Reagent	
	Acidic Ferric Chloride	~5 min per application
	5% Nitric Acid	~5 min per application
4ERP2Y	MagnaFlux	---
	Fry's Reagent	several applications of ~30 seconds each
	MagnaFlux	---
	Fry's Reagent	several applications of ~30 seconds each
4FPZUG	Acid Etch Method	1-2 Seconds
	Turner's Reagent	1-2 Seconds
	Fry's Reagent	1-2 Seconds
4GUPV6	MagnaFlux	
	Acidic Ferric Chloride	~5 minutes
	Fry's Reagent	~5 minutes
4MPFKP	MagnaFlux	N/A
	Turner's Reagent	2 min
	Turner's Reagent	2 min
686JFC	Davis' Reagent	3 min.
	Nitric Acid	6 min.
68Z43C	Davis	1 minute
	Turner's Reagent	1 minute
	Fry's Reagent	2 minutes
	Steel Alloy	3 minutes
	Griffin Reagent	1 minute
	Fry's Reagent	3-4 minutes
6E8DUE	Restor-A-Gel	Approximately 2 hours.
6H9EXG	25% Nitric Acid	Wiping method used with cotton swab
6P9UL4	MagnaFlux	

TABLE 4

Recovery Methods		
WebCode	Method	Time
6PJRKT	MagnaFlux	15 minutes
	Davis	3 minutes
	Fry's Reagent	4 minutes
	Acidic Ferric Chloride	4 minutes
6U77PG	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	Various
739WJ4	Fry's Reagent	15 minutes
77LQ8M	Davis Reagent	swiped with cotton swabs 2-3 minutes
	Turner's Reagent	swiped with cotton swabs 4-5 minutes
	Fry's Reagent	swiped with cotton swabs 4-5 minutes
7BZJ68	Davis Reagent	a few seconds
	Turner's Reagent	a few seconds
	Fry's Reagent	a few seconds
	Turner's Reagent	used as highlighter after applying Fry's
7FN9HQ	MagnaFlux	
	Turner's Reagent	approx 25 min
7GZ7R2	Magnetic Particle Inspection (MPI)	HNO3 30%, 3 minutes
	Acid Etch Method	Fry, 3 minutes
7HHW2L	Acid Etch Method	Davis Reagent-20 min
	Turner's Reagent	30 min
	Fry's Reagent	60 min
	Acid Etch Method	Ferric Chloride-10 min
	Acid Etch Method	Acidic Ferric Chloride-10 min
	Acid Etch Method	Phosphoric/Nitric Acid-10 min
7KCKWN	MagnaFlux	
	Turner's Reagent	10 min
	Griffin Reagent	10 min
	Acid Etch Method	10 min
	Acidic Ferric Chloride	10 min
	Fry's Reagent	20 min
7LLPBC	Fry's Reagent	10, 20 and 30 min then
	Fry's Reagent	1hr, 1hr, 1hr, 1hr, 1hr
7N9DLC	Fry's Reagent	2 MINUTES
7R42B7	Fry's Reagent	approximately 5 minutes
7RJKTH	Acidic Ferric Chloride	3-5 minutes

TABLE 4

Recovery Methods		
WebCode	Method	Time
7TYR8D	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	approximately 30 seconds at a time
7VKKVZ	MagnaFlux	20 seconds
	Turner's Reagent	
	Fry's Reagent	
	Nitric Acid Reagent	
7ZNYEL	Fry's Reagent	10 min
	MagnaFlux	2 Min
	10% Nitric	5 min
8A9PEH	Acid Etch Method	25% Nitric Acid swab - seconds
	Acid Etch Method	25% Nitric Acid swab - minutes
	Acid Etch Method	25% Nitric Acid pooled - seconds
	Acid Etch Method	25% Nitric Acid pooled - minutes
	Fry's Reagent	(Dilute) swab - seconds
	Fry's Reagent	(Dilute) swab - minutes
	Fry's Reagent	Swab (seconds)
	Fry's Reagent	Swab (minutes)
	Fry's Reagent	Pooled (seconds)
Fry's Reagent	Pooled (minutes)	
8EWER2	MagnaFlux	
	Fry's Reagent	60 seconds
	Turner's Reagent	60 seconds, 3 applications
8F98D3	MagnaFlux	5 minuts
	Davis	10 minuts
	Turner's Reagent	10 minuts
	Fry's Reagent	20 minuts
8N67XP	Fry's Reagent	
8PW4BM	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	~2-5 mins
	Fry's Reagent	~2-5 mins
8RDMXD	Fry's Reagent	It wa sworked for 30 apprx. minutes
	Acidic Ferric Chloride	Used to highlight
8Y2ATH	MagnaFlux	
	Davis Reagent	Few seconds with 1 swab.
	Turner's Reagent	Few seconds with 1 swab.
	Fry's Reagent	Few seconds per swab. (Approx 10 used)

