



## Serial Number Restoration Test No. 14-5250 Summary Report

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This test was sent to 360 participants. Each participant received a sample pack containing a piece of stainless steel bar stock which had been stamped with a six character serial number which 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 attempt to restore the obliterated serial number. Data were returned from 311 participants (86% response rate) 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 stainless 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 restored serial number. The serial number to be restored consisted of 6 characters (705JDE).

## **SAMPLE PREPARATION-**

Each sample set contained a piece of 1" x 1/4" x 2.5" stainless steel bar stock that was stamped using a punch press. The stamp consisted of 6 characters (705JDE) that are 1/8" in height. The serial number was then obliterated by removing material from the bar stock using a vertical milling machine. A consistent amount of material was removed from each piece of bar stock.

A piece of aluminum bar stock was also included in the sample set and is intended as a standard for size, shape, and positioning of the stamped alphanumeric characters used in the serial number. The alphanumeric characters are digits 0-9 and letters A-F, H, J, K and N that are 1/8" in height.

**SAMPLE SET ASSEMBLY:** An Item 1 was enclosed in chip board and the sides taped to securely contain the sample. The aluminum standard was wrapped in chip board and both were placed in their respective pre-labeled envelopes. Each sample pack was packaged with 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 "705JDE." The remaining predistribution laboratory restored six characters; however, reported the similarly shaped character "B" rather than "E" for the sixth character. All laboratories used a chemical restoration method for recovery.

## **Summary Comments**

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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 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 (705JDE). [Refer to Manufacturer's Information for production details.]

Of the 311 responding participants in Table 1: "Recovered Characters", 304 (98%) recovered the six digits consistent with the Manufacturer's Information. Five participants recovered 1-2 characters different from the consensus response (although three of these reported the consensus characters in their written Conclusion Table). The remaining two participants reported that no restoration was achieved.

Of the 311 responding participants in Table 4: "Recovery Methods", 249 participants used only chemical processing for the serial number restoration. Another 36 participants used only magnetic processing. 25 participants reported using combined magnetic and chemical processing. The remaining participant did not report a recovery method in this table.

# Recovered Characters

Please indicate the recovered characters below.

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
22P3R3	7	0	5	J	D	E
26M2LK	7	0	5	J	D	E
28779W	7	0	5	J	D	E
2BG2DM	7	0	5	J	D	E
2CYEAH	7	0	5	J	D	E
2VUWPD	7	0	5	J	D	E
2VXFE2	7	0	5	J	D	E
2X4J4Q	7	0	5	J	D	E
32YY9J	7	0	5	J	D	E
34C9DB	7	0	5	J	D	E
3FMJ68	7	0	5	J	D	E
3GRVDN	7	0	5	J	D	E
3HDB2Q	7	0	5	J	D	E
3KG6NA	7	0	5	J	D	E
3N83V8	7	0	5	J	D	EITEM
3RUJMT	7	0	5	J	D	E
3WBWGE	7	0	5	J	D	E
3Z92Q6	7	0	5	J	D	E
49ER23	7	0	5	J	D	E
4ACEMY	7	0	5	J	D	E
4FHJFR	7	0	5	J	D	E
4GR2BA	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
4GTBK2	7	0	5	J	D	E
4MYJUV	7	0	5	J	D	E
4PYHHL						
4W6D2G	7	0	5	J	D	E
4YANUJ	7	0	5	J	D	E
62VPBR	7	0	5	J	D	E
63G8XX	7	0	5	J	D	E
6A7LZB	7	0	5	J	D	E
6BJCQM	7	0	5	J	D	E
6BWEQZ	7	0	5	J	D	E
6DK4E8	7	0	5	J	D	E
6EKWGL	7	0	5	J	D	E
6JRBUX	7	0	5	J	D	E
6K29XE	7	0	5	J	D	E
6LEQBR	7	0	5	J	D	E
6NMLNN	7	0	5	J	D	E
6QWXYK	7	0	5	J	D	E
6U3Q7H	7	0	5	J	D	E
6U92EU	7	0	5	J	D	E
6UVV84	7	0	5	J	D	E
6VWQ7	7	0	5	J	D	E
6YCA3P	7	0	5	J	D	E
6YPP8Q	7	0	5	J	D	E
6ZDWZE	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
72BCGD	7	0	5	J	D	E
72TUCY	7	0	5	J	D	E
76AAPW	7	0	5	J	D	E
7FYMEW	7	0	5	J	D	E
7K2FWZ	7	0	5	J	D	E
7R23JR	7	0	5	J	D	E
7VW7FY	7	0	5	J	D	E
7WWPJ9	7	0	5	J	D	E
7X44NU	7	0	5	J	D	E
82RFEH	7	0	5	J	D	E
83UF44	7	0	5	J	D	E
84YPJ9	7	0	5	J	D	E
867ZDQ	7	0	5	J	D	E
87KVDK	7	0	5	J	D	E
8BUD87	7	0	5	J	D	E
8BUPVF	7	0	5	J	D	E
8DLJWQ	7	0	5	J	D	E
8GKCVX	7	0	5	J	D	E
8HE9DG	7	0	5	J	D	E
8KDUEU	7	0	5	J	D	E
8RHHMM	7	0	5	J	D	E
8RU9EC	7	0	5	J	D	E
8YD7WQ	7	0	5	J	D	E
8ZJJE3	7	0	5	J	D	E

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
8ZUZ28	7	0	5	J	D	E
93E7CF	7	0	5	J	D	E
99CN38	7	0	5	J	D	E
9P8FA9	7	0	5	J	D	E
9PTUXK	7	0	5	J	D	E
9UDAU4	7	0	5	J	D	E
9VNN8X	7	0	5	J	D	C
9YCHLR	7	0	5	J	D	E
A3BNL4	7	0	5	J	D	E
ABJRHG	7	0	5	J	D	E
AELM9B	7	0	5	J	D	E
AFB6WP	7	0	5	J	D	E
AFTNVP	7	0	5	J	D	E
AJY6C	7	0	5	J	D	E
ARCVBR	7	0	5	J	D	E
AXN6U2	7	0	5	J	D	E
B6QVBG	7	0	5	J	D	E
B73FUJ	7	0	5	J	D	E
B7HPUK	7	0	5	J	D	E
B8Y9U4	7	0	5	J	D	E
BBGJPM	7	0	5	J	D	E
BHDZ3Q	7	0	5	J	D	E
BJBZND	7	0	5	J	D	E
BLMAQ4	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
BNDWFT	7	0	5	J	D	E
BTJYC9	7	0	5	J	D	E
BUADM6	7	0	5	J	D	E
C3NET7	7	0	5	J	D	E
C48EM3	7	0	5	J	D	E
CA6M2H	7	0	5	J	D	E
CK2AR7	7	0	5	J	D	E
CRKVZW	7	0	5	J	D	E
CT22NM	7	0	5	J	D	E
CTQEKJ	7	0	5	J	D	E
CU3TXE	7	0	5	J	D	E
CU8VBR	7	0	5	J	D	E
CVF7R4	7	0	5	J	D	E
CW2YAN	7	0	5	J	D	E
CW32NK	7	0	5	J	D	E
CWEVC8	7	0	5	J	D	E
CX4KER	7	0	5	J	D	E
D3Y9JK	7	0	5	J	D	E
D6CNPJ	7	0	5	J	D	E
D9AA73	7	0	5	J	D	E
DPA84E	7	0	5	J	D	E
DWCBBP	7	0	5	J	D	E
DXHF9Y	7	0	5	J	D	E
E6KCYX	7	0	5	J	D	E



TABLE 1

<b>WebCode</b>	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
EAFKCX	7	0	5	J	D	E
EDAJJ2	7	0	5	J	D	E
EDDKPF	7	0	5	J	D	E
EFUMXZ	7	0	5	J	D	E
EL6WQB	7	0	5	J	D	E
EMMEVM	7	0	5	J	D	E
ENAUQ4	7	0	5	J	D	E
EU33N4	7	0	5	J	D	E
EULJRR	7	0	5	J	D	E
EVXUJA	7	0	5	J	D	E
EWPDDB3	7	0	5	J	D	E
EXG9VQ	7	0	5	J	D	E
F3UJRL	7	0	5	J	D	E
F8KDED	7	0	5	J	D	E
FAQZ34	7	0	5	J	D	E
FE7TB6	7	0	5	J	D	E
FEPJFH	7	0	5	J	D	E
FMGG7J	7	0	5	J	D	E
FNPXUG	7	0	5	J	D	E
FUG4PW	7	0	5	J	D	E
FV84UU	7	0	5	J	D	E
FVGEY2	7	0	5	J	D	E
FVTNWK	7	0	5	J	D	E
FXHF2J	7	0	5	J	D	E

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
FYRBZ9	7	0	5	J	D	E
FZ8QRC	7	0	5	J	D	E
GA8BHN	7	0	5	J	D	E
GPX6ZF	7	0	5	J	D	E
GQ7YL2	7	0	5	J	D	E
GWYPY6	7	0	5	J	D	E
GXEWBE	7	0	5	J	D	E
GZQFQ4	7	0	5	J	D	E
HG7PTB	7	0	5	J	D	E
HHY9KG	7	0	5	J	D	E
HQWRAR	7	0	5	J	D	E
HRBL4T	7	0	5	J	D	E
HRKMVT	7	0	5	J	D	E
HTWLQ3	7	0	5	J	D	E
HVLWU3	7	0	5	J	D	E
HY7TEL	7	0	5	J	D	E
J7X8GB	7	○	5	J	D	E
J882BQ	7	0	5	J	D	E
JAK8UT	7	0	5	J	D	E
JCJYWR	7	0	5	J	D	E
JE4KAR	7	0	5	J	D	E
JF7CG3	7	0	5	J	D	E
JFG8R9	7	0	5	J	D	E
JL6UKT	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
JMTQRN	7	0	5	J	D	E
JWE2VN	7	0	5	J	D	E
JXRMA	7	0	5	J	D	E
K7CJPM	7	0	5	J	D	E
K8R3TL	7	0	5	J	D	E
KGTMUT	7	0	5	J	D	E
KH83DL	7	0	5	J	D	E
KHU9V2	7	0	5	J	D	E
KKX4JA	7	0	5	J	D	E
KMKDFC	7	0	5	J	D	E
KQ6L3W	7	0	5	J	D	E
KQH97J	7	0	5	J	D	E
KUGR2P	7	0	5	J	D	E
L8LA9J	7	0	5	J	D	E
L8RHHW	7	0	5	J	D	E
L9T7FL	7	0	5	J	D	E
LAAU4F	7	0	5	J	D	E
LBJNZF	7	0	5	J	D	E
LCKG2T	7	0	5	J	D	E
LDL6YP	7	0	5	J	D	E
LGTHX6	7	0	5	J	D	E
LPJEVR	7	0	5	J	D	E
LPNXUG	7	0	5	J	D	E
LR7NVZ	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
LRBFAF	7	0	5	J	D	E
LTZ4RA	7	0	5	J	D	E
LWAA86	7	0	5	J	D	E
LWE7R8	7	0	5	J	D	E
LXAAKA	7	0	5	J	D	E
MK73KW	7	0	5	J	D	E
MQTUUB	7	0	5	J	D	E
MU6ZQJ	7	0	5	J	D	E
MXGZKD	7	0	5	J	D	E
N8EFRU	7	0	5	J	D	E
NBBL37	7	0	5	J	D	E
NCRHWQ	7	0	5	J	D	E
NKZVDF	7	0	5	J	D	E
NP249W	7	0	5	J	D	E
NTY7AY	7	0	5	J	D	E
P7BTBU	7	0	5	J	D	E
P8BZ92	7	0	5	J	D	E
PFXUQ6	7	0	5	J	D	E
PGTXGD	7	0	5	J	D	E
PJZMTF	7	0	5	J	D	E
PNX6AG	7	0	5	J	D	E
PT33GZ	7	0	5	J	D	E
PXN8Q4	7	0	5	J	D	E
PYP944	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
PZQL4N	7	0	5	J	D	E
PZQPMQ	7	0	5	J	D	E
Q6H42Z	7	0	5	J	D	E
Q6JEL4	7	0	5	J	D	E
Q9FQCF	7	0	5	J	D	E
QBJ29V	7	0	5	J	D	E
QDBU9M	7	0	5	J	D	E
QDWLHL	7	0	5	J	D	E
QLB63K	7	○	5	J	D	E
QLJLFW	7	0	5	J	D	E
QRDFUB	7	0	5	J	D	E
QUY7YW	7	0	5	J	D	E
QX997E	7	0	5	J	D	E
QZPLKM	7	0	5	J	D	E
R2QMRQ	7	0	5	J	D	E
R37TH2	7	0	5	J	D	E
R43CCF	7	0	5	J	D	E
RBHTVP	7	0	5	J	D	E
RHLQR9	7	0	5	J	D	E
RJFZWQ	7	0	5	J	D	E
RP24ET	7	0	5	J	D	E
RPM3M6	7	0	5	J	D	E
RQD7C7	7	0	5	J	D	E
RVHU99	7	0	5	J	D	E

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
T2BY8X						
T37TWE	7	0	5	J	D	E
T6WKED	7	0	5	J	D	E
TCC6ZG	7	0	5	J	D	E
TCHTKN	7	0	5	J	D	E
TCRHB8	7	0	5	J	D	E
TDKDVU	7	0	5	J	D	E
TLJHJ7	7	0	5	J	D	E
TMAB6V	7	0	5	J	D	E
TPZ8FN	7	0	5	J	D	E
TTLAMG	7	0	5	J	D	E
TXZPET	7	0	5	J	D	E
U67C8R	7	0	5	J	D	E
U6P2JL	7	0	5	J	D	E
U76RZX	7	0	5	J	D	E
UBTJNR	7	0	5	J	D	E
UGFH6T	7	0	5	J	D	E
UHB3UD	7	0	5	J	D	E
UPQLDC	7	0	5	J	D	E
UTF2UZ	7	0	5	J	D	E
UZFEWN	7	0	5	J	D	E
V4TGED	7	0	5	J	D	E
V66J6D	7	○	B	J	D	E
V6ZR2G	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
V8UUDJ	7	0	5	J	D	E
VB9B3U	7	0	5	J	D	E
VBNAKY	7	0	5	J	D	E
VBUTCV	7	0	5	J	D	E
VDWZRU	7	0	5	J	D	E
VFTV4	7	0	5	J	D	E
VGJDFC	7	0	5	J	D	E
VHAG6C	7	0	5	J	D	E
VMJBRF	7	0	5	J	D	E
VML7Q8	7	0	5	J	D	E
VNTMQX	7	0	5	J	D	E
VU4QK7	7	0	5	J	D	E
VX3ZV9	7	0	5	J	D	E
VXR93J	7	0	5	J	D	E
WDY7PB	7	0	5	J	D	E
WL98T4	7	0	5	J	D	E
WRRHPQ	7	0	5	J	D	E
WTNVM6	7	0	5	J	D	E
WX4LCT	7	0	5	J	D	E
X76A2N	7	0	5	J	D	E
XA46MR	7	0	5	J	D	E
XEGTE9	7	0	5	J	D	E
XEXCET	7	0	5	J	D	E
XGB4M3	7	0	5	J	D	E

TABLE 1

<b>WebCode</b>	<b>Character1</b>	<b>Character2</b>	<b>Character3</b>	<b>Character4</b>	<b>Character5</b>	<b>Character6</b>
XJFYHL	7	0	5	J	D	E
XNEZEE	7	0	5	J	D	E
XPFZ4Z	7	0	5	J	D	E
XU2NDQ	7	0	5	J	D	E
XY7ZZK	7	0	5	J	D	E
Y3MER6	7	0	5	J	D	E
YJRZKL	7	0	5	J	D	E
YQCBVU	7	0	5	J	D	E
YWY24H	7	0	5	J	D	E
YYPJLN	7	0	5	J	D	E
Z3H6NB	7	0	5	J	D	E
Z6DU3Q	7	0	5	J	D	E
ZDX9HN	7	0	5	J	D	E
ZEPAHK	7	0	5	J	D	E
ZKY3JN	7	0	5	J	D	E
ZLQVJF	7	0	5	J	D	E
ZMEKFM	7	0	5	J	D	E
ZNBHVF	7	0	5	J	D	E
ZNXA9U	7	0	5	J	D	E
ZRA7BW	7	0	5	J	D	E
ZRH9DA	7	0	5	J	D	E
ZTWK7E	7	0	5	J	D	E
ZUAM4R	7	0	5	J	D	E
ZURRK6	7	0	5	J	D	E



TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
ZWHWCG	7	0	5	J	D	E

<b>Response Summary</b>						Participants: <b>311</b>
	Character1	Character2	Character3	Character4	Character5	Character6
Consensus	7	0	5	J	D	E
Number	309	306	308	309	309	307
Percent	99.4%	98.4%	99.0%	99.4%	99.4%	98.7%

# Conclusions

TABLE 2

WebCode	Conclusions
22P3R3	The number has been revealed with acid digestion method.
26M2LK	The obliterated serial number on the piece of metal (Exhibit 01) was chemically treated and restored to read 705JDE.
28779W	Examination of the submitted stainless steel bar stock revealed the serial number to have been obliterated. Physical and chemical processing of the submitted bar stock restored the obliterated, original serial number to read "705JDE".
2BG2DM	Item 001 (stainless steel bar stock) was examined and found to have an obliterated area. Standard restoration techniques revealed "705JDE".
2CYEAH	The area on the piece of metal where the serial number was suspected of being removed was magnetically examined and chemically processed. The serial number was restored to read 705JDE.
2VUWPD	The serial number has been restored successfully[sic] and appeared clearly and entirely.
2VXFE2	Restoration of the obliterated serial number was performed on questioned surface of the stainless steel bar stock marked "Item 1". The restored serial number was found to have six characters – "705JDE".
2X4J4Q	MY FINAL INTERPRETATION OF THE SERIAL NUMBER IS 705JDE.
32YY9J	The examination performed on the mill obliterated number stamped on the piece of stainless steel bar stock sent to us as the Item 1.
34C9DB	Chemical restoration of the obliterated area on the bar stock, Item 1, reveals the following number: 705JDE.
3FMJ68	The serial number had at sometime been erased, however, it was recovered at the laboratory using "Magnaflux", a non-destructive technique, when it was found to be "7 0 5 J D E".
3GRVDN	Examination of Item #1 revealed an obliterated serial number. Standard serial number restoration techniques revealed the characters "705JDE".
3HDB2Q	Visual examination and chemical treatment of the serial number area on the metal plate, Item 1, reveal the following number: 705JDE
3KG6NA	Using standard laboratory techniques, the serial number was restored to read: 705JDE.
3N83V8	ITEM 1: corresponds to a metal plate, which after application of the process of electromagnetic attack on the zone and removal of material, it was identified the printed alphanumeric characters corresponding to the serial 705JDE which is compatible in size and shape to the one printed on the aluminum plate that comes with the standard test No. 14-5250.
3RUJMT	In the sector of the piece of metal that was obliterated were revealed the following characters: 705JDE, which correspond to the digits provided as pattern.
3WBWGE	In my opinion, the firearm originally bore six alphanumeric digits and these markings appeared to be '705JDE' prior to obliteration. Consideration may be given to other similar

TABLE 2

WebCode	Conclusions
	digits.
3Z92Q6	The obliterated serial number was restored and determined to be 705JDE.
49ER23	Item #1 is a stainless steel bar stock, serial number located in the center of the steel bar. Serial number restoration procedures were performed and the serial number was restored to read 705JDE.
4ACEMY	The submitted stainless steel bar stock, with a suspected obliterated serial number, was found to have an obliterated serial number. The serial number was restored to "705JDE".
4FHJFR	The grinded surface on the stainless steel bar was electrochemically treated and a set of number was restored and read as "705JDE".
4GR2BA	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number 705JDE.
4GTBK2	Serial number restoration procedures were performed and it was determined that the serial number was 705JDE.
4MYJUV	The number is milled off. The number 705JDE was restored by acid etching. Polishing & 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 metal.
4PYHHL	The stainless steel sample was subjected to a high standard of polishing before chemical etchants were applied. However due to the hardness of the metal and the amount of material that had been removed from the sample, the restoration attempt was unsuccessful and no alpha or numeric characters were observed during any part of the recovery process.
4W6D2G	The serial number on the piece of metal (Exhibit 01) was mechanically and chemically treated and restored to read 705JDE.
4YANUJ	I was able to restore the following six characters from a ground erased area on the submitted sample 705JDE ie seven, zero, five Juliet Delta Echo.
62VPBR	Attempts were made at restoring the obliterated serial number on the metal bar. The area of interest was polished using steel wool. After determining that the surface was a non-ferrous (non-magnetic) material, appropriate chemical etchants to include Ferric Chloride/Acetic Ferric Chloride reagents were utilized in attempt to visualize obliterated characters. After applying the above mentioned techniques a complete serial number of "705JDE" was observed.
63G8XX	Examination of the submitted Item 1 bar stock found the serial number to have been obliterated. Physical and chemical processing of the submitted Item 1 bar stock restored the obliterated, original serial number to read "705JDE".
6A7LZB	1) The serial number of Item 1 was restored using mechanical polishing and chemical etching techniques and was found to be: 705JDE.
6BJCQM	Upon electrochemical treatment on the filed surface, the number 705JDE was restored. Based on my findings, I am of the opinion that 705JDE was the original number stamped on the surface that subsequently obliterated.
6BWEQZ	Serial number restoration procedures revealed the serial number on Item 1, the stainless steel bar stock, to be: 705JDE

TABLE 2

WebCode	Conclusions
6DK4E8	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number 705JDE.
6EKWGL	After use of our standard procedures for obliterated serial numbers we found the following numbers (Left to right): 705JDE.
6JRBUX	The serial number upon Item 1 was restored to read 705JDE.
6K29XE	Serial Number restored to read ( 705JDE )
6LEQBR	The obliterated six alphanumeric characters on the stainless steel bar were restored as followed: 705JDE
6NMLNN	Using standard restoration techniques, the obliterated characters on Item 1 were restored to read: 705JDE.
6QWXYK	I found the serial number to have been obliterated[sic] by filing. On electrochemical treatment, I developed the number 705JDE. I am of the opinion that the original serial number was 705JDE.
6U3Q7H	Visual examination and chemical treatment of the serial number area on the steel bar stock, Item 1, reveal the following number: 705JDE.
6U92EU	The general appearance of the middle part of the piece of stainless steel bar with suspected obliterated serial number in item 1 indicated that the original serial number had been ground away. After the restoration, the original serial number was found to be "705JDE".
6UVV84	Visual examination of this item revealed the presence of grind/polish marks on the center of the bar. This area was etched with acid solutions and the following was restored: 7 0 5 J D E
6VWMQ7	1. The obliterated area on Exhibit 1 (Stainless Steel bar) was visually examined, polished and chemically processed. The characters were restored and appeared as follows: 705JDE.
6YCA3P	Visual examination and chemical treatment of the serial number area on the metal bar stock, Item 1A, reveal the following number: 705JDE
6YPP8Q	The Item #1 bar stock was submitted with an obliterated serial number, in the center area of the bar stock. This area was polished and appropriate chemical etchants were applied in an attempt to recover the serial number. Following restoration, the serial number was found to read 705JDE.
6ZDWZE	The serial number had been removed from the normal location on the exhibit firearm by milling. An examination showed the serial number to be 705JDE.
72BCGD	Examination and processing of the K-1 stainless steel bar restored the original obliterated serial number, which was determined to be 705JDE.
72TUCY	Serial number restoration techniques applied to Item 1 revealed the following characters: 705JDE
76AAPW	The following alpha numeric combination was restored on Item 1: 7 0 5 J D E.
7FYMEW	Visual examination and chemical treatment of the serial number area on the steel plate, Item

TABLE 2

WebCode	Conclusions
	1, reveal the following number: 705JDE.
7K2FWZ	Using chemical etching techniques, the serial number was restored to read 705JDE.
7R23JR	The serial number was restored and reads 705JDE
7VW7FY	Examination of the submitted pieces of stainless steel bar stock found the serial number to have been obliterated. Physical and chemical processing of the submitted steel bar stock restored the obliterated, original serial number to read "705JDE".
7WWPJ9	The obliterated serial number of Item 1 was restored using chemical etching process and found to be: 705JDE.
7X44NU	Examination and chemical processing of the obliterated serial number on item A was restored and determined to be "705JDE".
82RFEH	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1, reveal the following number: 705JDE.
83UF44	The following characters were recovered on item #1: 705JDE
84YPJ9	Examination and processing of the Q-1 stainless steel bar restored the original obliterated serial number, which was determined to be 7 0 5 J D E .
867ZDQ	The serial number was restored to read 705JDE.
87KVDK	On examination, I found that the surface of stainless steel bar stock had been filed. No number was observed. On electrochemical treatment, a number '705JDE' was restored.
8BUD87	Through the restoration process of the serial number, the following was determined: 1. The serial number of the stainless steel bar was restored and corresponds to: 705JDE.
8BUPVF	Restoration procedures on item 1 in exhibit SNR1a revealed the serial number to be: 7 0 5 J D E
8DLJWQ	The " Item 1 " obliterated serial number on the piece of bar stock was chemically[sic] restored to read 705JDE.
8GKCXV	Item #1 - Piece of stainless steel bar stock with defaced serial number. The area was polished and the chemical etching process was utilized to restore the number to read 705JDE.
8HE9DG	Item 1 has a serial number that has been obliterated by grinding from the appearance of grind marks on the aluminium bar surface. The serial number that has been recovered after electrochemical restoration is 705JDE.
8KDUEU	Using chemical etching techniques, the serial number was restored to read 705JDE.
8RHHMM	Item #1 was examined and chemically processed. The original obliterated serial number was restored as "705JDE".
8RU9EC	A forensic procedure applied to the examined steel bar stock restored a series of previously stamped characters that read: 705JDE.
8YD7WQ	Physical and chemical processing of the submitted stainless steel barstock restored the obliterated, original serial number to read 705JDE.

TABLE 2

WebCode	Conclusions
8ZJJE3	The following serial number: 705JDE was recovered and read out as the result of examination of the item designated as Item 1. Decoded alphanumeric characters were compared with the characters located on sample designated as standard. The standard sample was made of aluminium, whereas Item 1 was magnetic.
8ZUZ28	One (1) piece of stainless steel (aprox 2 3/4" x 1" x 1/4") submitted with a suspected obliterated serial number. A one inch square area of surface removed by a drilled/cutting device. Serial number "705JDE" restored using chemical etching process, scribed with number "14-5250" by examiner.
93E7CF	Restoration procedures on exhibit SNR1b (Item 1) revealed the serial number to be: 7 0 5 J D E
99CN38	The obliterated serial number of Exhibit #1 was restored using polishing and chemical etching techniques and was observed to be 705JDE. The Exhibit #2 standard was used for alphanumeric character size, shape and positioning comparison to the Exhibit #1 observed characters.
9P8FA9	Examination and processing of the Q-1 bar stock restored the original obliterated serial number which was determined to be 705JDE.
9PTUXK	The defaced area of the bar stock was chemically processed and the serial number was fully restored to read: 705JDE
9UDAU4	Using standard serial number restoration techniques, the obliterated serial number was restored to read: 705JDE.
9VNN8X	The alphanumeric characters found in the sample (Test 14-5250 item 1) corresponds, in shape, size and position, to numbers 705 and to the letters J, D, C.
9YCHLR	Serial number restoration techniques were applied to the submitted evidence. The restored serial number was determined to be 705JDE.
A3BNL4	The serial number was restored and corresponds to: 705JDE.
ABJRHG	The obliterated serial number on the stainless steel bar Item 1 has been recovered and can be read as follows: 705JDE.
AELM9B	Item: 1 One piece of stainless steel bar stock with suspected obliterated serial number. RESULTS: The serial number area of Item 1 was examined, prepared, and chemically processed. The Item 1 obliterated serial number was determined to be "7 0 5 J D E".
AFB6WP	The exhibit 1 obliterated serial number was examined, magnetically processed and restored to read "705JDE".
AFTNVP	The serial number 705JDE was restored on the piece of metal.
AJVY6C	The Exhibit's composition was examined using SEM/EDX, and was found to be chromium-vanadium stainless steel. The Exhibit's surface was lightly polished, using grinding paper 600. The polished surface was then treated with Fry's reagent. The restored serial number is 705JDE. The results were successfully photographed.
ARCVBR	The serial number on the piece of stainless steel bar stock in item 1 was determined to be 705JDE.

TABLE 2

WebCode	Conclusions
AXN6U2	The obliterated area on Exhibit 1 (metal block) was visually examined, polished, and processed using magnetic particle reagent. The characters were restored to read: 7 0 5 J D E.
B6QVBG	The obliterated surface on the piece of metal (Item 1) was chemically processed. The serial number restored on that obliterated surface is 705JDE.
B73FUJ	All characters could have been seen almost in same time during the examination. They reappeared slightly but steadily. As the characters have been seen, we tried to smoothen the surface. But after two or three times smoothing softly all characters disappeared. After a reapplication of the used acids the characters could be read again. The quality of the metal as well as the embossing of the characters were as high as on the last bar stock from 2013.
B7HPUK	A piece of metal with an area of grinding on the surface was received. Chemical restoration of this area was attempted in order to restore any characters that may have been obliterated. The characters restored were: "705JDE".
B8Y9U4	Serial number restored using chemical etching method.
BBGJPM	The obliterated serial number of Item 1 was restored to be 705JDE.
BHDZ3Q	Serial Number Restoration Analysis: Methodology - Chemical Reagent Etching/Microscopy/Physical. Serial number restoration procedures revealed the serial number on Item 1, the piece of stainless steel, to be: 705JDE
BJBZND	The Item #1 obliterated serial number, located on the flat side of the bar stock, was chemically processed & restored to read "705JDE".
BLMAQ4	Examination and processing of the Q-1 bar stock restored the original obliterated serial number, which was determined to be 705JDE. The K-1 aluminum bar stock was used only for visual comparison purposes.
BNDWFT	Examination of the surface of the stainless steel bar revealed evidence of an obliterated serial number. The surface was treated and the following characters restored: 7,0,5,J,D,E.
BTJYC9	The serial number on the piece of metal (Item 1) was mechanically and chemically treated and restored to read 705JDE.
BUADM6	Using standard laboratory techniques, the serial number/identification data on Item #1 was restored to read: 705JDE.
C3NET7	K-1 was used as a standard for the proficiency examination. Examination and processing of the Q-1 bar stock restored the original obliterated serial number, which was determined to be 705JDE.
C48EM3	RESULTS and INTERPRETATIONS: The serial number was determined to be: 7 0 5 J D E. EXAMINATION: The metal bar was approximately 3" x 1" with an area of apparent grinding. The area was treated with chemical etchants.
CA6M2H	Through the restoration process of the serial number, was determined: 1. The serial number of the piece of "Stainless Steel", described as item # 1, was restored and it correspond to: 705JDE. [sic]
CK2AR7	The obliterated six digit serial number was recovered to read: 7-0-5-J-D-E.