TABLE 4

Recovery Methods		
WebCode	Method	Time
92RMHF	Fry's Reagent	4+ hours of reapplying
98CXDW	Fry's Reagent	constant application for hours and hundreds of swabs
99NGGZ	Davis Reagent and MagnaFlux	
9DXNQQ	Acidic Ferric Chloride	15 minute
	20% of Natrium Hydroxide	10 minute
9EQNW3	Fry's Reagent	continuous swabbing 30 minutes total
	HCl	continuous swabbing 15 minutes total
9EV4A4	MagnaFlux	
	Acid Etch Method	Less than 5 minutes in total processing time
	Fry's Reagent	Less than 1 minute in total processing time
9HEXCV	Fry's Reagent	applied throughout restoration - restoration took approximately 1 hour
9KZVKL	Griffin Reagent	Varied
	Fry's Reagent	Varied
	Turner's Reagent	Varied
	Davis Reagent	Varied
9LE7G7	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	~1 hr with intermittent swiping / reapplication
9TEL7D	MagnaFlux	
	Davis Reagent	Lightly brushed (~<30 seconds)
	Fry's Reagent	Lightly brushed (~<30 seconds)
9UYQ8V	Fry's Reagent	3-4 minutes
9VUEJY	Acid Etch Method	10 minutes
9ZFX3B	MagnaFlux	
	MagnaFlux	
	Fry's and Some Modified Fry's	8 minutes
	Fry's Reagent	1 minute
	Some Modified Fry's and Fry's	2 minutes
A3EJNL	Fry's Reagent	~20 minutes between the two
	Iron #2 reagent	
A443XX	Acid Etch Method	10 MINUTS
A7V6VY	Acid Etch Method	Several minutes at different intervals

TABLE 4

Recovery Methods		
WebCode	Method	Time
AAFRUE	Acid Etch Method	3 min
ACKEDK	Davis Reagent	~ 12 hours
AE7HM3	Fry's Reagent	approximately 1 hour check every few minutes for first 20 minutes
AVXZ9T	Fry's Reagent	10 - 20 seconds at a time
	25% Nitric Acid	10 - 20 seconds at a time
AZ4R2X	MagnaFlux	
B6VDAC	Cupric Chloride	
	MagnaFlux	
B7E3AK	Fry's Reagent	few seconds at a time
	25% Nitric Acid	few seconds at a time
	MagnaFlux	black
B7P7EV	Fry's Reagent	vigorous directional swabbing for ~3 minutes
B9H24P	Magnetic Particle Inspection (MPI)	
B9YZCG	Acid Etch Method	30s intervals for 3 minutes. 1m intervals for 7 minutes. 5m intervals for 10 minutes.
BCCWRQ	Acid Etch Method	10 minutes
BCEK96	Acid Etch Method	30 seconds (10% NaOH)
	Acid Etch Method	1 minute (25% Nitric Acid)
	Acid Etch Method	30 seconds (10% NaOH)
	Acid Etch Method	30 seconds (25% Nitric Acid)
	Acid Etch Method	10 seconds (10% NaOH)
BD9GL6	Davis	2 min
	Turner's Reagent	2 min
	Fry's Reagent	5 min
BG9M6G	AQUA REGIA	~12-13 MINUTE
	DAVIS' REAGENT	~2-3 MINUTE
	Turner's Reagent	~12-13 MINUTES
	Fry's Reagent	~12-13 MINUTES
BM3G7P	Polish with dremel	
	MagnaFlux	
	Turner's Reagent	wiped, did not leave pooled
	HF	wiped, did not leave pooled
	Fry's Reagent	wiped, did not leave pooled

TABLE 4

Recovery Methods		
WebCode	Method	Time
BMJH87	Acid Etch Method	25% Nitric Acid - 15 minutes
	Fry's Reagent	5 minutes
BT97QH	Fry's Reagent	applied multiple times for a few seconds
	Magnetic Particle Inspection (MPI)	
BUXJ92	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	Approximately 1 minute
C7K38X	10% NaOH	-
CFUBVQ	Turner's Reagent	no more than 3 seconds
	Fry's Reagent	no more than 3 seconds
	Acidic Ferric Chloride	no more than 3 seconds
CFXVZ8	Magnetic Particle Inspection (MPI)	
	Griffin Reagent	2 minutes
CG77J4	Fry's Reagent	10 minutes (total)
CHKJC8	Fry's Reagent	10 minutes
	Nitric Acid	5 minutes - alternating with above
CHX8EU	MagnaFlux	
CJX7W8	Fry's Reagent	45 minutes in total
	Acid Etch Method	10 minutes
CLH6Y4	MagnaFlux	
	Turner's Reagent	several minutes
	Fry's Reagent	several minutes
CMVQJD	Acidic Ferric Chloride	Less than a Minute
	25% Nitric Acid	Less than a minute
	Ferris Chloride	Less than a minute
CQU2ED	Fry's Reagent	About thirty minutes.
CUWUXC	Davis Reagent	2 minutes
	Turner's Reagent	5 minutes
	Fry's Reagent	8 minutes
	20% Nitric Acid	2 minutes-highlighter
CWLBXC	MagnaFlux	
	Davis	not recorded
	Fry's Reagent	not recorded
	25% Nitric acid	not recorded
	25% HCl	not recorded