TABLE 2

WebCode	Conclusions
CRKVZW	The stainless steel bar has deep removable in the middle when we used chemical solution in order to recover. The serial number restoration consist of 6 characters as mention above [Table 1 - Recovered Characters].
CT22NM	Examination and processing of Item 1 restored the original obliterated serial number to read "705JDE".
CTQEKJ	The serial number on Item 1 bar stock was restored and reads 705JDE.
CU3TXE	The obliterated serial number on the submitted metal bar stock (Item 1) was fully restored to "705JDE".
CU8VBR	Examination and processing of the item 1 bar stock restored the original obliterated serial number, which was determined to be 705JDE.
CVF7R4	CHEMICAL RESTORATION OF NUMBER ON STAINLESS STEEL SAMPLE. START TIME 10H50 AND FINISHED AT 11H05. NUMBER STAMPED: 7 0 5 J D E
CW2YAN	Piece of stainless steel is obliterated. By chemical and magnetic restoration we found a sequence that fits the pattern on the aluminium bar.
CW32NK	The serial number of Item 1 was restored to read 705JDE.
CWEVC8	The submitted sample is a piece of stainless steel with a milled down area on one side. After preparing the sample, the Magnetic Particle Method was used to examine it. The obliterated serial number was restored with this method and was clearly visible.
CX4KER	The obliterated serial number has been restored to 705JDE.
D3Y9JK	The six defaced alpha-numeric characters on the stainless steel bar stock (item 1) were restored to read 705JDE.
D6CNPJ	A piece of 1" x 3" (non-magnetic) stainless bar with a suspected obliterated serial number. The bar stock submission #1 was examined and photographed before polishing the surface with a dremel tool and applying chemical etching process along with electric current for serial number restoration. Etching solution (Al,Zn) was used for approximately 8 minutes after the polishing and electric current, to restore the serial number of 705JDE.
D9AA73	Examination and chemical processing of item 1 restored the original obliterated serial number, which was determined to be 705JDE.
DPA84E	The obliterated serial number Q1 (Item 1) stainless steel bar stock was restored using polishing and chemical etching solution. The restored serial number is 705JDE.
DWCBBP	On 2-24-14 the following piece of evidence was received by this technician. One 3 x 1 piece of stainless steel, the middle portion had been removed by some type of unknown tool. A request for serial restoration was attached to the piece of evidence. A visual inspection of the evidence was performed and then was photographed. Sandpaper was first used to smooth the area that had been removed, acid was then applied and the following serial was developed (705JDE). The evidence was re-photographed then the area was sealed with a sealer.
DXHF9Y	The restored serial number is 705JDE.
E6KCYX	I visually examined Item #1 and observed that on one side it appears that an area has been



TABLE 2

WebCode	Conclusions
	removed with a fly cutter or similar machining operation. I took digital images of Item #1 and the standard aluminum block with stamped numbers for documentation. I also checked both with a magnet to confirm that they are non-magnetic. I examined Item #1 under the stereomicroscope. I observed that the area that had been removed was cut to a shallow depth and that a pattern of criss-crossing arcs could be seen on the surface. This indicates that a circular cutting tool, like a fly cutter or end mill was used to machine this block of aluminum. I polished the area with a Dremel tool with a gratex[sic] wheel and again with a buffing wheel and rouge. I used chemical etching (Fry's Reagent) in an attempt to restore any obliterated numbers. I was able to restore the serial number to 705JDE. The area was coated with clear nail polish to preserve it. Photographs were taken during the etching process and to document the restored serial number.
EAFKCX	Serial number restoration techniques were applied to Item 1 (stainless steel bar stock). The completely recovered serial number was observed to be 705JDE.
EDAJJ2	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number 705JDE.
EDDKPF	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 numbers recovered are as follows, 705JDE.
EFUMXZ	The bar stock was examined and chemical serial number restoration techniques were use[sic] on the area believed to be associated with the serial number. This method revealed the following characters: 705JDE.
EL6WQB	Examination and chemical EL processing of Item 1 (stainless steel bar stock) determined the suspected original obliterated serial number to be 705JDE.
EMMEVM	The K-1 bar stock was used as a reference as to the design of the alpha numeric characters. Examination and processing of the Q-1 bar stock restored the original obliterated serial number, which was determined to be 705JDE.
ENAUQ4	Note: The following wording is very plain as there is a limited character field in this text box. On Monday 17th March 2014 at the [Laboratory], I commenced a proficiency test on case number: 9560/134. A series of photographs were taken during this examination, I produce these photographs. On the supplied test stainless flat bar stock sample, I restored a series of characters which were evenly spaced and orientated with an even stamping depth, which were similar to the height and stylisation of the sample stamps supplied for comparison. The characters restored read: 705JDE.
EU33N4	The obliterated area on Exhibit 1 was treated chemically with acid etchants in an attempt to obtain a serial number. The serial number "705JDE" was observed.
EULJRR	It is certain that the recovered number is 705JDE
EVXUJA	Examination of Item 1 revealed an obliterated area. Standard chemical restoration procedures were utilized and the characters "705JDE" were restored.
EWPDB3	On Monday 17th March 2014 at the [Laboratory] I commenced the proficiency test on case number 9559/134. During the examination a series of photographs were taken and I produce these photographs. The test kit supplied contained a piece of flat stainless steel with an area of machining in the centre. I performed a restoration on this area and restored a series of characters of even spacing and depth similar to the aluminium block with a series of

TABLE 2

WebCode	Conclusions
	characters for comparison. The restored characters read: 705JDE
EXG9VQ	Serial Number Restoration Analysis: Methodology - Chemical Reagent Etching/Microscopy. Serial number restoration procedures revealed the serial number on Item 1, the steel block, to be: 705JDE
F3UJRL	Examination and processing of Item 1 restored the original, obliterated[sic] serial number. The serial number was determined to be "705JDE".
F8KDED	The number in the obliterated area on the piece of metal (exhibit 1) was restored to read "705JDE."
FAQZ34	The bar/piece of metal was chemically[sic] treated/process and determined to be "705JDE".
FE7TB6	The obliterated serial number on the bar stock was restored to read 705JDE.
FEPJFH	By magnetic restoration, the obliterated serial number was restored: 705JDE, which correspond to the digits provided as pattern.
FMGG7J	Using standard laboratory restoration techniques, the obliterated serial number on Item #1 was restored to read 705JDE.
FNPXUG	Chemical restoration procedures revealed the following serial number: 705JDE
FUG4PW	Examination and processing of the Q-1 steel bar (Item 1) restored the original obliterated serial number, which was determined to be "705JDE".
FV84UU	The submitted stainless steel bar stock was observed to have an area of obliteration. The obliterated area was processed using standard serial number restoration techniques. The serial number was restored to read 705JDE.
FVGEY2	Using standard restoration techniques, the obliterated serial number on Item 1 was restored to read: "705JDE".
FVTNWK	Seial[sic] number restoration processing revealed the number 705JDE.
FXHF2J	The serial number on the steel bar stock (CTS #1) was determined to be 705JDE.
FYRBZ9	Item 1 was examined, its surface prepared, and various etching solutions were applied. The serial number was restored to read: 7 0 5 J D E.
FZ8QRC	The serial number of the piece of stainless steel bar stock, described in Item 1, was chemically processed and restored to read 705JDE.
GA8BHN	The serial number of Item 1 was restored to read "705JDE".
GPX6ZF	The obliterated serial number on Item #1 was restored to read: 7 0 5 J D E
GQ7YL2	The characters restored in the steel bar are alphanumeric 7 O 5 J D E.[sic]
GWYPY6	Upon electrochemical treatment on the filed surface, the original number was restored and read as 705JDE.
GXEWBE	Determine whether a serial number or other identifying mark can be restored from the area of obliteration on the piece of metal in Item 1. FINDINGS AND OPINIONS: Item 1 is a piece of

TABLE 2

WebCode	Conclusions
	stainless steel colored metal bearing an obliterated area which was restored to read 705JDE. The serial number in Item 1 was restored using polishing tools and various chemical etchants. EXHIBITS: Item 1 was received in this laboratory on February 20, 2014, and is being returned with this report via hand carry.
GZQFQ4	Standard chemical restoration techniques revealed the following characters: 705JDE.
HG7PTB	Through the restoration process it was determined that: 1. The serial number of the metal plate (stainless steel), described as item 1, was restored and it corresponds to: 705JDE.
HHY9KG	The item #1 stainless steel bar stock was submitted with an obliterated serial number, located in the center of the bar stock. This area was polished and appropriate chemical etchants were applied in an attempt to recover the serial number. Following restoration, the serial number was restored to read 705JDE.
HQWRAR	1. The obliterated area on Exhibit 1 (Steel bar) was visually examined, polished and chemically processed. The characters were restored and appeared as follows: 705JDE.
HRBL4T	Examination of Item 1 revealed an area where material had been removed. Examination of the tool marks present in the area of interest suggests that the material had been removed by a milling process. This area was prepared and treated with chemical reagents in an effort to restore any obliterated serial number to a legible condition. As a result of this processing, the following serial number was developed: 705JDE
HRKMVT	The number on the material was removed. The digits of the number "705JDE" are restored after the electromagnetic.
HTWLQ3	The serial number of "705JDE" was restored on the piece of a stainless steel bar.
HVLWU3	Item 1 was received with the serial number obliterated. Attempts to restore the serial number were made by polishing the surface with a Dremel tool and by acid etching. This attempt yielded the serial number to read, "705JDE."
HY7TEL	In conclusion, after the evidence had been visibly inspected and initial surface cleaning and sanding, no digits or characters were observed. The evidence was then chemically processed by applying the etching reagent using a cotton swab, removing scratches and markings covering the digits. This process was repeated until the above serial number [Table 1 - Recovered Characters] was restored. Lastly, the evidence was documented.
J7X8GB	Serial number restoration was conducted on item 1, the stainless steel barstock using acidic etching chemical processing techniques. The following six characters were revealed: 705JDE.
J882BQ	The obliterated serial number was restored to read "705JDE".
JAK8UT	Polishing and chemical etching of the tooled area recovered the number "705JDE".
JCJYWR	One (1) metal block, MB-1: Measuring approximately 1" x 2 3/4" x 2/8". "Serial number" obliterated (abrasion). "Serial number" restored to read "705JDE" using chemical etching method. MB-1 scribed "CTS 14-5250" for identification. Note: MB-1 received in a tan envelope marked "Test No. 14-5250 item 1".
JE4KAR	Item 1 is a piece of rectangular metal bar stock with a milled area near the center of one of the large faces. No other indications of obliteration were detected. The milled area was polished and chemical etching was used to restore the following characters: 705JDE

TABLE 2

WebCode	Conclusions
JF7CG3	After application of the electromagnetic process, I determined the serial number of the item as 705JDE.
JFG8R9	Item 1 (stainless steel bar stock) was received with an obliterated serial number. The serial number 705JDE was fully restored by polishing and chemical means.
JL6UKT	By submitting the piece of stainless steel bar to the development process six (6) characters were obtained which corresponds to serial number "0 7 5 J D E".[sic]
JMTQRN	Examination and chemical and magnetic processing restored the obliterated serial number, which was determined to be "705JDE".
JWE2VN	Using standard restoration techniques, the obliterated serial number on item 1 was restored to read: "705JDE".
JXRMA	Number restoration techniques restored a line of characters on the metal. These were "705JDE".
K7CJPM	Serial number restoration procedures were performed and it was determined that the serial number was restored to read: 705JDE.
K8R3TL	Item #1 (stainless steel bar stock) was examined on February 27, 2014. An area of obliteration was observed in the middle portion, on one side of Item #1 (bar stock). The serial number was found to be obliterated by a milling tool with arch type signatures. The obliterated serial number on Item #1 (stainless steel bar stock) was recovered as 705JDE
KGT MUT	The obliterated serial number on Item 1 was polished and chemically restored to reveal the serial number 705JDE.
KH83DL	The obliterated serial number of the bar stock was chemically restored and determined to be "705JDE".
KHU9V2	The obliterated serial number, located in the middle of the sample, was chemically processed. Attempts to restore the obliterated serial number were successful. The restored number is "705JDE".
KKX4JA	The submitted sample plate, 14-5250 Item 1, was subjected to a series of magnetic and chemical etching examinations. The missing/obliterated serial number was fully restored to read: 705JDE.
KMKDFC	The surface was obliterated. By magnetic restoration, the obliterated serial number was restored: 705JDE, which corresponds to the digits provided as pattern.
KQ6L3W	The questioned sample was mechanically and chemically processed and the following characters were developed 705JDE.
KQH97J	Serial number restoration techniques applied[sic] to Item #1 revealed the apparent characters of "705JDE".
KUGR2P	The obliterated serial number on the bar stock, item SNR1-1, was restored to read 705JDE.
L8LA9J	Examination and chemical processing of Item #1 restored the original obliterated serial number which was determined to be "705JDE".

TABLE 2

WebCode	Conclusions
L8RHHW	Standard chemical restoration techniques were applied to Item #1. The following characters were restored: 705JDE
L9T7FL	Using the acid-etch method, the defaced serial number on 0001-AA (metal bar) was restored to read, '705JDE'.
LAAU4F	The defaced serial number was chemically restored to "705JDE".
LBJNZF	Using standard laboratory techniques, the obliterated serial number on Item 1 was restored to read "705JDE".
LCKG2T	Using standard laboratory techniques the serial number/identification data on Item 1 was restored to read - 705JDE.
LDL6YP	In the item sent for study it was recovered, by application of the Fry test, the serial 705JDE. [sic]
LGTHX6	The above number [Table 1 - Recovered Characters] was obliterated through mechanically obliteration of metal surface from the serial number field.
LPJEVR	Center area of a bar stock approx one inch wide was defaced by drilling/abrasion method. Serial number (705JDE) restored using chemical etching process. Bar stock scribed with the RIU number by examiner for identification purposes.
LPNXUG	Attempts to restore the obliterated serial number on the stainless steel bar stock item 1 were successful. The restored serial number is "705JDE"
LR7NVZ	The obliterated serial number on the stainless steel bar stock in Item #1 was completely restored and found to be 705JDE.
LRBFAF	Acid etching was used to restore the serial number, 705JDE.
LTZ4RA	Physical & chemical processing of the submitted bar stock restored the obliterated, original serial number to read "705JDE".
LWAA86	Based on the above examination and findings, I am of my opinion that the original serial number on the piece of stainless steel bar stock "Item 1" is "705JDE".
LWE7R8	The obliterated serial number on Q1 (Item 1 - stainless steel bar stock) was restored using polishing and chemical etching solutions. The restored serial number reads as follows: 705JDE.
LXAAKA	Examination of the submitted metal block found the serial number to have been obliterated. Chemical processing restored the original number to read "705JDE".
MK73KW	The obliterated number on Item 1 was restored and interpreted as "705JDE".
MQTUUB	Standard laboratory procedures for restoring characters stamped in metal have been applied to the end milled area of the submitted piece of aluminum barstock. The characters "705JDE" were restored.
MU6ZQJ	Physical and chemical processing of the submitted bar stock restored the obliterated, original serial number to read "705JDE".
MXGZKD	Chemical treatment was successful in chemically restoring a serial number on the bar. The

TABLE 2

WebCode	Conclusions
	serial number on the bar was restored to read 7 0 5 J D E.
N8EFRU	Item 1 was examined and is as described as above. Examination of Item 1 revealed the presence of an obliterated area. Restoration of the obliterated area revealed the following inscription: 705JDE.
NBBL37	Using standard laboratory restoration techniques, the obliterated serial number on Item 1 was restored to read 7 0 5 J D E.
NCRHWQ	Serial number restoration via acid etching yielded the serial number 705JDE. The serial number 705JDE should be checked through NCIC.
NKZVDF	Using chemical etching techniques the serial number was restored to read 705JDE. The aluminum standards plate was not further examined.
NP249W	The Item 1 piece of bar stock was examined and found to exhibit an obliterated area on the center of the item. The obliterated area was polished and treated with a chemical etchant. This process revealed the following serial number: 705JDE.
NTY7AY	Based on the above examination and findings, I am of the opinion that the original serial number on the piece of stainless steel bar stock 'item 1' is '705JDE'
P7BTBU	The metal bar was a piece of non-magnetic stainless steel. The serial number on the bar appeared to have been removed with an end mill. The metal bar was processed to restore the serial number. The restored number was 705JDE.
P8BZ92	After electrochemical treatment on filed surface, I recover character 705JDE.
PFXUQ6	The obliterated serial number on the piece of stainless steel bar stock, item 1, was restored to read "7 0 5 J D E".
PGTXGD	Using chemical etching techniques the serial number was restored to read 705JDE.
PJZMTF	Visual examination and chemical treatment of the serial number area on the steel bar stock, Item 1, reveal the following number: 705JDE.
PNX6AG	The obliterated number was restored to 705JDE.
PT33GZ	The English translation could be as fallow[sic] : "We have undertaken an attempt to recovery by prolonged application of appropriate corrosive chemical solution. This treatment has been positive. We can read 705JDE."
PXN8Q4	I found there was filling mark on the surface of the steel bar. On electrochemical treatment on the filled surface region, I found a number "705JDE" emerged on the filled surface. Hence, I am of the opinion that the number of the steel bar was tempered and the original number was "705JDE".
PYP944	Visual examination and chemical treatment of the serial area of the bar stock, Item 1A, reveal the following number: 7 0 5 J D E
PZQL4N	The serial number of the stainless steel bar stock (001-A1) was restored and determined to be 705JDE.
PZQPMQ	The Item 1 obliteration was examined and chemically processed and restored to read "705JDE"

TABLE 2

WebCode	Conclusions
Q6H4Z2	Using standard laboratory restoration techniques, the obliterated serial number on Item 1 was restored to read "705JDE"
Q6JEL4	The obliterated serial number on Item #1 was restored and determined to be 705JDE.
Q9FQCF	An obliterated area was observed on item 1. Using standard serial number restoration techniques, the obliterated serial number on item 1 was restored to read: 705JDE.
QBJ29V	Treatment of the serial number site revealed the erased number to be 705JDE.
QDBU9M	The piece of stainless steel bar stock with suspected obliterated serial number, which comes identified as "Test No. 14-5250 Item 1", was subjected to the procedure of developing of serial numbers. The following alphanumeric series was obtained: 705JDE.
QDWLHL	Through the restoration process it was determined that: 1. The serial number of the piece of stainless steel bar stock, described as item 1, was restored and it corresponds to: 705JDE.
QLB63K	After the restoration of the obliterated serial number we could see the following 6 characters 705JDE
QLJLFW	The surface of Item 1 section of stainless steel bar stock was polished to prepare it for the application of chemical etching solutions. The number restored by the restoration process reads: 705JDE.
QRDFUB	The serial number on the piece of stainless bar stock was restored to read 705JDE.
QUY7YW	Examination and processing of the obliterated serial number on the Item 1 bar stock restored the serial number to read "705JDE".
QX997E	Upon completion of polishing and chemical etching of the cut out portion of the stainless steel bar stock, Item 1, I determined that the serial number consists of the following six (6) alphanumeric characters, 705JDE.
QZPLKM	The obliterated area on the submitted piece of stainless steel bar stock was restored using mechanical polishing and chemical etching to reveal the following serial number: 705JDE. The restoration was documented with notes and photographs.
R2QMRQ	A serial number restoration was performed on Laboratory item 001. A CTS test number 14-5250 metal piece with obliterated serial number. The expected serial number configuration is 6 digits consisting of numbers and letters. The serial number was fully restored and appeared to be 705JDE.
R37TH2	The serial number of the Item 1 piece of stainless steel bar stock was restored and determined to be the following: 705JDE.
R43CCF	Item 1-1 one piece of metal-like material measuring approximately 2 ¾ inches by 1 inch by ¼ of an inch: Visual examination of this item revealed the presence of grind marks in the center of one side. This area was etched with acid solutions and the following was restored: 7 0 5 J D E
RBHTVP	Serial number recovered using chemical etching method
RHLQR9	Using standard laboratory restoration techniques, the obliterated serial number was restored to read: 705 JDE.

TABLE 2

WebCode	Conclusions
RJFZWQ	The serial number appeared to have been obliterated through milling. I used polishing and chemical etching techniques to restore the serial number to 705JDE.
RP24ET	SERIAL NUMBER FULLY RESTORED TO READ 705JDE ON 03/18/2014.
RPM3M6	Using standard laboratory restoration techniques, the obliterated serial number on Item 1 was restored to read 7 0 5 J D E.
RQD7C7	The complete serial number of the metal bar (item 1) was noted as 705JDE.
RVHU99	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1, reveal the following number: 705JDE.
T2BY8X	Item #1 was examined and found to be a piece of stainless steel bar stock with suspected obliterated serial number. Attempts were made to recover the serial number of Item #1 by sanding and chemical restoration; however, the sequence could not be restored.
T37TWE	"705JDE" Examination and processing fully restored the original, obliterated serial number.
T6WKED	[No Conclusions Reported.]
TCC6ZG	The erased number on item 1 has been successfully[sic] enhanced as 705JDE.
TCHTKN	Examination and processing of the Q-1 piece of stainless steel restored the original obliterated serial number, which was determined to be 705JDE.
TCRHB8	Using laboratory chemical restoration methods, the serial number was restored to read 705JDE
TDKDVU	The obliterated serial number of Item 1 was restored to read 705JDE
TLJHJ7	The number is milled off. The number 705JDE was restored by acid etching. Polishing and then 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 metal.
TMAB6V	After application of the chemical process on the stainless steel bar received, I determined the serial number as 705JDE.
TPZ8FN	Using standard laboratory techniques, the obliterated serial number was restored to read: 705JDE.
TTLAMG	Examination and chemical processing restored the obliterated serial number, which was determined to be "705JDE".
TXZPET	Magnetic and chemical processing determined the original obliterated serial number to be "705JDE".
U67C8R	Serial Number was Fully Restored to read (705JDE) on 03/21/2014
U6P2JL	I examined the stainless steel bar stock and noted the serial number had been obliterated by apparent milling. I ground and polished the obliterated area. I used chemical etchants to restore the serial number to 705JDE. I documented my examination with photographs and notes.



TABLE 2

WebCode	Conclusions
U76RZX	As received, the stainless steel bar stock had an area of obliteration near the center of one side, and there were no characters visible. Using standard laboratory procedures, the following alpha-numeric characters were restored from the obliterated area: 705JDE.
UBTJNR	The obliterated serial number was restored to read: "705JDE".
UGFH6T	The obliterated serial number of exhibit #1 was restored using chemical etching techniques and was found to be 705JDE.
UHB3UD	The bar stock (Item 1) was physically and chemically processed. Its serial number was restored to read: 705JDE.
UPQLDC	Item 1.1 - The obliterated serial number on Item 1.1 was restored and reads 705JDE.
UTF2UZ	Standard serial number restoration techniques revealed the following characters "705JDE".
UZFEWN	Item 1 has an area of obliteration in the center of the steel bar stock. The obliteration appears to be accomplished by milling and the resulting toolmarks are suitable for identification. The area on the steel bar stock was chemically processed and the serial number was fully restored to read 705JDE.
V4TGED	The Item 1 serial number was fully restored to read 705JDE.
V66J6D	The piece of stainless Steel bar stock sent for study has six characters printed as follows: 7ojobde[sic], The test was done by the Magnaflux method.
V6ZR2G	Serial number was obliterated (deeply abraded), restored using the chemical etching process. CTS number etched on AB1 for identification.
V8UUDJ	I examined the stainless steel block and saw that the serial number had been obliterated by apparent milling. The serial number was located in the middle of the block. I polished the area containing the serial number. Chemical etching restored the serial number to, "705JDE". I documented the restoration with photographs.
VB9B3U	Serial number restoration techniques were applied to Item 1 revealing the number 705JDE.
VBNAKY	Using polishing and acid etching techniques, the obliterated serial number on Item 1 was restored to read: 705JDE.
VBUTCV	The obliterated serial number located on the center of Item 1 was microscopically examined and chemically processed. As a result, the obliterated serial number was restored to read "705JDE".
VDWZRU	As a result of this examination, the following characters where[sic] restored: 705JDE
VFTVW4	Visual examination and chemical treatment of the serial number area on the stainless steel bar stock, Item 1, reveal the following number: 7 0 5 J D E.
VGJDFC	The serial number was chemically restored to 705JDE.
VHAG6C	Serial number restoration techniques were applied to Item 1 (stainless bar stock). The restored number was determined to be 705JDE.
VMJBRF	The restoration techniques applied allowed the identification of the previously deleted serial number "7 0 5 J D E"

TABLE 2

WebCode	Conclusions
VML7Q8	The serial number of Item 1 was mechanically, magnetically, and chemically restored to read 705JDE. This conclusion was verified by Firearms Examiner [Name].
VNTMQX	I restored the obliterated serial number on the submitted piece of metal (item 1) to 705JDE.
VU4QK7	Mechanical and chemical processing of the submitted bar stock revealed that the original serial number is 705JDE.
VX3ZV9	The submitted metal bar from Item 1 was physically, magnetically and chemically processed. Its serial number was restored to read: "705JDE".
VXR93J	Results of Examination: The submitted piece of stainless steel bar stock bearing a suspected obliterated serial number (Item 1) was examined. The bar stock was found to have an area of approximately inch square milled out of one side. The bar stock was in otherwise good physical condition as submitted. An attempt was made to recover the suspected obliterated serial number on the bar stock (Item 1). The recovered serial number was determined to be 705JDE. Images of the recovery will be retained in the [Laboratory] firearms section.
WDY7PB	The obliterated serial number is located in the center of the stainless steel bar stock. Serial number restoration procedures were performed and it was determined that the serial number was: 705JDE.
WL98T4	The number is milled off. The number 705JDE 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 metal.
WRRHPQ	The obliterated area on the metal bar was restored to read 705JDE.
WTNVM6	Serial number restoration techniques were applied to Item 1. The fully restored serial number was determined to be 705JDE.
WX4LCT	The obliterated serial number on the submitted Item 1, a aluminium bar, was restored to read: 705JDE.
X76A2N	The serial number area of Item 1 was prepared and treated with chemical reagents. As a result of these actions, the serial number was successfully restored to read "705JDE".
XA46MR	Item 1: One piece of stainless steel bar stock with suspected obliterated serial number, marked Q1. Q1 serial number "705JDE" was fully restored using polishing and acid etching solutions.
XEGTE9	Serial Number Restoration Analysis: Methodology - Chemical Reagent Etching/Microscopy/Physical. Serial number restoration procedures revealed the serial number on Item 1, the stainless steel bar stock, to be: 705JDE
XEXCET	The serial number is altered, and unreadable. Our attempt to reveal this number, using the 'Fry'[sic] technique, has been successful, giving the following number : 705JDE
XGB4M3	Item 1 is a piece of stainless steel bar stock with suspected obliterated serial number. Using standard restoration techniques, the obliterated serial number on Item 1 was restored to read: 7 0 5 J D E.
XJFYHL	The obliterated serial number on the stainless steel bar stock was restored to read 705JDE.

TABLE 2

WebCode	Conclusions
XNEZEE	After processing the area where the material had been removed on the bar, a serial number was restored and appeared to read: 705JDE.
XPFZ4Z	The area of obliteration was chemically treated and serial number 705JDE was identified.
XU2NDQ	Visual examination and chemical treatment of the serial number area on the stainless steel bar stock, Item 1, reveal the following number: 705JDE.
XY7ZZK	SERIAL NUMBER WAS FULLY RESTORED TO READ (705JDE) ON 04/11/14.
Y3MER6	Restoration of obliterated stamped markings was performed on the surface of Item 1, and the serial number was found to be "705JDE".
YJRZKL	The serial number was removed approximately 0.3 mm thickness. The removed serial number was resulted by the examination: 705JDE
YQCBVU	The submitted piece of steel bar stock, item #1, was examined and found to have an obliterated area present. Sanding and chemical etching of the obliterated area revealed the serial number to be 705JDE. No examination was performed on the aluminum standard block.
YWY24H	Serial number fully restored to read 705JDE on April 9, 2014.
YYPJLN	The obliterated serial number, located in the middle of the piece of stainless steel bar stock, was chemically processed. Attempts to restore the obliterated serial number were successful. The restored number is "705JDE".
Z3H6NB	The serial number of Item 1 as restored is 705JDE.
Z6DU3Q	Visual examination and chemical treatment of the serial number area on the stainless steel bar stock, Item 1A, reveal the following number: 7 0 5 J D E.
ZDX9HN	The obliterated serial number of Item #1 was chemically processed and found to be "705JDE".
ZEPAHK	The serial number "705JDE" was recovered.
ZKY3JN	I conducted a serial number restoration on Item 1. The restoration was successful and a six figure alpha-numeric number was recovered using Fry's Reagent (Crime Scene Examination Method **). The number recoved[sic] was 705JDE
ZLQVJF	After performing he[sic] serial number restoration test over on the provided stainless steel bar, the following serial number was recovered: 705jde.
ZMEKFM	Examination of Item #1 revealed an obliterated area on the front side. Standard chemical restoration techniques revealed the following characters: 705JDE.
ZNBHVF	A serial number restoration was performed on Laboratory Item # 001. A one piece of stainless steel bar stock with obliterated serial number. The serial number was fully restored and appeared to be 705JDE.
ZNXA9U	The submitted piece of steel bar stock, item 1, was examined and found to have an obliterated area present. Chemical etching of the obliterated area revealed the serial number to be 705JDE. No examination was performed on the aluminum standard block.

TABLE 2

WebCode	Conclusions
ZRA7BW	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1, reveal the following number: 705JDE
ZRH9DA	Item 1 was visually examined and found to have an obliterated area. Item 1 was magnetically processed and restored to read: 705JDE. The aluminum standard was used for reference purposes.
ZTWK7E	This number was restored by using the magneto-optical and the fluid pad methods. On item 1 was restored a marking with 6 characters "705JDE".
ZUAM4R	The item 1 serial number was restored and determined to be 705JDE.
ZURRK6	Serial number restoration techniques were applied to the submitted piece of stainless steel bar stock (Item #1) revealing 7 0 5 J D E. Item #1 was not file checked by this [Laboratory]. The submitting agency is reminded to file check the serial number with the [State Agency] if it has not already done so.
ZWHWCG	Examination of the metal bar revealed an obliterated area. Standard Restoration techniques revealed the following "705JDE"

# Sample Preparation

TABLE 3

WebCode	Sample Preparation
22P3R3	1. purifying, 2. polishing, 3. surface degreasing
26M2LK	Polished and cleaned with water.
28779W	A dremel tool was used prior to acid etching.
2BG2DM	Dremel polishing
2CYEAH	Polished to mirror finish with rubberized abrasive wheel and examined using the magnetic particle inspection procedure.
2VUWPD	Polishing and HNO <sub>3</sub> (10%)
2VXFE2	Polishing with sandpaper of various grades (roughness). Cleaning the surface with ethanol.
2X4J4Q	Sanding with fine sanding paper and polished with steel wool.
32YY9J	Before any further operation, picture of the sample is taken cleaning/degreasing was done on the sample prior to the restoration operations (degreasing performed with acetone)
34C9DB	Polishing using dremel tool.
3FMJ68	Light sanding of the surface
3GRVDN	Polishing
3HDB2Q	Polishing using 400 grit sand paper to near-mirror finish.
3KG6NA	No preparation methods were used.
3N83V8	Polishing of affected areas.
3RUJMT	The area was lifted with graphite, then was polished with sand paper N° 400 and 600.
3WBWGE	Cleaned with acetone. Abrasive paper. Dremel sanding tool. Dremel polishing tool. Cleaned with acetone
3Z92Q6	Light sanding
49ER23	Polish and acid etch-swab method
4ACEMY	1) polishing with a dremmel[sic] tool
4FHJFR	[No Sample Preparation Reported.]
4GR2BA	Very light hand polishing with 15 micron finishing film with water.
4GTBK2	Fry's only no prep
4MYJUV	Polishing
4PYHHL	Polishing to a mirror finish.
4W6D2G	Polished with a Dremmel[sic] tool.

TABLE 3

WebCode	Sample Preparation
4YANUJ	Polish after emery. Acetone clean then Fry's etch
62VPBR	The sample was checked to determine if it was ferrous(magnetic) or non-ferrous (non-magnetic). The appropriate chemical[sic] etchants were selected based on the material being non-magnetic and it was then polished with steel wool.
63G8XX	Course[sic] sandpaper followed by fine sandpaper.
6A7LZB	Item 1 was mechanically polished to smooth out the uneven metal surface.
6BJCQM	The stainless steel bar was wiped with acetone to remove dust and any other impurities present on the surface.
6BWEQZ	Smoothed surface with Dremel tool (fine sand paper).
6DK4E8	Polishing and chemical.
6EKWGL	1. Determination of kind of metal - stainless steel. 2. Polish the surface by hand-held power tool.
6JRBUX	Dremel polishing compound and polishing disc.
6K29XE	Sanding
6LEQBR	After failure of Magnetic Particle Method the area of examination on top of the stainless steel bar were prepared by grinding and polishing.
6NMLNN	sanding and polishing
6QWXYK	Visual examination using a magnifying glass.
6U3Q7H	Sanding and polishing
6U92EU	Cleaning with water and organic solvent and polishing the metal surface with a piece of fine-grain sandpaper.
6UVV84	none
6VVMQ7	Exhibit 1 was visually examined; no characters present. Exhibit 1 was then tested with a magnet to determine if ferrous properties were present. Exhibit 1 was not ferrous, consistent with high grade stainless steel. Unable to use non-destructive (Magna-flux) examination to recover serial number. Photo documentation of Exhibit prior to restoration.
6YCA3P	sanding
6YPP8Q	Polished with dremel and polishing disk
6ZDWZE	Using Lab Procedures, Microscopic examination for evidence of number trace followed by a light polish for further trace prior to applying a Reagent.
72BCGD	NONE
72TUCY	Polish the surface
76AAPW	Craytex[sic] polish

TABLE 3

WebCode	Sample Preparation
7FYMEW	Polishing with fine grit sandpaper
7K2FWZ	Exhibit was photographed. A magnet was used to determine ferrous or non-ferrous.
7R23JR	[No Sample Preparation Reported.]
7VW7FY	Checked for ferrous or non-ferrous with magnetic, photographed
7WWPJ9	1. Determine if Item 1 magnetic or non magnetic using a magnet. 2. Determine the obliteration method (milled). 3. Conduct visual and microscopic examination, then photograph Item 1 prior to restoration.
7X44NU	Sanding / polishing using Dremel tool with sanding band, sand papers and Microgrit powder.
82RFEH	Polished
83UF44	Photography
84YPJ9	None. The metal surface was sufficiently[sic] smooth for application of the Fry's without any surface prep.
867ZDQ	The ground area was lightly buffed using a bench grinder outfitted with a Scotch-Brite medium grade deburring wheel.
87KVDK	
8BUD87	I used the polish method with fine grit sand paper (#220) and then I cleaned the surface with acetone.
8BUPVF	Polished with emery wheel
8DLJWQ	1. Polishing
8GKCXV	Polishing with Dremel. Sanding with sandpaper.
8HE9DG	The grind marks on the aluminium bar surface was clean with cotton swab soak in acetone.
8KDUEU	Dremel tool - sanding. Sand paper - sanding. Sand paper - polishing.
8RHHMM	Sample was cleaned with ethyl acetate. Surfaces are normally polished, but since the surface was fairly smooth, recovery methods were used first and then it was lightly polished.
8RU9EC	Casting - method two version one. Surface preparation, polishing - method one version one.
8YD7WQ	A dremel was used to polish the surface.
8ZJJE3	The area with obliterated characters in Item 1 was removed with the use of milling method. The material of Item 1 is magnetic.
8ZUZ28	Polished surface.
93E7CF	Polish with emery wheel.
99CN38	The obliterated portion of the stainless steel bar stock was polished prior to recovery