TABLE 4

Recovery Methods

WebCode	Method	Time
CWX9UG	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	swabbed
	Fry's Reagent	swabbed
DA6FHD	MagnaFlux	
DGHD4C	Fry's Reagent	6 x 1 minute
	Cleaning & Protecting	Ethanol & Lubricant
DJWDA	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	25 - 30 seconds
DLVAJL	Acid Etch Method	10-15 minutes
DR4D4U	MagnaFlux	
	Fry's Reagent	~20 minutes
DX9DXW	MagnaFlux	
	Fry's Reagent	Wet swabs of Fry's swiped, Approx 15
DXRZWE	Acid Etch Method	davis reagent, 3 min
	MagnaFlux	
DYA6ED	Acid Etch Method	Applied and reapplied continuously
EAZZ6D	Fry's Reagent	5-10 minutes revealed characters
	H2O	Added H2O @ 20 mn and 45 mn
EEYET3	MagnaFlux	N/A
	Fry's Reagent	30 seconds
	Acidic Ferric Chloride	30 seconds
EF9LXG	MagnaFlux	
	diluted 25% Nitric Acid	3 minutes
EFM8A4	MagnaFlux	
	Fry's Reagent	Repeated applications of ~30 sec
	Davis Reagent	Repeated applications of ~30 sec
EKVPAR	MagnaFlux	N/A
EM4T9A	Fry's Reagent	1 minute intervals
EQGMVT	Fry's Reagent	5 min
EWTA6Q	Fry's Reagent	5 to 10 swipes.
	MagnaFlux	
	Fry's Reagent	One minute

TABLE 4

Recovery Methods		
WebCode	Method	Time
EXRBD4	Acid Etch Method	Sodium Hydroxide - 1 hour
	Acid Etch Method	60% HCL - 1 hour
	Fry's Reagent	2 hours - 1st & Last character recovered
	Fry's Reagent	1 hour - a 3rd character recovered
	Heat treat with MAPP gas	30 minutes no further recovery
EZC9GZ	Fry's Reagent	~ 3 - 5 minutes
F26KVY	Acid Etch Method	~4-6 minutes
F2KY49	Magnetic Particle Inspection (MPI)	1 Minute
	Davis Reagent	1 Minute
	Turner's Reagent	1 Minute
	Fry's Reagent	1 Minute
F4ACLR	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	
FCHXFM	MagnaFlux	
	Fry's Reagent	1 minute increments, multiple times
	Acidic Ferric Chloride	1 minute increments, multiple times
	Nitric Acid	1 minute increments, multiple times
	Phosphoric/Nitric Acid	1 minute increments, multiple times
FEN7Y7	Fry's Reagent	30 Seconds at a time
	Turner's Reagent	30 Seconds at a time
	Acidic Ferric Chloride	30 Seconds at a time
FGXAV3	Fry's Reagent	~10 seconds
FJ24EF	Acidic Ferric Chloride	about 15-20 seconds
	MagnaFlux	
FKYCGX	Turner's Reagent	
	Acidic Ferric Chloride	
	25% Nitric	
FMZF9K	MagnaFlux	
FUDJ3Y	MagnaFlux	
	Davis Reagent	
	Turner's Reagent	

TABLE 4

Recovery Methods		
WebCode	Method	Time
FYXCC8	MagnaFlux	
	Turner's Reagent	<1 minute
	Fry's Reagent	<1 minute
	25% Nitric Acid	<1 minute
	MagnaFlux	
	Dremel polishing	
	Turner's Reagent MagnaFlux	1/2 hour intervals
G2JBF4	Turner's Reagent	10 minutes
	Fry's Reagent	
G3MEEJ	Fry's Reagent	
G4GZAV	Acid Etch Method	Two (2) minutes
G6W64N	MagnaFlux	
	Fry's Reagent	15-30 seconds
	Acidic Ferric Chloride	15-30 seconds
	Phosphoric/Nitric Acid Step 1 Nitric Acid Step 2	15-30 seconds 15-30 seconds
GHL4UQ	Fry's Reagent	10 minutes
GXEUT	Davis'	swips for 5 minutes
	Turner's Reagent	swips for 5 minutes
	Fry's Reagent	swips for 5 minutes
	Turner's Reagent Davis'	swips for 3 minutes swips for 3 minutes
GZ3AD2	Acid Etch Method	1 MINUTE
	Fry's Reagent	1 MINUTE
	Acidic Ferric Chloride	1 MINUTE
H7MVG7	Fry's Reagent	2 minutes
HDKLZV	Fry's Reagent	1 minute
	Turner's Reagent	1 minute
	Davis Reagent	1 minute
	MagnaFlux	
HE6X8G	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	2 to 3 minutes
	25% Nitric Acid	2 to 3 minutes
HG236T	Acid Etch Method	

TABLE 4

Recovery Methods		
WebCode	Method	Time
HMB77T	Fry's Reagent Magnetic Particle Inspection (MPI)	
HP27LD	MagnaFlux Fry's Reagent Turner's Reagent Davis' Reagent Nitric Acid	10 min. 15 min. 10 min. 5 min.
HP4VQA	Magnetic Particle Inspection (MPI)	
HQBDQQ	MagnaFlux Fry's Reagent	2 mins 30 seconds
HXE8TY	Electro-magnetic Fry's Reagent	
HYBHYA	hydrochloric acid	A few seconds (around 10), repeated several times.
J4DZKF	Fry's Reagent 10% Nitric Acid	10 minutes 15 seconds
J8YNB9	Fry's Reagent	4 times, 10 s each time
JCAUKY	Acid Etch Method	10 MINUTES
JCUJU8	Acid Etch Method Turner's Reagent	30 sec 20 sec
JF8GAG	[Lab Identifying Information] Examination and Restoration of Erased Identification Numbers/Markings	8 minutes
JUVCQ8	Magnetic Particle Inspection (MPI)	
K276A2	MagnaFlux Turner's Reagent Fry's Reagent	5-10 seconds per swipe 5-10 seconds per swipe
K9Q2HX	MagnaFlux Turner's Reagent Fry's Reagent	Two minutes Applied four times, 10 minute total
KQLRB7	MagnaFlux Fry's Reagent	~1 min
KTT8BW	MagnaFlux Fry's Reagent Potassium dichromate	5 minutes 5 minutes