TABLE 3

WebCode	Sample Preparation
	attempts.
9P8FA9	Light polishing was performed using a soft polishing stone attached to a rotary Dremel tool in order to remove circular mill type marks. Additional polishing/smoothing was performed using a pencil eraser.
9PTUXK	The defaced area was polished.
9UDAU4	The obliterated area was polished with a polishing stone attached to a rotary polishing tool.
9VNN8X	The sample was polished with sand paper No. 220 and 400 horizontally with the sample held at a vertical position.
9YCHLR	The surface was in an acceptable condition with few imperfections. No preparation was necessary.
A3BNL4	The sample was cleaned with a delicate task wipe and later I used a sand paper to polish the area.
ABJRHG	None
AELM9B	Dremel (Cratex wheel)
AFB6WP	Prior to recovery the sample was imaged. After imaging the sample was polished using a dremel tool.
AFTNVP	Polished the defaced area.
AJY6C	The Exhibit's composition was examined using SEM/EDX, and was found to be chromium-vanadium stainless steel. The Exhibit's surface was lightly polished, using grinding paper 600.
ARCVBR	Dremel tool with polishing wheel.
AXN6U2	wet sanding with 220/400/600 grit sandpaper; not all milling marks were removed
B6QVBG	Polished surface with rotary tool. Not magnetic.
B73FUJ	The surface has been smoothened softly with abrasive paper (P400).
B7HPUK	80, 320, 600, 1200 grade wet & dry sand paper to mirror finish
B8Y9U4	Frequent and deep polishing. Clean damp cloth used wipe surface clean. Cloth moisened[sic] with water only.
BBGJPM	Polished with dremel tool abrasive and polishing disks.
BHDZ3Q	Surface sanding with sandpaper. Surface polishing with Dremel polishing wheel and Semichrome Polish.
BJBZND	Polishing w/ dremel tool
BLMAQ4	The area was polished with a Dremel tool.
BNDWFT	Polishing with emery paper



TABLE 3

WebCode	Sample Preparation
BTJYC9	Polish
BUADM6	Prepared area using a dremel with cratex wheel.
C3NET7	As received, an area of the center of Q-1 had been milled. Upon initial examination no characters could be observed. After polishing the center of K-1, no characters could be observed.
C48EM3	I polished the metal using a grinding wheel and polishing felt.
CA6M2H	The surface was cleaned with delicate task wipes and polished with soft sand paper prior to recover the serial number.
CK2AR7	The metal surface was smoothed out with an electric buffer (Dremel).
CRKVZW	We start our examination by using stereomicroscope and after clean it by sandpaper to remove some of scratches that happened by the removal tools. After that we clean it with acetone[sic] and examin[sic] again we did not find any character appeared
CT22NM	Sanding with fine grit sand paper.
CTQEJ	The sample was polished lightly using emery paper prior to any recovery attempts.
CU3TXE	First recovery attempt required no preparation. Subsequent attempts required surface sanding & polishing.
CU8VBR	The area was polished with a Dremel tool and then cleaned with acetone.
CVF7R4	CLEANING WITH SANDPAPER
CW2YAN	1-Surface polishing. 2-Surface cleaning.
CW32NK	sandpaper with H2O
CWEVC8	The sample was cleaned, any remains of grease were removed and the sample was then lacquered white to enhance contrast.
CX4KER	The sample was emiered using an emery cloth.
D3Y9JK	Polishing with Dremel tool.
D6CNPJ	Photographs, stereo microscope and magnet were used prior to the polishing and chemical etching process.
D9AA73	light sanding and polishing
DPA84E	The stainless steel bar stock (Item 1) was marked Q1. The obliterated serial number area was polished and chemical etching solution was applied.
DWCBBP	The item was first photographed and a visual inspection was performed.
DXHF9Y	magnetic vs non magnetic determination, visual examination, dremel sanding, hand sanding
E6KCYX	Polished with Dremel tool and gratex[sic] wheel and buffing wheel with rouge. Cleaned with acetone.

TABLE 3

WebCode	Sample Preparation
EAFKCX	Visual inspection of damaged area with no indications. Stereo scope inspection of damaged area with no indications. Damaged area sanded smooth with fine grit paper on Dremel tool. Some indications of minor marks in middle where restoration techniques should be applied.
EDAJJ2	The surface was cleaned with acetone and then polished with a Dremel-type tool.
EDDKPF	Sand/polish metal, test metal to see if it was ferrous or non-ferrous.
EFUMXZ	The bar stock milled area was polished using cratex wheels on a dremel tool, followed by hand polishing with crocus cloth and then 4/0 steel wool with SimiChrome.
EL6WQB	Polishing with a Dremel tool and a Cratex fine texture polishing wheel.
EMMEVM	The Q-1 bar stock was lightly polished over the entire obliterated area prior to a recovery attempt.
ENAUQ4	1. Notes. 2. Photos. 3. Method 7/Version 2 - PosiTest surface type. 4. Method 2/Version 1 - Cast surface (Reprosil). 5. Method 1/Version 1 - Prepare surface.
EU33N4	Used an abrasive wheel on a Dremel Tool and smoothed the obliterated area on Exhibit 1 to remove the milling marks.
EULJRR	Photos of the original, untreated item 1 have been taken. A casting of the toolmarks by using a casting medium has been made. The toolmarks have been polished with abrasive paper of grain size 120 and 160
EVXUJA	Polishing obliterated area with Dremel tool.
EWPDB3	1. Observations recorded. 2. Photographs taken. 3. Posi-Test the material - Method 7 Version 2.0. 3. Surface prepared using Method 1 Version 1.0. 4. Cast of the surface using Method 2 Version 1.0.
EXG9VQ	Sanding. Polishing.
F3UJRL	Sanding
F8KDED	None
FAQZ34	Sand paper & steel wool
FE7TB6	A light buff was used to smooth the surface.
FEPJFH	The area was photographed then polished with sand paper N°220 y 400. Lifted with graphite. Cleaned with acetone.
FMGG7J	No preparation was used prior to using Magnaflux. Prior to using acidic methods of restoration, the surface was sanded using a handheld Dremel tool.
FNPXUG	Water wet-stone polish by hand
FUG4PW	Light polishing with a Dremel tool.
FV84UU	Light sandpaper application
FVGEY2	Dremel to polish

TABLE 3

WebCode	Sample Preparation
FVTNWK	Dremel tool grinding using extra-fine rubberized adrasive[sic] wheel.
FXHF2J	Polish metal in the obliterated area with "Dremel" Polishing Wheel #425.
FYRBZ9	Hand sanding using #'s 120, 220, and 320 grit sand paper wrapped around a flat mill bastard file followed by hand polishing with steel wool. The bar stock was secured in a bench vise during the above procedures.
FZ8QRC	The obliterated area was polished with sand paper until the surface was smooth.
GA8BHN	Light polishing.
GPX6ZF	Polishing
GQ7YL2	A magnet is used to verify the type of material composing the bar, confirming that the bar is the ferrous material. The area was cleaned with acetone then it was polished with sandpaper No. 400 and 1200 to a mirror finish. Fry's Reagent was then applied with cotton swabs.
GWYPY6	No surface preparation was necessary prior to restoration.
GXEWBE	The area of obliteration was observed macroscopically and microscopically for any character remnants. The obliterated area was then polished with steel wool and observed again both macroscopically and microscopically. The magnetism of the surface was also determined using a yoke magnet.
GZQFQ4	A dremel tool was used to polish the obliterated area.
HG7PTB	The surface was cleaned using a delicate task wipe moistened with acetone and polished, prior to attempt to recover the serial number.
HHY9KG	Polished the obliterated area with a dremal[sic] tool and polishing disk.
HQWRAR	Polishing
HRBL4T	After initial examination under a stereoscope to determine if any vestigial numbers were present, the milled surface on Item 1 was initially prepared by polishing (using a Dremel tool, felt disc, and Flitz brand polishing compound). The area was then degreased and reagents applied. After viewing the results of the reagent application, the area was lightly polished with 0000# steel wool and examined again. The results were recorded, and the process repeated to improve the quality of the restored number. Prior to the final application of reagents, the area was polished more aggressively with an abrasive-impregnated rubber disc rather than Flitz (at this point, the number had already been sufficiently developed to report a result). With the exception of the first cycle, reagent applications were done with an initial use of Fry's Reagent, with 25% nitric acid added to add contrast.
HRKMVT	The area is photographed before examination. The surface is cleaned. It is applied electromagnetic method.
HTWLQ3	Visible examination to obtain partial characters
HVLWU3	Polishing the surface with a Dremel tool.
HY7TEL	The sample was visually inspected, cleaned, and lightly sanded to smooth the surface area prior to chemical recovery methods.

TABLE 3

WebCode	Sample Preparation
J7X8GB	Sanded ground off area with 240 grain paper.
J882BQ	Polish/Chemical etching
JAK8UT	Polish with emery paper
JCJYWR	polishing
JE4KAR	Polishing using a fine Cratex wheel mounted to a Dremel tool.
JF7CG3	The sample was photographed prior to preparation. It was then polished with 80 and then 180 grit sand paper until all possible surface defects were removed. It was then polished with a dremmel[sic] polishing tool with polishing compound until a mirror like finish was achieved. Sample was photographed after polishing.
JFG8R9	Polishing
JL6UKT	The sample was subjeted[sic] to the magnetic particle deposition test for the development of bearings in ferromagnetic materials by Magnaflux magnetic method.
JMTQRN	light sanding and polishing (dremel)
JWE2VN	Sanding with oil using 220, 400, and 600 grit sand paper.
JXRMA	Sample was sanded to a mirror-like finish with wet/dry sand paper - P240, P300, P400, P800, P1200.
K7CJPM	Dremel Polish
K8R3TL	none
KGT MUT	First, an image of the obliterated area was captured. Next, I lightly polished the obliterated area with 220 grit sandpaper.
KH83DL	Dremmel[sic] polish
KHU9V2	I polished the obliterated area using a dremel on a low setting, followed by sandpaper and finished up with steel wool until the surface was smooth and mirror like.
KKX4JA	The surface of the obliterated area was hand polished with 1500-B waterproof sandpaper and fine N-72 Crocus cloth.
KMKDFC	Cleaned with acetone. Polished with sand paper N°220, 360, 400 y 600. Cleaned with acetone.
KQ6L3W	None
KQH97J	Visible and microscopic exam to determine if any characters were visible. Light polish with dremmel[sic] then additional visual and microscopic exam to determine if any characters were visible.
KUGR2P	Polishing with rotary tool.
L8LA9J	Light sanding and buffing to mirror surface with rotary tool.
L8RHHW	None, other than visual and microscopic inspection.

TABLE 3

WebCode	Sample Preparation
L9T7FL	A Dremel tool was used to polish the surface of the metal bar where the apparent obliteration occurred.
LAAU4F	Sanding/Polishing
LBJNZF	Polishing
LCKG2T	April 09 2014 - Conditioned/smoothed obliterated area with rotary tool. Refined conditioning with 320 grit sandpaper.
LDL6YP	The restauration[sic] zone was cleaned and polished.
LGTHX6	The sample wasn't prepared for examination. It was examined under microscope and with the use of black magnetic ink, during which the probable number wasn't deciphered.
LPJEVR	I polished the surface in question with a rotary tool trying to smooth out the surface of all scratches, abrasions, gouges, etc. Prior to using chemical etching method.
LPNXUG	Light sanding and polishing with Dremel tool.
LR7NVZ	None
LRBFAF	Hand polishing. Light mechanical grinding. Acid Etching.
LTZ4RA	Polishing
LWAA86	None
LWE7R8	The stainless steel bar stock (Item 1) was marked Q1, to the right of the suspected obliterated serial number area. The area with the suspected obliterated serial number was polished with a dremel tool, and then the chemical etching solutions were applied.
LXAAKA	Polish obliterated area w/ dremmel[sic] tool
MK73KW	None
MQTUUB	A light polishing with a fine grit polishing wheel on a rotary tool.
MU6ZQJ	Polishing/sanding with sandpaper and dremel wheel.
MXGZKD	Polished with an electrical rotary tool and steel wool (0000 grade) then cleaned with acetone.
N8EFRU	Polishing
NBBL37	Sanding with sandpaper, increasing grit size.
NCRHWQ	Acid etching. First lightly grinded metal to a smooth finish.
NKZVDF	Visual, microscopic, photographic, ground (with dremel), sanded (100, 220, 320, 400 grit sand paper), polishing (dremel), chemical etching (Ferric Chloride, Acidic Ferric Chloride, phosphoric acid, Fry's reagent, Turner's reagent, Davis reagent)
NP249W	Polishing with a dremel tool.

TABLE 3

WebCode	Sample Preparation
NTY7AY	None
P7BTBU	The area where the serial numbers had been removed was polished with an abrasive until the surface was smooth.
P8BZ92	10% Sodium Hydroxide: 5.0 g of Sodium Hydroxide, 45.0 ml of Distilled Water
PFXUQ6	The machined area on item 1 was dry and wet sanded with 400 grit paper and then wet sanded with 600 grit paper.
PGTXGD	Sanding w/ 220 grit sandpaper, followed by sanding w/ 400 grit sandpaper, and polished w/ steel wool.
PJZMTF	Light sanding and polishing.
PNX6AG	Light sanding/polishing.
PT33GZ	Manual polishing. Corrosive chemical solution test (back of the sample).
PXN8Q4	[Laboratory] - COO4 - Examination and Restoration of Erased Identification markings.
PYP944	Polishing with a hand rotary tool with polishing head.
PZQL4N	Dremel Tool and Sandpaper
PZQPMQ	Light polishing
Q6H42Z	Hand sanding using 220 and 400 grit paper.
Q6JEL4	Polishing
Q9FQCF	The obliterated area on item 1 was microscopically examined.
QBJ29V	Polishing of the serial number site using an abrasive stone (MF46)
QDBU9M	a. Observation across instrument of increases. b. Determination of the type of material to be analyzed. c. Development method selection.
QDWLHL	The surface was cleaned using a delicate task wipe moistened with acetone and polished prior to attempt to recover the serial number.
QLB63K	grinding, polishing
QLJLFW	The questioned surface of the bar stock was polished smooth using a polishing wheel on a dremel tool.
QRDFUB	Polish surface & clean with acetone
QUY7YW	Visual examination with polishing with 600 grit sand paper.
QX997E	The obliterated surface was initially examined under a stereo microscope for character remnants. The obliterated surface was then cleaned with delicate task wipers with acetone and again examined under the stereo microscope for character remnants. The obliterated surface was then smoothed and polished using fine grade sand paper. The obliterated surface was again cleaned as mentioned earlier, and examined under a stereo microscope for possible characters that may have been recovered from this physical process.

TABLE 3

WebCode	Sample Preparation
QZPLKM	Mechanical grinding and polishing
R2QMRQ	Polishing with a Dremel tool.
R37TH2	Manual sanding with sandpaper.
R43CCF	none
RBHTVP	Polished with dremel and sand paper
RHLQR9	Magnaflux was done before and after sanding. Acid etching with Fry's Reagent was done after light sanding.
RJFZWQ	Examined with oblique lighting to see if there were any remaining visible characters. Polished with a Dremel to remove toolmarks
RP24ET	SANDING.
RPM3M6	Polished surface with dremel tool using 120 grit wheel band followed by 400 grit sandpaper to a mirror finish.
RQD7C7	Applied magnet and Magnaflux solution. Some sanding with 400-grit sand paper after initial MPI.
RVHU99	Sanding was performed on the sample to remove some of the swirl marks.
T2BY8X	An attempt was made by smoothing the surface with fine-grit sandpaper and steel wool and, once smooth, used various chemical reagents while trying to recover the sequence (see below). When no characters were recovered, further attempts were made using a Dremel tool to further smooth the surface, followed by additional chemical applications. This process was repeated several times.
T37TWE	Hand polish.
T6WKED	[No Sample Preparation Reported.]
TCC6ZG	Photographing, Grinding
TCHTKN	The obliterated area of Q-1 was polished to a mirror-like finish with a file, Dremel tool, sanding drum, wet sandpaper, felt wheel, and Harbor Freight Tools Grey Polishing Compound, Item 96769. Multi-pass circular milling marks, in the form of short arcs, were still visible across the surface. (No characters were visible).
TCRHB8	Surface polished w/ sand paper & Dremel tool with a polishing wheel.
TDKDVU	Polishing the milled area: 1/ with #120 grid sandpaper. 2/ with #600 grid sandpaper with H <sub>2</sub> O.
TLJHJ7	Polishing and acid etching
TMAB6V	The stainless steel bar sample was sanded down to remove the gross scratches caused from the obliterated process and then the bar was polished to a mirror-like finish.
TPZ8FN	None

TABLE 3

WebCode	Sample Preparation
TTLAMG	None.
TXZPET	Cleaning, polishing (w) 320 grit sandpaper
U67C8R	Sanding
U6P2JL	Grinding and polishing
U76RZX	Polishing/sanding
UBTJNR	Polishing using a medium fine abrasive polishing wheel.
UGFH6T	The sample was examined visually microscopically and photographed. It was then lightly sanded with sandpaper
UHB3UD	Polishing with a cratex wheel
UPQLDC	Polished the mill marks until nearly eliminated.
UTF2UZ	Visual examination and polish obliterated area.
UZFEWN	Grind smooth with a dremel tool.
V4TGED	The Item 1 obliterated area was polished with a dremel and polishing wheel.
V66J6D	1. Observation of the piece of stainless steel bar stock. 2. Fine sand paper polishing. 3. Illustration of the jocke, adhering the piece.[sic] 4. Application of the reagent Magnaflux.
V6ZR2G	Initially none due to depth of obliteration. After some etching attempts, I used a dremel.
V8UUDJ	Polishing
VB9B3U	light polishing
VBNKY	Polishing using a buffing wheel and a dremel[sic] tool.
VBUTCV	Item 1 was determined to be nonmagnetic, and the obliterated surface was polished through the use of a dremel.
VDWZRU	No pre treatment
VFTW4	The obliterated area of Item 1 was examined under low magnification using different angles of light to determine if any letters or numbers in the serial number were visible. None were visible. Full strength Fry's reagent and Acidic Ferric Chloride were applied to the edge of the stainless steel bar stock, Item 1, in an area not adjacent to the serial number area in order to test the reactivity of the acids. It was determined that treatment of the obliterated serial number area of Item 1 with the full strength of both acids was acceptable.
VGJDFC	Polishing
VHAG6C	1 - Sanding/polishing until area of obliteration was smooth of grinding marks.
VMJBRF	The surface was treated with acetone, sanded down with 800 grit sandpaper and polished with steel wool
VML7Q8	I polished the obliterated surface of Item 1.



TABLE 3

WebCode	Sample Preparation
VNTMQX	Nothing prior to non-destructive sanding with sand paper and polishing with steel wool.
VU4QK7	Polishing and cleaning
VX3ZV9	Physical - Polishing milled area using a Dremel Tool with a Cratex polishing wheel
VXR93J	Dremel Tool - polished area lightly with #44 disc
WDY7PB	Sanding was used for prep.
WL98T4	Polishing & Acid etching
WRRHPQ	Cleaning; stereomicroscopic examination; polishing with a composite abrasive attachment to rotary tool.
WTNVM6	No preparation methods were used prior to attempts at recovery.
WX4LCT	Item 1 was measured, photographed and drawn (not to scale) to illustrate size, dimension and area of obliteration. Item 1's surface (POO) Point Of Obliteration was polished and treated with chemical etching.
X76A2N	1.) Dremel (Cratex wheel) for smoothing surface. 2.) Sand paper for smoothing and polishing surface. 3.) Steel wool for final polishing of surface.
XA46MR	The stainless steel bar stock (Item 1) was marked Q1. The suspected area of obliteration was polished smooth to a mirror-like finish; Afterwards, chemical etching solutions were then applied.
XEGTE9	The surface of Item 1 was prepared using a dremel tool to sand and polish the surface to a smooth finish.
XEXCET	Sanding
XGB4M3	Buffing
XJFYHL	None
XNEZEE	The surface was not prepared prior to applying the reagents.
XPFZ4Z	Polishing with a fine rubber abrasive wheel on a dremel tool.
XU2NDQ	Light sanding by hand and polishing using a Dremel tool.
XY7ZZK	SANDING
Y3MER6	The sample was polished with sandpaper and cleaned with ethanol.
YJRZKL	The examined surface was cleaned and burnished by sandpaper.
YQCBVU	The sample was hand sanded with sand paper.
YWY24H	Polishing
YYPJLN	The methods used to prepare the sample prior to attempts at recovery were steel wool and sandpaper.

TABLE 3

WebCode	Sample Preparation
Z3H6NB	320 Grit Sandpaper. 220 Grit Sandpaper.
Z6DU3Q	The stainless steel bar stock, Item 1A, was photographed as received. The area of obliteration was visually examined to determine if any serial number characters were visible before restoration was attempted. There were no characters visible. The area of obliteration appeared as if the metal had been taken down significantly. The initial sanding was done carefully and lightly so as not to remove too much metal. The area of obliteration was examined to determine if sanding revealed any characters. There were no characters visible. The gross marks from the tool used to obliterate the serial number were still present and might interfere with reading the number, so a second sanding was done with a Dremel between applications of Acidic Ferric Chloride and Nitric Acid.
ZDX9HN	Visually and microscopically examined area; photographed; polished surface to remove same tool marks/create smoother surface
ZEPAHK	As the sample was flat and clean, it has not been prepared.
ZKY3JN	Application of wet & dry paper from 600 - 1200 grit to remove gross toolmarks. Area cleaned with acetone.
ZLQVJF	The sample was cleaned by direct application of a cleaner/remover product following the manufactures[sic] directions. The cleaner used was SKC-S cleaner/remover by Magnaflux.
ZMEKFM	Dremel tool with abrasive polishing disk, followed by Methanol rinse to remove debris.
ZNBHVF	Polished using a rotary dremel type tool.
ZNXA9U	none
ZRA7BW	Dremel, Sanding, Polishing.
ZRH9DA	Initially Magnaflux was only used since it is the least destructive method. The fifth character was difficult to determine so 600 grit sand paper was used then MagnaFlux again.
ZTWK7E	No methods were used for preparing the sample.
ZUAM4R	none
ZURRK6	The below methods were used to prepare the sample prior to recovery attempts in the following order: 1) Digital photographs were taken of the submitted sample pack and contents prior to examination. 2) The area with the suspected obliterated serial number on Item #1 was visually and microscopically examined; however, no apparent numbers or characters were observed. 3) The area with the suspected obliterated serial number on Item #1 was cleaned with acetone. 4) Item #1 was tested with a Magnaflux brand Y6 model articulated leg magnetic yoke, serial #03009 and found to be non-magnetic. 5) The area with the suspected obliterated serial number on Item #1 was polished with a dremel tool polishing stone.
ZWHWCG	Polished with Dremel wheel

# Recovery Methods

TABLE 4

WebCode	Recovery Methods
22P3R3	Chemical digestion with Adler Reagent II. Chemical digestion for about 5 (five) minutes.
26M2LK	Polished. Acidic Ferric Chloride = 5 mins. Fry's = 2 mins.
28779W	Acidic Ferric Chloride, 10 min; Phosphoric/Nitric Acid, 15 min; Sodium Hydroxide, 5 min; Fryes[sic] reagent, 5 min.
2BG2DM	HNO <sub>3</sub> ; swabs. FeCl <sub>3</sub> ; swabs. NaOH; swabs. Magna Flux sprayed on for better resolution of characters.
2CYEAH	Acidic ferric chloride, ~2 mins. total; 25% nitric acid, ~30 sec. total.
2VUWPD	HNO <sub>3</sub> (10%), 15 min.
2VXFE2	Etching using Fry's reagent (7 times) 10s each time
2X4J4Q	Oblique lighting, Acidic Method 1 - Chromic Acid Reagent (single use @ 45 seconds) no reaction. Acidic Method 2 - Ferric Chloride Reagent (several applications, ranging from 10 seconds to 2 minutes).
32YY9J	Application of an acid solution used for hard metal, followed by a rinse with water - 4 x 30".
34C9DB	Polishing; Fry's, 60 seconds; Fry's, 60 seconds; Fry's, 60 seconds.
3FMJ68	Magnaflux with "7HF MPI Ink"
3GRVDN	Alternating swabs of 20% Nitric Acid and Acidic Ferric Chloride, ~ 15 minutes.
3HDB2Q	25% nitric acid - discontinued after 1 use. Applied about 10 seconds. Diluted Fry's reagent (about 50% by volume) was alternated with acidic ferric chloride - 4 applications of each. Applied about 10 seconds for each application.
3KG6NA	Red Magnaflux, N/A; Black Magnaflux, N/A.
3N83V8	Electromagnetic attack using the Magnaflux and metal particles.
3RUJMT	Magnetic restoration (Magnaflux ® 9CM y 7HF)
3WBWGE	Magnaflux
3Z92Q6	Fry's reagent, ~10 min.
49ER23	Fry's Reagent, Approx 15 min.
4ACEMY	1) acidic ferric chloride ( left on for ~ 10 minutes ). 2) rinsed with water. 3) lightly polished. 4) Modified Fry's reagent (left on and continuously wiped across polished surface for ~ 12 minutes).
4FHJFR	Electrochemical etching using cupric ammonium chloride solution.
4GR2BA	Fry's Reagent, ~10 minutes.

TABLE 4

WebCode	Recovery Methods
4GTBK2	Fry's, seconds.
4MYJUV	Polishing; Acid Etching, frys reagent, 5 mins.
4PYHHL	Copper Ammonium Chloride solution - 15 minutes. Frys Reagent - 15 minutes. Ferric Chloride solution - 15 minutes. Dilute Nitric Acid - 1 minute.
4W6D2G	Acidic Ferric Chloride: 2 minutes. Fry's Reagent: 2 minutes
4YANUJ	As above[Table 3 - Sample Preparation] ~ 30 mins
62VPBR	Ferric Chloride 30 seconds, Ferric Chloride/Acetic Ferric Chloride 45 seconds. Acetic Ferric Chloride 45 seconds, Acetic Ferric Chloride 60-90 seconds.
63G8XX	Fry's solution, ~1 min.
6A7LZB	Davis Reagent, approx 3 minutes; Turner's Reagent, approx 3 minutes; Fry's Reagent, approx 3 minutes; Fry's Reagent, approx 3 minutes; Fry's Reagent, approx 3 minutes.
6BJCQM	Electrochemical etching using Cupric Ammonium Chloride solution. The etching process was carried out by applying steady strokes with a clean cotton-wool swab using the Cupric Ammonium Chloride solution for about 5 minutes
6BWEQZ	Ferric Chloride, Acidic Ferric Chloride, ~5 minutes; 25% Nitric, ~5 minutes; Davis, ~5 minutes; Turner's, ~5 minutes; Fry's, ~10 minutes.
6DK4E8	Polishing w/ a dremel tool; Turner's Reagent, 10 minutes; Polishing w/ a dremel tool; Fry's Reagent, 5 minutes.
6EKWGL	Chemical etching with electrolytic Fry's reagent + 10V (total time 10 min), 1-2 min; Running water to stop process.
6JRBUX	Magnaflux 9CM prepared both, N/A.
6K29XE	Acidic method (acid etching - acidic ferric chloride) 5 minutes
6LEQBR	At first the Magnetic Particle Method was used. Unfortunately the sixth character didn't come up clearly. In the next step acidic method was choosed[sic] by using a reagent that's called "Adler". After leaving the acid on top of the stainless steel bar for about 10 minutes the complete serial number appeared clearly.
6NMLNN	Chemical etch, ~45 min.
6QWXYK	1. Acid electrochemical treatment using cupric ammonium chloride solution as etchant. 2. 6V battery connected to place at one end and a cotton swab at the other end. 3. Apply steady stroke with swab using the etchant, At interval of 1-2 minutes. 4. Wash away etchant with water and view with optimal lighting.
6U3Q7H	Fry's, 20 seconds, 25% Nitric Acid, 20 seconds, Acidic Ferric Chloride, 20 seconds, Fry's, 10 seconds.
6U92EU	Chemical etching using Fry's Solution (CuCl <sub>2</sub> /HCl/H <sub>2</sub> O), 1-2 minutes.

TABLE 4

WebCode	Recovery Methods
6UW84	acid etching - time on material ~ less than one minute.
6VWMQ7	1. Exhibit 1 was gradually sanded and visually examined; no characters present. 2. Exhibit 1 was polished and visually examined; no characters present. 3. Exhibit 1 was sanded again and visually examined; no characters present. 4. Ferric Chloride - approximately 10 mins. 5. Acidic Ferric Chloride - approximately 45 mins. 6. Exhibit 1 was polished and visually examined. 7. Nitric Acid - approximately 5 mins. (Final Result achieved). 8. Fry's Reagent - approximately 1 min for additional contrast.
6YCA3P	fry's reagent
6YPP8Q	Fry's Reagent, 6:15 minutes
6ZDWZE	Microscopic: Polish with rubber wheel: Rub lightly with wet and dry emery: Apply a Fry's Reagent, 1 1/2 hrs: Photograph ghosting alpha/numerics comparing font standards.
72BCGD	Magnetic
72TUCY	1. Magnaflux; 2. Fry's Reagent, 10 min.
76AAPW	Chemical restoration. Fry's, Davis and Turners reagents were used. They were swabbed on using a cotton tipped applicator and then rinsed off with water.
7FYMEW	Fry's reagent. Numerous attempts. Approximately 20 seconds per attempt.
7K2FWZ	Polish w/ sandpaper; Chemical etching: Davis Reagent, a few seconds per swab; Chemical etching: Turner's Reagent, a few seconds per swab; Chemical etching: Fry's Reagent, a few seconds per swab.
7R23JR	Phosphoric/Nitric Acid (Time on material was not recorded), Ferric Chloride (Time on material was not recorded), Acidic Ferric Chloride (Time on material was not recorded)
7VW7FY	polish/sand, 1-2 min; Turners, 5 min; Frys, 5 min; Turners, 10 min.
7WWPJ9	Sand paper; Chemical etching process, 3 hours.
7X44NU	Griffin's Reagent (2 times), ~30 minutes; Acidic Ferric Chloride, ~5 minutes; Griffin's Reagent, ~10 minutes.
82RFEH	Acidic Ferric Chloride, Fry's, 25% Nitric Acid, Fry's, Acidic Ferric Chloride.
83UF44	Magnaflux; Dremel; Acidified Ferric Chloride alternating with Sodium Hydroxide, ~ 1 minute; Fry's alternating with Turner's, ~15 minutes.
84YPJ9	Fry's reagent was used to restore the obliterated serial number. Three (3) applications over 10 minutes was successful in raising the serial number.
867ZDQ	1) Acidic method Ferric Chloride 10-20 sec. 2) Acidic method Acidic Ferric Chloride 10-20 sec. 3) Acidic method Davis's Reagent 10-20 sec. 4) Acidic method Fry's Reagent 10-20 sec. Rebuffed. 5) Acidic method Fry's Reagent 10-20 sec. 5) Acidic method Fry's Reagent 10-20 sec. 6) Acidic method Turner's Reagent 10-20 sec. 7) Acidic method Fry's Reagent 10-20 sec. Rebuffed. 8) Acidic method Fry's Reagent 10-20 sec. 9) Acidic method Fry's Reagent 10-20 sec. 10) Acidic method Fry's Reagent 10-20 sec.