TABLE 4

Recovery Methods

WebCode	Method	Time
KV24A8	Magnetic Particle Inspection (MPI)	
L7XPVW	MagnaFlux	
	Griffin Reagent	applied 3 times, let sit for 2 mins
	MagnaFlux	
	Griffin Reagent	applied 2 times, let sit for 4 mins
	MagnaFlux	polished just prior
	Fry's Reagent	applied 2 times, wiped immediately
L89G3R	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	15 Minutes
L97ZRZ	Magnetic Particle Inspection (MPI)	
LFG3WN	MagnaFlux	none
LFLKTR	Turner's Reagent	10 minutes
	Acid Etch Method	25% Nitric Acid - 5 minutes
	Acid Etch Method	10 % Sodium Hydroxide - 5 minutes
LML384	Fry's Reagent	
LXLHBM	Fry's Reagent	7 minutes
MDADYX	Turner's Reagent	60 SECONDS
	Fry's Reagent	30 SECONDS
MFV7MK	MagnaFlux	
	Acid Etch Method	1Min
	Fry's Reagent	1 - 2min
MGLAD8	Fry's Reagent	cyclic (from 30 seconds to 5 min)
	MagnaFlux	
MK8ZU4	Electro-magnetic	
	Oberhoffer	15 min
	Meyer-Eichholz	6 min
	Oberhoffer	13 min
	Meyer-Eichholz	2 min
	Meyer-Eichholz	3 min
	Oberhoffer	15 min
MMKEKX	Acid Etch Method	different acids, all in all about 30 minutes
MN789L	MagnaFlux	
MUEKDY	MagnaFlux	
	Fry's Reagent	~ 10 minutes

TABLE 4

Recovery Methods		
WebCode	Method	Time
MVB7VW	Fry's Reagent	50 min
MY67UZ	Acidic Ferric Chloride	
MYQGT9	Fry's Reagent	45 min
	Davis	30 min
	MagnaFlux	1 min
N46FYZ	MagnaFlux	
	Griffin Reagent	< 15 seconds
	10% sodium hydroxide	< 5 seconds
	Acidic Ferric Chloride	< 5 seconds
	Fry's Reagent	<10 seconds
	Fry's Reagent	<10 seconds
NDPWJU	Acid Etch Method	APPROXIMATELY 30 SECONDS AT A TIME
NDQJ7Z	MagnaFlux	
	Fry's Reagent	a few minutes
NH2UW9	MagnaFlux	
NJWHBX	Fry's Reagent	10 - 15 Minutes
NNMLA4	Turner's Reagent	swiped constantly w/ swab
	Fry's Reagent	swiped constantly w/ swab
	Turner's Reagent	To highlight
NRRBR6	Turner's Reagent	
	Davis' Solution	
	Fry's Reagent	
	Acid Etch Method	minutes
	Acid Etch Method	minutes
	Ferric Chloride Solution	
	Acidic Ferric Chloride	minutes
	Acid Etch Method	minutes
	Davis' Solution	
	Fry's Reagent	
NXCH64	Magnetic Particle Inspection (MPI)	
P2WMH8	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	Approx. 5 minutes
P6CDM3	MagnaFlux	
	Turner's Reagent	Swabbed
	Davis Reagent	Swabbed

TABLE 4

Recovery Methods		
WebCode	Method	Time
PJ636R	Magnetic Particle Inspection (MPI)	NA
	Fry's Reagent	less than 30 seconds
	Turner's Reagent	multiple times less than 30 seconds
	Magnetic Particle Inspection (MPI)	NA
PKGQUX	MagnaFlux	
	Acid Etch Method	5 minutes
PLV6BF	Acidic Ferric Chloride	several seconds and then clean with acetone and then try again the same procedure
PQN94J	Acid Etch Method	10 minutes
PUW9UK	MagnaFlux	
	Fry's Reagent	~15 seconds
PV2XTM	MagnaFlux	
PY23FF	MagnaFlux	one minute
	Fry's Reagent	one minute
	Turner's Reagent	one minute
Q8BX3L	Magnetic Particle Inspection (MPI)	2 min
	Acid Etch Method	16 h
Q8FCEL	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	20-30 seconds
	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	40-50 seconds
QDHJUP	MagnaFlux	
	Fry's Reagent	20 min
	Acid Etch Method	20 min
QHDDP6	Fry's Reagent	
	Turner's Reagent	
QL8CZU	Magnetic Particle Inspection (MPI)	
	Ferric Chloride	1 to 2 minutes
	Acidic Ferric Chloride	2 to 3 minutes alternating with Ferric Chloride
QQJ9E4	MagnaFlux	
	Fry's Reagent	15-30 seconds
	Phosphoric Acid/Nitric Acid (step 1)	15-30 seconds
	Nitric Acid (step 2)	15-30 seconds