TABLE 4

WebCode	Recovery Methods
87KVDK	Electrochemical treatment (20 minute)
8BUD87	Chemical Restoration Method: Acidic Ferric Chloride Method 1, 5 minutes; Turner Reagent Method 2, 5 minutes; Acidic Ferric Chloride Method 3, 4 minutes.
8BUPVF	Fry's Reagent - 5 min.
8DLJWQ	1. Modified Fry's Reagent.[sic] 2. 25% Solution of Nitric Acid
8GKCV	Fry's Reagent, 3 minutes.
8HE9DG	Electrochemical process using Cupric Chloride solution (acidic solution). Less than 5 minutes.
8KDUEU	Ferric Chloride, 5 sec between each swipe; Acidic Ferric Chloride, 5 sec between each swipe; 25% Nitric Acid, 5 sec. ~40 mins total.
8RHHMM	Acidic Ferric Chloride, less than 10 seconds; Acidic Ferric Chloride, App. 10 sec; 25% Nitric Acid, 15 seconds; lightly polished; Acidic Ferric Chloride, App. 10 sec.
8RU9EC	Chemical restoration, steel - method 9 version one., 1 hour.
8YD7WQ	Fry's Reagent, 15 min.
8ZJJE3	The method with the use of the reagent etching - Adler, 5 minutes.
8ZUZ28	Davis Reagent, Neg; Turner's Reagent, Neg; Nitric Acid, Neg; Fry's Reagent, 705JDE*.
93E7CF	Acidic Ferric Chloride (30 min.), 10% Sodium Hydroxide (2 min.), 25% Nitric Acid (2 min.), Acidic Ferric Chloride (5 min.)
99CN38	Polishing; Chemical Etching (10% Sodium Hydroxide Solution & 25% Nitric Acid Solution), ~20-30 seconds-alternating- (~15 times each); Polishing; Chemical Etching (10% Sodium Hydroxide Solution & 25% Nitric Acid Solution), ~20-30 seconds-alternating (~10 times each); Chemical Etching (Acidic Ferric Chloride), ~2 ½ minutes total (~15-20 seconds at a time).
9P8FA9	Magnetic Particle Method
9PTUXK	1. The material was checked for magnetic reaction, there was none. 2. The area was treated first with Acidic Ferric Chloride with no reaction. Several applications for about 10 min. 3. Re polished to remove deep mill marks. 4. The area was treated with Phosphoric / Nitric acid for about 10 to 15 minutes with no reaction. 5. Treated with FRY'S for an immediate reaction, several applications for about 15 minutes gave a full restoration. 6. Treated with 25% Nitric to hi-lite[sic] the restored number.
9UDAU4	Fry's Reagent, 20 seconds.
9VNN8X	The sample was put in a Magnflux[sic] Y7AC/DC PT No. 517750 and it was put in a Magnaflux 9 CM bath which allowed the recovery of the obliterated[sic] serial number and its comparison with the stock bar.
9YCHLR	Magnetic - Serial number visible; Lightly polished with dremel to remove machine marks;

TABLE 4

WebCode	Recovery Methods
	Magnetic 2nd attempt - serial number visible[sic].
A3BNL4	Sand paper; Turner's Reagent - 6 minutes; Fry's reagent - 5 minutes.
ABJRHG	Fry's Reagent, 15 minutes.
AELM9B	10% HCL - 10 seconds. Davis Reagent - 10 seconds. Turner's Reagent - 1 minute.
AFB6WP	Magnaflux 7HF (Black) Lab Lot# 040299-2 was used; Magnaflux Magnetic Particle[sic] test equipment SN:03007
AFTNVP	Ferric Chloride, 5-10 minutes (total); Acidic Ferric Chloride, 5-10 minutes (total).
AJVY6C	The polished surface was then treated with Fry's reagent for about 15 minutes.
ARCVBR	Fry's reagent, 1 minute.
AXN6U2	magnetic particle with horseshoe magnet
B6QVBG	Acidic Ferric Chloride - 15 sec/minimal reaction, Fry's Reagent - 5 minutes
B73FUJ	For the reconstruction of the characters different steel etching solution have been used. They called Ätzlösung 2, Ätzlösung 3 and Adlerlösung. After the test the metal surface was neutralized with sodium carbonate and passivated with copper sulphate. An order of the etching solutions can not be given, because they have been used more than once and in different order. It depends of the metal quality and the quality of the characters which have to be reconstructed. Because we usually rub the saturated cotton swabs over the surface, we do not have a specific time period on which the acid lays on the material. The whole duration of the examination has been taken about 2 hours.
B7HPUK	20% HNO <sub>3</sub> , ~2 mins; Fry's Reagent, ~30 seconds.
B8Y9U4	Polishing; Acidic Ferric Chloride[sic], 15 to 30 seconds; 25% Hydrochloric Acid, 15 to 30 seconds
BBGJPM	Fry's reagent - 1.5hrs
BHDZ3Q	Davis Reagent, 10 minutes; Fry's Reagent, 30 minutes.
BJBZND	Ferric Chloride, 1m; Acidic Ferric Chloride, 30s; Phosphoric/Nitric Acid, 30s; Acidic Ferric Chloride, 2m; 25% Nitric acid, 5s.
BLMAQ4	Magnetic Particle Inspection.
BNDWFT	Chemical Etching; 10% NaOH, 1-2 mins; Cleaned, swabbed with Fry's Reagent for 1 min
BTJYC9	Acidic Ferric Chloride - about 2 minutes, 5% Nitric Acid - about 2 minutes, Fry's Reagent - about 5 minutes
BUADM6	Acidic Ferric Chloride, 30 sec - 1 min; Acidic Ferric Chloride, 15 sec - 30 sec.
C3NET7	Due to Q-1 being weakly magnetic the Magnetic Particle Inspection Method was performed to recover the serial number.

TABLE 4

WebCode	Recovery Methods
C48EM3	Chemical etching using Fry's reagent. less than 5 minutes.
CA6M2H	Acid Etch Method - Time on Material: Acidic Ferric Chloride - 3 minutes, Turner's Reagent - 3 minutes, Fry's Reagent - 3 minute.
CK2AR7	Electro-magnetic Flux
CRKVZW	We used acidic chemical method solution contain CuCl + HCl + H2O we added to the removable place and itch with cotton for many time up to halve[sic] hour. Then began the character and numbers to appear[sic].
CT22NM	Ferric Chloride, 2 minutes; Acidic Ferric Chloride, 10 minutes; Phosphoric Nitric Acid, 5 minutes; Acidic Ferric Chloride, 25 minutes.
CTQEKJ	Phosphoric/Nitric acid (approx. 10 minutes), Ferric Chloride (approx. 15 minutes), Acidic Ferric chloride (approx. 30 minutes).
CU3TXE	Magnetic Particle Inspection (MPI), N/A; Fry's Reagent, 30 seconds.
CU8VBR	Fry's Reagent: a few seconds, 25% Nitric Acid: a few seconds, Acidic Ferric Chloride: applied continuously with cotton swab for approximately 1 minute.
CVF7R4	APPLICATION OF ACID METHOD - 15 MIN
CW2YAN	Magnetic restoration then chemical restoration (Fry 1 min on material).
CW32NK	sodium hydroxide, cupric acid alternated
CWEVC8	Magnetic Particle Method
CX4KER	Chemotechnicel[sic] etching using solutions containing hydrochloric acid, copper chloride and distilled water ( 2 solutions with different concentrations), 30 min.
D3Y9JK	Alternated Fry's reagent and Acidic Ferric Chloride[sic]. Etchants applied and removed with swab, not left in place.
D6CNPJ	The surface of the non-magnetic sample was polished then etching chemical (Al,Zn) was applied for approximately 8 minutes. The obliterated letters and numbers appeared as 705JDE.
D9AA73	25% Nitric Acid, 30 secs.
DPA84E	No. 1 Fry's Reagent, 5 minutes; No.10 Acidic Ferric Chloride, 3 minutes.
DWCBBP	1. Photographed; 2. Sandpaper to smooth metal; 3. Acid, 5 min; 4. area was then sealed after serial number was restored.
DXHF9Y	method 1 - Ferric Chloride Solution, time on material - 45 minutes. method 2 - Acidic Ferric Chloride Solution, time on material - 45 minutes. method 3 - 10% NaOH, time on material - 45 minutes. method 4 - 10% HNO3 Acid, time on material - 45 minutes. method 5 - 25% HNO3 Acid, time on material - 45 minutes. re-sanded/polished. method 6 - Ferric Chloride Solution, time on material - 45 minutes. method 7 - Acidic Ferric Chloride Solution, time on material - 45 minutes. method 8 - 10% NaOH, time on material



TABLE 4

WebCode	Recovery Methods
	- 45 minutes. method 9 - 10% HNO <sub>3</sub> Acid, time on material - 45 minutes. method 10 - 25% HNO <sub>3</sub> Acid, time on material - 45 minutes. method 11 - Acidic Ferric Chloride Solution, time on material - 30 minutes.
E6KCYX	Fry's Reagent, 8 min.
EAFKCX	Black MagnaFlux
EDAJJ2	Polishing (surface preparation), N/A; Davis Reagent, 2 minutes; Turner's Reagent, 2 minutes; Polishing (surface preparation), N/A; Griffin's Reagent, 5 minutes.
EDDKPF	Sand/polish; chemical polish, 2 min each time; Polish; chemical, 2 min each time.
EFUMXZ	Fry's Reagent was swabed on dried & reswabed, ~45 min total. [sic]
EL6WQB	Fry's Reagent, 5 minutes.
EMMEVM	The method of recovery was the use of magnetic particle inspection. Chemical processing was not necessary after a full restoration with magnetic particle inspection.
ENAUQ4	Method 8/Version 1 - Non-Ferrous restoration, 2 hrs; Method 9/Version 1 - Ferrous restoration (Frys - nil current, 50% dilute), 2 hrs.
EU33N4	Acid Etching with Ferric Chloride, 2 minutes; Acid etching with Frys reagent, 5 minutes.
EULJRR	Etching method used for steel: SIRCHIE "Restor-A-Gel Steel". duration: - 4 times 4 minutes, then photos have been taken. - 2 times 8 minutes, then photos have been taken. - 2 times 8 minutes, then photos have been taken. In total, the gel has been applied for 48 minutes.
EVXUJA	Application of Acidic Ferric Chloride (Batch #7); approx. 1 min. Application of Modified Fry's (Batch #7); approx. 1 min. Application of 10% Sodium Hydroxide (Batch #3); approx. 30 sec. Application of Acidic Ferric Chloride (Batch #7); approx 30 sec. Application of Modified Fry's (Batch #7); approx. 1 min.
EWPD83	Method 8 Version 1.0 Non-Ferrous Metals, 1 hr 45 min; Method 9 Version 1.0 Ferrous Metals, 2 hrs.
EXG9VQ	Davis' Reagent,- 5 minutes; Fry's Reagent, Total of 40 minutes.
F3UJRL	Ferric Chloride, 5 min; Acidic Ferric Chloride, 5 min; Sodium Hydroxide, 5 min; Acidic Ferric Chloride, 30 min.
F8KDED	Fry's Reagent 5 minutes
FAQZ34	Ferric Chloride[sic] -time one (1) minute, then Acidic Ferric Chloride time one (1) minute, then Sodium Hydroxide 10% time one (1) minute, then Nitric Acid 25% time one (1) minute, then back to the beginning[sic].
FE7TB6	Magna Flux, 7HF, Time on Material: less than 1 minute
FEPJFH	Magnetic restoration (Magnaflux ®)
FMGG7J	1. Magnaflux. 2. Sanded surface with Dremel Tool - Turner's Solution(5 minutes) -50% Nitric Acid(5 minutes) - no recovery. 3. No additional surface prep - Fry's Solution(2

TABLE 4

WebCode	Recovery Methods
	minutes) - successful recovery
FNPXUG	Modified Fry's multiple re-polishes & re-application of reagent, 10 to 20 min.
FUG4PW	Ferric Chloride, ~5 minutes; Acidic Ferric Chloride alternating with 25% Nitric Acid, ~10 minutes.
FV84UU	Swabbed with Fry's reagent, 1 minute; Wipe with dry wiper; Swabbed with Fry's reagent, 2 minutes.
FVGEY2	Griffin's reagent, ~5 min.
FVTNWK	Acidic Ferric Chloride - 1st application 3 min. Acetone wash. 2nd application 3 min.
FXHF2J	Turner's reagent 5-10 times, appr. 15 minutes; Fry's reagent appr. 5 times, appr. 10 minutes; Alternated Turner's and Fry's reagents appr. 5 times, appr. 5 minutes.
FYRBZ9	Davis' Reagent - approximately 2 minutes. Turner's Reagent - approximately 2 minutes. Fry's Reagent - approximately 2 minutes.
FZ8QRC	1. Acidic Ferric Chloride, 5 minutes. 2. Turners Reagent, 5 minutes. 3. Fry's Reagent, 2 minutes.
GA8BHN	Alternating Fry's solution and 25% Nitric acid for around 30 minutes.
GPX6ZF	Acidic Method 1: Fry's Reagent - Time on Material: Approximately 1 minute. Acidic Method 2: Fry's Reagent - Time on Material: Approximately 1 minute. Acidic Method 3: Acidic Ferric Chloride - Time on Material: Approximately 2 minutes.
GQ7YL2	Fry's Reagent. Five minutes.
GWYPY6	Electrochemical Treatment Process, 10-15 minutes.
GXEWBE	Polished (steel wool); Ferric Chloride - 1 minute; Acetone (used to clean the area to remove any coating); Ferric Chloride - 2 minutes; Acidic Ferric Chloride - 8 minutes.
GZQFQ4	Modified Fry's - Batch 7; alternating swabs. 20% Nitric Acid - Batch 10; alternating swabs. Acidic Ferric Chloride - Batch 7; alternating swabs. 10% Sodium Hydroxide - Batch 3; alternating swabs. Magnaflux
HG7PTB	I used the Acid Etch Method in which different acids were applied. These are described below: -Acidic Ferric Chloride:5, -Turner's Reagent:2, -Fry's Reagent:1, -Acidic Ferric Chloride:5.
HHY9KG	Fry's reagent, 5 min 37 seconds.
HQWRAR	Magnaflux, Fry's Reagent (~10s) followed immediately by 25% Nitric Acid, then microscopically examined and photographed.
HRBL4T	Fry's Reagent, 1 minute; Fry's Reagent followed by 25% Nitric Acid, 1½ minutes; Fry's Reagent followed by 25% Nitric Acid, 1 minute; Fry's Reagent followed by 25% Nitric Acid, 1½ minutes.
HRKMVT	Electromagnetic method.

TABLE 4

WebCode	Recovery Methods
HTWLQ3	Using electrochemical etching method, applied by ferric chloride reagent in the condition of 5 volt maintained for 10 minutes, to restore the suspected obliterated serial number.
HVLWU3	1. Davis Reagent - 1 minute. 2. Turner's Reagent - 1 minute. 3. Fry's Reagent - 1 minute. 4. Turner's Reagent - 2 minutes. 5. Fry's Reagent - 1 minute. 6. Turner's Reagent - 2 minutes.
HY7TEL	Visual Inspection; Sanding/Filing; Chemical Etching, Frye[sic] (90 min); Neutralization; Documentation.
J7X8GB	Acidic Method 1, Fry's Reagent: approximately 10 minutes
J882BQ	Polish; Acidic Ferric Chloride, 1 Hr; Polish; Acidic Ferric Chloride, 30 minutes.
JAK8UT	Acidic Ferric Chloride, 15 min; Acidic Ferric Chloride, 10 min; Water.
JCJYWR	chemical etching, 5 mins (approx); polishing; chemical etching, 5 mins (approx); polishing; chemical etching, 15 mins (approximately)
JE4KAR	Chemical Etching - Fry's Reagent, 5 minutes.
JF7CG3	Electromagnetic process
JFG8R9	Fort's Solution, 2; Fry's Reagent, 4; Acidic Ferric Chloride, 1; Ferric Chloride, 1.
JL6UKT	Only test magnetic particle deposition was conducted for the development of markings in ferromagnetic materials by the magnetic method Magnaflux.
JMTQRN	MPI; Davis Reagent, ~ 2 minutes; MPI; Davis Reagent (x7), ~ 1 minute each; Turner's Reagent, ~2 Minutes.
JWE2VN	Chemical restoration using Fry's Reagent, intervals 10 min total.
JXRMA	Fry's Reagent (dilute), seconds; Fry's Reagent (concentrated), seconds.
K7CJPM	Ferric Chloride, 5 min; Acidic Ferric Chloride, 15 min; Frys Reagent, 1 min.
K8R3TL	magnetic, n/a.
KGT MUT	Swabbed with Aqua Regia, 10 minutes; Polished with dremel and then swabbed with Aqua Regia, 10 minutes; Polished with dremel and then swabbed with Aqua Regia, 15 minutes; Polished with dremel and then swabbed with Aqua Regia, 15 minutes.
KH83DL	acidic ferric chloride
KHU9V2	Ferric Chloride, Acidic Ferric Chloride, 25% Nitric Acid, 10% Sodium Hydroxide. I used a constant swabbing motion in one direction for all the chemicals.
KKX4JA	Method 1 - Magnetic Particle Inspection. Instant. Blurred results - 705JDE. Method 2 - Chemical etching with Fry's Reagent. One minute. Full recovery, 705JDE. Method 3 - Chemical etching with Turner's Reagent. Instant. Used as a high-lighter for photographic purposes. Full recovery 705JDE.
KMKDFC	Magnetic restoration (Magnaflux ® 7HF)

TABLE 4

WebCode	Recovery Methods
KQ6L3W	Turner's; Nitric Acid, 2-4 sec; Fry[sic]; Nitric Acid, 4-6 sec; polish/Nitric/wipe/Lacquer, 2-4.
KQH97J	Acid Etchant - Fry's, 5 mins.
KUGR2P	Acidic Ferric Chloride, ~10 minutes
L8LA9J	Acid etching (Fry's), 20 min total
L8RHHW	Fry's Reagent, 3-4 seconds. Acidic Ferric Chloride, 3-4 seconds. 20% Nitric Acid, 3-4 seconds. Alternating
L9T7FL	Acidic Ferric Chloride, Ferric Chloride, Nitric/Phosphoric Acid, and 50% HCL were used. Each acid was allowed to sit for ~ 1 min. Acetone was also used to clean the metal bar for picture taking purposes.
LAAU4F	1 - Ferric Chloride (5 minutes). 2 - Acidic Ferric Chloride (10 minutes)
LBJNZF	Sodium Hydroxide/50% Nitric Acid, 6 hrs. Turner's reagent/Fry's reagent, 5 mins
LCKG2T	April 10 2014 - Swabbed obliterated area with 10% NaOH; Swabbed obliterated area with Acidic Ferric Chloride (FeCl <sub>3</sub> ), approximately 5-10 min total intermittently; Swabbed obliterated area with 30% Nitric acid (HNO <sub>3</sub> ), approximately 15-20 min total intermittently.
LDL6YP	Chemical method (Fry). 8 minutes.
LGTHX6	The sample was eaten away using chemical solution: CuCl <sub>2</sub> x 2H <sub>2</sub> O + HCl + H <sub>2</sub> O, Time on material: 5 min.
LPJEVR	Nitric Acid, 1-3 mins; Acidic Ferric Chloride, 1-3 mins; Fry's Reagent, 1-3 mins.
LPNXUG	MPI, 30 seconds "705JDE". To fix the serial number, acidic methods used; Acidic Ferric Chloride for 60 seconds-no reaction, 25% Nitric Acid for 60 seconds-no reaction, Davis Reagent for 60 seconds-no reaction, Fry's Reagent for 30 seconds, Fry's Reagent for 30 seconds-fixed "705JDE"
LR7NVZ	Acidic etching solutions applied, ~15 minutes.
LRBFAF	Turner's Reagent, ~30 seconds; Fry's Reagent, ~5-10 seconds over repeated intervals.
LTZ4RA	Ferric Chloride; Acidic Ferric Chloride.
LWAA86	Electrochemical etching using Cupric Ammonium Chlorida[sic] Solution for 10 to 15 minutes.
LWE7R8	No. 1 Fry's Reagent, 5-7 minutes; No. 10 Acidic Ferric Chloride, 2-3 minutes.
LXAAKA	Chemical etchant for non-ferrous materials, total of 10 min.
MK73KW	Magnetic Particle Inspection Method.
MQTUUB	Cobalt Chloride application, 4 minutes; 25% Hydrochloric Acid, 30 seconds.
MU6ZQJ	Fry's Reagent, ~2 min increments, ~10 min total.