TABLE 4

Recovery Methods		
WebCode	Method	Time
QRDUBF	Fry's Reagent	5 mins
	Modified Fry's Reagent	10 mins
	Fry's Reagent	10 mins
QXAAAN	Fry's Reagent	several rounds, 1-3 minutes each
	Acidic Ferric Chloride	several rounds, 1-3 minutes each
QXF4EM	Fry's Reagent	
	Magnetic Particle Inspection (MPI)	
QYL6UV	Davis Reagent	1-2 minutes
	Turner's Reagent	1-2 minutes
	Fry's Reagent	1-2 minutes
R4CWLP	MagnaFlux	
	Fry's Reagent	10 MIN
R7B99N	Magnetic Particle Inspection (MPI)	
	Davis Reagent	30 seconds
	Fry's Reagent	45 seconds
R8N3L4	Magnetic Particle Inspection (MPI)	
	polish	
	Magnetic Particle Inspection (MPI)	
	polish	
	Magnetic Particle Inspection (MPI)	
	Davis	~1 min
	polish	
	Davis	~3 mins
	Magnetic Particle Inspection (MPI)	
	Davis	~1 min
	Turner's Reagent	~30 secs
	Davis	~1 min
	Fry's Reagent	~30 secs
	Davis	~2 mins
	Fry's Reagent	~1 min
	Davis	~1 min
	Fry's Reagent	~30 secs
	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	~30 secs
	Davis	~1 min
Fry's Reagent	~30 secs	
Davis	~1 min	

TABLE 4

Recovery Methods		
WebCode	Method	Time
RE88RB	MagnaFlux	N/A
RGF6GL	Fry's Reagent	2 hours and 20 minutes
RJKRYW	Fry's Reagent	5 minutes total
RKTY66	Fry's Reagent	1 application for two (2) minutes, wiped clean and observed partial digits. Applied reagent a second time for five (5) minutes, wiped clean and observed.
RKVUKV	Acid Etch Method	10 - 15 seconds
	Fry's Reagent	10 - 15 seconds
	Turner's Reagent	15 - 20 seconds
RKXG29	MagnaFlux	
RP72TM	Fry's Reagent	less than one minute
	MagnaFlux	
RU7W7V	Turner's Reagent	see comments
	Fry's Reagent	see comments
RY9EUM	MagnaFlux	
T2YQGY	Magnetic Particle Inspection (MPI)	
T44C97	Fry's Reagent	10 minutes
	Acidic Ferric Chloride	5 minutes
	25% Nitric Acid	5 minutes
	Fry's Reagent	10 minutes
T4ZQKC	MagnaFlux	---
	Fry's Reagent	5-15 min
TAULJ4	Fry's Reagent	Swabbed approximately 1.5 hours
TBQ774	Turner's Reagent	~5 seconds per swipe
	Fry's Reagent	~5 seconds per swipe
	Magnetic Particle Inspection (MPI)	
TL62JG	Fry's Reagent	30
	Acidic Ferric Chloride	2
	Nitric Acid 25%	5
TUGCJV	Acidic Copper Sulfate	
TYUVZG	Fry's Reagent	3 min
	Turner's Reagent	3 min
	Magnetic Particle Inspection (MPI)	

TABLE 4

Recovery Methods

WebCode	Method	Time
U2UQWP	25% Nitric Acid Davis' Regent Turner's Reagent Fry's Reagent	
U3NBQC	Fry's Reagent	2 minuts
U6DLYH	Magnetic Particle Inspection (MPI) Davis Turner's Reagent Fry's Reagent	2 mins 2 mins 30 seconds
U6VUNC	Fry's Reagent	
U98VDN	MagnaFlux Acid Etch Method	about 5 minutes
UHMGVT	Davis Reagent Turner's Reagent Fry's Reagent	2 minutes 2 minutes 30 seconds
UMC3HL	Fry's Reagent Phosphoric/Nitric 2 step	less than 5 minutes less than 2 minutes
URT44T	Acidic Ferric Chloride	10 min
UT36XE	MagnaFlux Fry's Reagent Turner's Reagent	Five minutes One minutes
UTXVUK	Fry's Reagent Phosphoric/Nitric 25% Nitric	4-5 minutes 1 minute 10-20 seconds
UXWZXQ	Fry's Reagent Fry's Reagent	7 minutes 2 hours and ten minutes
UZLEEN	Fry's Reagent	20 minutes
V8CAKX	Davis Reagent Turner's Reagent Fry's Reagent	2 mins 1 min 1 min

TABLE 4

Recovery Methods

WebCode	Method	Time
VBBQWR	MagnaFlux	
	Davis' Reagent	5 minutes working, 30 second increments.
	Fry's Reagent	With Turner's Reagent as a highlighter. 30 minutes working, 30 second increments.
	Fry's Reagent	With Turner's Reagent as a highlighter. 30 minutes working, 1 minute increments.
	Fry's Reagent	With Turner's Reagent as a highlighter. 30 minutes working, 2 minute increments.
VDLHCM	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	30 Seconds per attempt
VF8B2B	Regula device	
VGKT9M	Fry's Reagent	15 seconds
	Turner's Reagent	15 seconds
	Davis Reagent	15 seconds
VGYZB8	Fry's Reagent	2.5 hours
VHHEPK	Fry's Reagent	15 minutes
VK3DTG	Fry's Reagent	less than 5 minutes
VN6AKX	MagnaFlux	not applicable
VNF8G2	Acid Etch Method	10 minutes & 10 minutes while abrading surface with a cotton tip applicator
VTDQKK	MagnaFlux	
	Electro-acid	
	Turner's Reagent	
	Fry's Reagent	
	10% Sodium Hydroxide	
	Potassium Dichromate	
VX4ZUJ	MagnaFlux	
	Fry's Reagent	Several seconds at a time
W8ZWWT	25% Nitric acid	up to 2 min
	Fry's Reagent	up to 5 min
WAYD2V	Fry's Reagent	Multiple 10-15 second applications
WC46T9	Fry's Reagent	1 hour

TABLE 4

Recovery Methods

WebCode	Method	Time
WPVPFQ	MagnaFlux	
	Acid Etch Method	5 minutes
	Acidic Ferric Chloride	5 minutes
	Fry's Reagent	10 minutes
WQ27FH	MagnaFlux	
	Turner's Reagent	~10 seconds
	Davis Reagent	~10 seconds
	Fry's Reagent	~10 seconds
WTDPUL	Fry's Reagent	Not recorded
WXN3BK	MagnaFlux	
WYDD3D	Phosphoric/Nitric Acid	12x - 30 Seconds each
	Acidic Ferric Chloride	6x - 30 Seconds Each
WZXPAY	MagnaFlux	
	Fry's Reagent	about 2 minutes
	Turner's Reagent	about 3 minutes
	Davis/Fry's	about 3 minutes
X2Z9CY	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	total of ~2 minutes
	Nitric Acid	30 seconds
X437K7	MagnaFlux	
	Phosphoric Nitric Acid	several seconds
	Nitric Acid	several seconds
	Acidic Ferric Chloride	several seconds
	Fry's Reagent	several seconds
X7VW88	Fry's Reagent	approximately 1 min
	Turner's Reagent	approximately 1 min
	Davis Reagent	intermittently with water every few minutes with drying 2hrs, redremeled, another 2hrs
XU2JTA	MagnaFlux	N/A
	Fry's Reagent	3 minutes
XX2PE7	Regula Device	

TABLE 4

Recovery Methods

WebCode	Method	Time
Y9F9HM	MagnaFlux 400 grit sand paper MagnaFlux Davis Reagent	Continuous application for approximately 20 minutes with cotton swab
YARU8P	Fry's Reagent	10-30 seconds
YAVMRH	Fry's Reagent 60% HCL Solution Nitric Acid Heat Treatment	120mins (FR) 60 mins (Nitric) 14hrs (HCL solution) 3 mins (Heat Treat)
YBKXHB	Fry's Reagent 25% nitric acid Turner's Reagent	30 seconds, approx 30 times 30 seconds - 5 minutes, approx 30 times 30 seconds - 5 minutes, approx 30 times
YCDNWC	Fry's Reagent Fry's Reagent Fry's Reagent Fry's Reagent	5 minutes 5 minutes 5 minutes 5 minutes
YK9W8V	Acid Etch Method DAVIS REAGENT AQUA REGIA REAGENT Acidic Ferric Chloride	~24 MINUTES TOTAL 15 MINUTES 7 MINUTES 2 MINUTES
YKVZ4C	Fry's Reagent	6 applications of ~25 second apiece, vigorous rubbing during application time
YN84LD	The sample was eaten away chemical solution CuCl * 2H ₂ O + HCl + H ₂ O	Time 30 min.
YTMHHK	Fry's Reagent Nitric Acid 20%	2 minutes 2 minutes
YTP9P3	Fry's Reagent 25% Nitric Acid	~ 30 seconds per application (14 applications) ~ 30 seconds per application (15 applications)
ZFUFHY	Acidic Ferric Chloride Davis Reagent 25% Nitric Acid	10 minutes 5 minutes 3 minutes

TABLE 4

Recovery Methods		
WebCode	Method	Time
ZHWB33	Acid Etch Method	Solution #1, 5 minutes
	Acid Etch Method	Solution #2, 5 minutes
	Acid Etch Method	Solution #3, 5 minutes
	Acid Etch Method	Solution #3, 10 minutes
ZUFTVY	Fry's Reagent	Did not record
	Sanding	
	Acidic Ferric Chloride	Did not record
	Nitric Acid	Did not record
	Sanding	
	Nitric Acid	Did not record
	Acidic Ferric Chloride	Did not record
	Nitric Acid	Did not record
	Acidic Ferric Chloride	Did not record
Nitric Acid	Did not record	
ZWJQXE	MagnaFlux	
	Davis Reagent	Short time (10-30 s)
	25% Nitric Acid	Short time (10-30 s)
	Fry's Reagent	Short time (10-30 s)
ZWZYWG	Fry's Reagent	
	Turner's Reagent	

Response Summary

Participants: 277

Recovery Methods

Chemical Processing: 247

Magnetic Processing: 130

Note: The total number of recovery methods used is not equivalent to the total number of participants because some participants used more than one recovery method.

Additional Comments

TABLE 5

WebCode	Additional Comments
2XNMU3	After using Magnaflux, the serial number could be visualised. However the first digit was unclear and could have been a D or a 0. Using Fry's Reagent confirmed the first digit as a D.
7GZ7R2	anyone
7HHW2L	After recovering all but the 3rd and 4th characters, documented with photograph and continued with Fry's Reagent. Eventually the entire serial number faded away without recovering those characters. Sanded and polished the sample and observed a faint 4th character that appeared to be a "0". Alternated Turner's and Fry's reagents and while some of the characters reemerged, was unable to clarify 3rd character before entire serial number faded away again. Also tried Ferric Chloride, Acidic Ferric Chloride, and Phosphoric/Nitric Acid (acceptable to use per SOP) and while these etchants were reactive, they were unsuccessful in recovering any of the serial number.
7KCKWN	Acid etching did not restore any characters.
7LLPBC	total time of fry's reagent was approx 8hrs
8EWER2	Item 1 was initially examined and determined to be a ferromagnetic metal block, silver in color, approximately 7.2 cm in length, 2.7 cm in width and 7 mm in thickness. On the side of suspected obliteration there is a centrally located area where material has been removed with an approximate width of 2.6 cm. This suspect area of obliteration has material removed, and presents arced tool markings consistent with having been produced by an edged cutting/facing type machine tool. There are visible burrs and two edges of the cut area where material has been removed.
8PW4BM	Order of restoration techniques: MPI, sanded p400, MPI, polish, MPI, sanded P400, polish, MPI, Turner's Reagent, MPI, Fry's Reagent, MPI, sanded P400, MPI, Fry's Reagent. The serial number was set over to the right side of the obliterated channel. This made the last character difficult to restore.
8RDMXD	Magnetic Particle Inspection was attempted first. I was unable to recover the characters C,1 and 0 with this method.
92RMHF	We have taken this test for years. For some reason this number was barely able to be restored. Perhaps it was a bad sample.
9KZVKL	Attempts to recover the serial number began with light hand sanding and chemical etching before progressing to mechanical sanding and longer chemical applications. At no point was any part of the serial number revealed.
9LE7G7	Magnaflux results not as good as on previous tests. Chemical etch returned the complete serial number with ease.
A7V6VY	Second character of recovered serial could possibly be interpreted as a "6" during different stages of applying etchant.

TABLE 5

WebCode	Additional Comments
ACKEDK	Davis Reagent was applied numerous times with a swab. Turner's Reagent was applied with a swab occasionally as a highlighter, then used alone. Per information received the serial number consists of six characters. Note re: ? There is ample space in front of the D however, no hint of a possible character appeared in front of the D. There is very little space between the 2 and the edge where the removal process ends. No possible character was noted there.
B6VDAC	Methods: Serial Number: Magnetic, thermal, and chemical methods may be used for the restoration of serial numbers. Conclusions regarding restored characters are made by visual examination of the restored surface under a variety of lighting conditions. Information regarding the alpha-numeric structure or the general location of serial numbers is obtained when necessary from reference sources or from firearms in the Laboratory's Reference Firearms Collection. Limitations: Serial Number: With the exception of the magnetic method, serial number restoration is a destructive examination and it is possible that the obtained results may not be reproduced in any subsequent examinations. Restored serial numbers are sometimes only visible during a portion of the reconstruction process, and are not necessarily visible at the conclusion of the process.
B9YZCG	The 1st character looks like the letter D because the left side is straight vertically and the right side is curved. The 4th character looks like the number 0 because the left and right side is curved. The 6th character looks like the letter F because there was never any development towards the bottom of the character to show that the character could be a letter E.
BCEK96	Oil applied to prevent from rusting after restoration.
BD9GL6	Characters were visible after minimal polishing and chemicals applied with the mill marks still present. The 2nd through 4th character could not be successfully determined. The surface was polished free from any machining marks in attempt to restore the undetermined characters without success. The bar stock was magnetic so the magnetic chemicals were initially applied (Davis, Turner's, Fry's).
BM3G7P	Often when we have a firearm, it is possible to determine orientation of the serial number relative to the gun. Perhaps a mark can be placed on the bar stock to indicate which side is "up" to assist with orientation and photographs prior to restoration.
EQGMVT	The obliterated area was sanded with 400 grit sanpaper untill mirror-like finish. After first application of Fry's chemical reagent waited approximate five minutes and the serial number was partially visible. The obliterated area was sanded and treated with Fry's chemical reagent for a second time, waiting approximate another five minutes and the serial number was restored. (DC102F)
EXRBD4	The test surface had a visual appearance of being heavily (& deeply) ground or milled. The treatment of the metal with an acid etch did not appear to reduce the appearance of these deep grind marks on the surface of the metal.
F4ACLR	we use magnetic Yoke and wet magnetic powder.
HMB77T	Many areas of the serial number appeared to be able to be restored reliably with the exception of the second letter/number. Regardless of technique that area of the metal did not respond in the same manner as the rest of the area.
HP4VQA	SERIAL NUMBER "DC102F" FULLY RESTORED.
JCAUKY	The test is too easy. The letters are too big in comparison to letters usually found on weapons.

TABLE 5

WebCode	Additional Comments
KV24A8	FULL RESTORATION OF SERIAL NUMBER: DC102F
MFV7MK	Although the magnetic method was satisfactory in revealing the obliterated sequence; the acid and FRY method was performed for double corroboration of the sequence and also the acid-FRY method that is used more in our work area.
MMKEKX	After smoothing the surface softly with sand paper we rubbed the surface with acid saturated cotton swabs. The level of difficulty to reconstruct the serial number on this steel bar stock was comparable to the steel bar stock last year.
MY67UZ	Methods: Serial Number: Magnetic, thermal, and chemical methods may be used for the restoration of serial numbers. Conclusions regarding restored characters are made by visual examination of the restored surface under a variety of lighting conditions. Information regarding the alpha-numeric structure or the general location of serial numbers is obtained when necessary from reference sources or from firearms in the Laboratory's Reference Firearms Collection. Limitations: Serial Number: With the exception of the magnetic method, serial number restoration is a destructive examination and it is possible that the obtained results may not be reproduced in any subsequent examinations. Restored serial numbers are sometimes only visible during a portion of the reconstruction process, and are not necessarily visible at the conclusion of the process.
P6CDM3	The chemical etchants used were not effective in restoring the obliterated serial number.
PJ636R	Used MPI with Magnaflux 7HF and 9CM
R4CWLP	Attempted magnetic recovery prior to polishing. Characters visible but illegible. Polished and tried magnetic again, still illegible. Applied FRYs, characters appeared, used 25% Nitric for high lighting. Sealed with nail polish.
RU7W7V	Serial number restored by alternating Turner's and Fry's. Continued to reapply using cotton swabs until all of the characters were restored.
TUGCJV	the serial numbers restore to read :DC102F
U6VUNC	May have been ground too far to be positive of 4th and 5th characters.
UXWZXQ	Frys was initially applied without any polishing and without a result. After polishing, Frys was reapplied with constant monitoring.
V8CAKX	The Turner's and Fry's reagents were alternated over a period of about 5 mins total.
VBBQWR	I went with a conservative approach on reporting. Initially with the MagnaFlux the fourth character appeared to be a 0, but through chemical processing, there appeared to be a center line through the fourth character. This is reported as either a 0 or an 8.
VX4ZUJ	I used Magnaflux prior to any preparation of the sample to see if any characters could be visualized, and I observed most of the characters. Then I used the Dremel tool and sand paper prior to using the Fry's reagent. The Fry's reagent was applied with a cotton swab and left on for several seconds before it was wiped off. This step was done several times until all the characters were visualized.

TABLE 5

WebCode	Additional Comments
W8ZWVT	Note that the previous result contains the verified results of the number restoration process. Prior to the blind bench verification process, the sequence "D ? ? ? F" was visible, where the first "?" was likely to have been a "C", the second "?" may have been an "A", the third "?" was likely to have been an "O", and the fourth "?" was likely to have been a "2".
WZXPAY	I rinsed Item 001 with acetone, dried, and polished in between the different methods used to restore the serial number.
X437K7	Partial visibility of number using Magnaflux after sanding, used acids to more clearly raise number's visibility.
Y9F9HM	A large gouge was noted across the fourth character. Early application of Davis reagent gave this character the appearance of an 8. Continual application w/ cotton swab resolved the gouge but the outline of the character began to fade. For these reasons the conservative route was taken and the character was reported as being a 0 or an 8.
YBKXHB	No pre-treatment was used in the beginning because it was noted that the swirl marks present were very light, and the depth of the cut to the metal was very deep. I didn't want to further remove metal as it felt it was unnecessary. It was proven that this was true because the 1st and 6th digits were recovered. After the first set of reagents didn't return digits 2-5, a very light smoothing with a 220 dremel was made. Additional applications of fry's, nitric, and turners were applied. The 1st and last digits returned, but the middle (2-5 digits) were still unable to be recovered. After approximately 75-100 applications to the metal, and fleeting 1st and 6th digits, analysis was deemed to be unsuccessful.
YTP9P3	Initially sanded with 100 grit, then finished with 220 grit. First 10 applications were Fry's Reagent (50% dilution). The last 4 applications of Fry's were each followed by an application of 25% Nitric Acid. The remaining chemical applications (11) were 25% Nitric Acid only. The bar stock was wiped dry, then gun oil was applied to help preserve the surface.
ZHWB33	Acid restoration solutions #1 and #2 had no effect. After applying solution #3 for 5 minutes a number started to appear but was unreadable. After applying solution #3 a 2nd time for 10 minutes the number appeared. The process was documented with photography.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 20-5250: Serial Number Restoration

DATA MUST BE SUBMITTED BY **April 20, 2020, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234E

WebCode: BRBVWZ

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Please Note: A piece of aluminum bar stock labeled as 'Aluminum Standard' was also included in the sample set and is intended as a reference for size, shape and positioning of the stamped alphanumeric characters used in the serial number. Use caution when handling the sample, as there may be sharp areas on the Item 1 bar stock.

Items Submitted (Sample Pack SNR1):

Item 1: A piece of 4140 alloy steel bar stock with suspected obliterated serial number.

1.) Please record the restored characters below.

The serial number on this material consists of 6 characters.

Item 1:

2.) What would be the wording of the Conclusions in your report?

Please note: Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.

3.) What methods were used to prepare the sample prior to attempts at recovery?

eg. Sanding, Polishing, Visual, etc. (Please describe in order.)

Method	Tool Used	If sanding was done what grit size was used?
<input type="text"/>	<input type="text"/>	<input type="text"/>

4.) What recovery methods were used during your examination?

eg. Fry's, Acid Etch, MagnaFlux, etc. (Please list in order of use)

Method	If an acidic method was used how long was the acid left on the material?
<input type="text"/>	<input type="text"/>

5.) Additional Comments

Please note: Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.

Additional Question

1: Instead of receiving the physical aluminum standard, would a high resolution scaled image of the aluminum standard that is accessible through the CTS Portal be adequate? If not, why?

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
- This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps **only if your laboratory is accredited in this testing/calibration discipline** by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory.

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety.

Authorized Contact Person and Title

Laboratory Name

Location (City/State)