TABLE 4

WebCode	Recovery Methods
MXGZKD	25% Nitric Acid (30 seconds), Ferric Chloride Solution (10 minutes), Fry's Reagent (30 seconds)
N8EFRU	Magnetic particle inspection (Magnaflux); Fry's reagent, ~5 minutes.
NBBL37	Acid etch (Etching Solution 1 - Turner's Reagent), 5 minutes; Acid etch (Etching Solution 2 - Fry's Reagent), 10 minutes; Acid etch (Etching Solution 1 - Turner's Reagent), 5 minutes; Sand with fine sandpaper; Acid etch (Etching Solution 2 - Fry's Reagent), 5 minutes; Black Magnetic Particle Inspection; Red Magnetic Particle Inspection.
NCRHWQ	Acid etching using "Fryes"[sic] Reagent, ~3 min.
NKZVDF	ground (w/ dremel); sanding (100, 220, 320, 400 grit sand paper); polishing (dremel); chemical etching, 45 min. total.
NP249W	Polishing, n/a; Fry's Reagent, ~20 min; Polishing, n/a; Fry's Reagent, ~10 min.
NTY7AY	Electrochemical etching using Cupric Ammonium Chloride solution. The etching process was carried out by applying steady strokes with a swab using the etchant for about 20 minutes.
P7BTBU	10% HCl, 3 hours; Davis Reagent, 4 hours; Fry's Reagent, 3 hours.
P8BZ92	Electrochemical treatment using 10% Sodium Hydroxide.
PFXUQ6	magnetic particle inspection (Magnavis 7HF) with a horseshoe magnet, N/A.
PGTXGD	Ferric Chloride, ~5 min; Acidic Ferric Chloride, ~ 5 min.
PJZMTF	Chemical Etching- Fry's Reagent - Time not measured. Chemical Etching- 25% Nitric Acid - Time not measured. Chemical Etching- Acidic Ferric Chloride - Time not measured. Chemical Etching- Fry's Reagent & 25% Nitric Acid in Tandem - Time not measured.
PNX6AG	Fry's, 5 mins; Ferric Chloride, 5 mins.
PT33GZ	Acidic method. Left about a couple of secondes[sic].
PXN8Q4	Chemical Treatment using 5% Sodium Hydroxide Solution for 15 minutes and followed by, Electrochemical treatment using Cupric Ammomiun[sic] Chloride Solution for 8 minutes.
PYP944	Fry's reagent, 5 minutes
PZQL4N	Chemical Etching: Ferric Acid / 10% Nitric Acid, Acidic Ferric Acid / 25% Nitric Acid, Davis Reagent, Turner's Reagent, Fry's Reagent.
PZQPMQ	Chemicals (ferric cholorida[sic], nitric acid, acidic ferric cholorida[sic], davis and fry's reagents), various.
Q6H42Z	Magnaflux prior to any sample preparation, then sanding, then Magnaflux a second time. This was followed by an acidic method using [Laboratory] Etching solution #2 for approximately 10 minutes.
Q6JEL4	Chemical, approx. 60 seconds.

TABLE 4

WebCode	Recovery Methods
Q9FQCF	step 1: a rotary tool was used to polish obliterated area; step 2: cotton tip swabs moistened with Fry's reagent were applied to area, 1-2 minutes; step 1 was repeated as needed, followed by step 2 until full restoration was reached
QBJ29V	Polishing with stone, 30 mins: Fry's Reagent, 1 hour.
QDBU9M	Magnaflux Spray of magnetic particles (7HF Prepared Bath).
QDWLHL	Fry's Reagent, 10 minutes.
QLB63K	We used an acidic method, the residence time was about 60s.
QLJLFW	Polishing; Acidic Method, ~ 8 minutes.
QRDFUB	Acid etch, 10 min; clean surface reapply acid, 15 min.
QUY7YW	Visual; Magnetic; Chemical, <1 min; Magnetic.
QX997E	1. Chemical Etching - Application of Fry's reagent[sic] with a cotton-tipped swab and allowed time to react, seven (7) minutes.
QZPLKM	Chemical etching (Fry's Reagent), 15-20 mins.
R2QMRQ	Four applications of undiluted Fry's reagent at 30 second intervals.
R37TH2	Chemical etching, not calculated - simply long enough to see a reaction.
R43CCF	acidic ferric chloride - repeated applications (seconds/application)
RBHTVP	Chemical Fry's Reagent, 2 minutes.
RHLQR9	Magnaflux; Sanding; Acid etching (Fry's) - Time on material - Varied (less than 1 min)
RJFZWQ	Ferric Chloride, 1 minute; Acidic Ferric Chloride, 15 minutes; Nitric acid, 5 minutes; Acidic Ferric Chloride, 15 minutes.
RP24ET	ACIDIC METHOD; FERRIC CHLORIDE; ACIDIC FERRIC CHLORIDE
RPM3M6	Fry's Reagent, approximately 5 minutes
RQD7C7	Magnetic Particle Inspection
RVHU99	Acidic, Fry's reagent - x 10 (left on about 10s each time)
T2BY8X	Sanding (Fine-grit sandpaper, steel wool, Dremel tool). Chemical Restoration reagents (Cupric Chloride, 25% Nitric Acid, Ferric Chloride, 10% sodium Hydroxide**) ** Several minutes for each reagent; final attempt made was overnight.
T37TWE	Magnetic Particle Inspection
T6WKED	[No Recovery Methods Reported.]
TCC6ZG	Chemical enhancement (Fry's reagent) - Time on material about 5 min. Photographing the

TABLE 4

WebCode	Recovery Methods
	result
TCHTKN	Magnetic Particle; Davis' Reagent, ~2 minutes; Turner's Reagent, ~2 minutes.
TCRHB8	Modified Fry's Reagent, ~2-5 min; 20% Nitric acid, ~1 min; Repolished; Modified Fry's Reagent, ~2 min; 20% Nitric acid, ~1 min.
TDKDVU	Apply the acidic solution to the surface (HCl/CuCl/CuCl <sub>2</sub> -2(H <sub>2</sub> O)/(H <sub>2</sub> O), 2 minutes.
TLJHJ7	Polishing; Acid Etching Fry's Reagent, 7 mins.
TMAB6V	Chemical process - utilising Fry's Reagent, Average 3 minutes.
TPZ8FN	Magnetic Particle Method, NA.
TTLAMG	-Davis reagent (10s), -Davis reagent (30s), -Fry's reagent (x2), -Polish/dremel, -Fry's reagent (10s), -Fry's reagent (30s), -Fry's reagent (10s).
TXZPET	Magnetic; Chemical processing (w) electro-etch, 2-3 minutes.
U67C8R	Fry's Reagent for 1 minute. Acidic Ferric Chloride for 3 minutes.
U6P2JL	Fry's Reagent, 30 seconds.
U76RZX	Acidic Ferric Chloride, Varied; 25% Nitric Acid, Varied; Acidic Ferric Chloride, Varied; 25% Nitric Acid, Varied; Acidic Ferric Chloride, Varied.
UBTJNR	Etching (using Griffin's Reagent), ~30 seconds.
UGFH6T	Turner's reagent, wiped w/ swab; Fry's reagent, wiped w/ swab.
UHB3UD	Chemical etching with Fry's Reagent, 5-10 minutes.
UPQLDC	Fry's 15-20 minutes
UTF2UZ	20% Nitric Acid for 3 swabs. Acidic Ferric Chloric for 6 swabs. Fry's for 3 swabs.
UZFEWN	25% Ferric Chloride, 4 minutes; 25% Nitric Acid, 1 minute; Acidic Ferric Chloride, 52 minutes; Phosphoric/Nitric Acid, 10 minutes.
V4TGED	Davis Reagent, ~1 minute; Fry's Reagent - 1st treatment, ~1 minute; Fry's Reagent - 2nd treatment, ~1 minute.
V66J6D	The method of proof of Magnaflux.
V6ZR2G	Chemical etching, the test sample was ferrous metal; Ferric Chloride, 15-60 seconds; Acidic Ferric Chloride, 15-60 seconds; Turners Reagent, 15-60 seconds.
V8UUDJ	Polishing; Ferric Chloride; Polishing; Acidic Ferric Chloride, ~6-10 minutes
VB9B3U	Chemical Etchant (Fry's Reagent), approx 5 minutes.
VBNAKY	Fry's Reagent (3X), < 1 min. per app.; 25% Nitric Acid, < 1 min.

TABLE 4

WebCode	Recovery Methods
VBUTCV	Acidic Method 1 - Acidic Ferric Chloride, ~10 seconds; 25% Nitric Acid, ~10 seconds; X 4 times. Acidic Method 2 - 10% Sodium Hydroxide, ~10 second; 25% Nitric Acide[sic], ~10 seconds X 3 times.
VDWZRU	10% ferric chloride solution and heat, continual swabbing; 25% hydrochloric acid and heat, continual swabbing.
VFTW4	The obliterated serial number area of Item 1 was treated with Fry's Reagent and Acidic Ferric Chloride alternately. Between each acid treatment, the obliterated serial number area of Item 1 was observed using a stereomicroscope and angled lighting. The total time of acid application was approximately 30 - 45 minutes. After the serial number was revealed, the stainless steel bar stock, Item 1, was rinsed with water, treated with NaHCO <sub>3</sub> , and oiled with WD-40.
VGJDFC	Ferric Chloride - 3 minutes, Acidic Ferric Chloride - 4 minutes
VHAG6C	1 - 25% Nitric Acid, 5 minutes; 2 - Fry's Reagent, 3 minutes.
VMJBRF	Chemical, 20 minutes
VML7Q8	Polish; Magnetic particle suspension/magnet; Polish; Magnetic particle suspension/magnet; Turner's (90 seconds); Davis (90 seconds); Fry's (5 seconds); Davis (10 seconds); Polish; Magnetic Particle suspension/magnet; Davis (3 minutes); Davis/Fry's (2 minutes).
VNTMQX	Non-destructive (Magnaflux); Chemical etchant (Fry's reagent), < 5 min.
VU4QK7	Magnetic particle (magna flux); Fry's solution, about 2 minutes.
VX3ZV9	Magna flux magnet and horseshoe magnet and aerosol spray (black); Chemical etching - Fry's Reagent (CuCl <sub>2</sub> , HCl & H <sub>2</sub> O), ~60 seconds
VXR93J	Nitric Acid 25%, 5 min; Fry's Reagent 100%, 5 min; Sodium Hyd. 10%, 3 min.
WDY7PB	Dremel Polishing; Acidic Ferric Chloride, Thirty (30) Minutes.
WL98T4	Polishing; Acid etching Fry's Reagent, 5 mins.
WRRHPQ	Magnaflux/magnetic particle inspection (MPI); Polishing surface/additional M.P.I; Acid etching/Fry's Reagent, 10 minutes.
WTNVM6	Magnetic (Magnaflux ®) procedure
WX4LCT	Polish, 5-7 sec; Ferric Chloride, 10 sec; Acidic Chloride, 12 sec; Ferric Chloride, 3 sec.
X76A2N	Acid Method 1 (Turner's Reagent), approximately 2 minutes on material. Acid Method 2 (Fry's Reagent), approximately 5 minutes on material.
XA46MR	#1 Fry's Reagent, 5 minutes; #4 Davis Reagent, 10 minutes; #11 Ferric Chloride, 3 minutes.
XEGTE9	Visual Exam (Microscopy), N/A; Physical (sand and polish), N/A; Chemical (Nitric Acid 25%), ~:45 seconds; Chemical (Davis Reagent), ~:30 seconds; Chemical (Fry's Reagent) x 2, ~1 min and ~10 min.



TABLE 4

WebCode	Recovery Methods
XEXCET	1/ Copper (II) Chloride / Ethanol / Hydrochloric Acid - approx. 10 min. 2/ Nitric Acid / Hydrochloric Acid - approx. 1 min. 3/ Copper (II) Chloride / Hydrochloric Acid - approx. 1 min.
XGB4M3	Acid 1 - Fry's - 1 min. Acid 2 - Acidic Ferric Chloride - 2 min
XJFYHL	Magna Flux - Prepared Bath 7HF. Acidic Ferric Chloride - Time on Material: 2 minutes
XNEZEE	Davis Reagent was initially applied to the surface for approximately 2-3 minutes. Fry's Reagent was subsequently applied to the surface for approximately 2-3 minutes.
XPFZ4Z	Chemical Frye's[sic] Reagent, 2 mins.
XU2NDQ	Fry's Reagent was used- applied with a cotton swab- rubbing motion. Repeated multiple applications were made with the time the reagent was left on the surface varying from one to five minutes.
XY7ZZK	ACID ETCHING , FRY'S 10 SECS. ACID ETCHING , ACIDIC FERRIC CHLORIDE 15 SECS.
Y3MER6	Fry's reagent; 5-10 seconds
YJRZKL	Electrolytic process of etching by Fry's reagent, 5 mins. (180 ml of cc. HCl + 45 g CuCl <sub>2</sub> + 10 ml of H <sub>2</sub> O).
YQCBVU	Chemical etching with Fry's Reagent was used. The reagent was continuously swiped across the material until the serial number was restored.
YWY24H	Acidic Ferric Chloride, Approximately 1-2 minutes.
YYPJLN	Acidic Meathod[sic] #1 - Acidic Ferric Chloride, Time on Material was approx 3-5 seconds. Acidic Meathod[sic] #2 - Nitric Acid, Time on Material was approx 3-5 seconds.
Z3H6NB	Acidic Ferric Chloride Lot #031313, 10-20 seconds multiple times; Phosphoric Acid/Nitric Acid Lot #070813, 5-10 seconds multiple times; 15% Nitric Acid Lot# 111208, 5-10 seconds multiple times; Fry's Reagent Lot# 121609, 5-10 seconds multiple times
Z6DU3Q	Acidic Ferric Chloride - 5 applications, Nitric Acid - 2 applications, a total of 10 minutes. Sanding with Dremel. Acidic Ferric Chloride - 5 applications, Nitric Acid - 1 application, a total of 10 minutes. Neutralization - 1 application. Fry's Reagent - 5 applications, Nitric Acid - 1 application, Fry's Reagent - 3 applications, a total of 10 minutes. Neutralization - 1 application. Gun oil on restored area.
ZDX9HN	Polishing; Fry's Reagent, ~30 min (swabbed).
ZEPAHK	Acidic method: HCl + CuCl <sub>2</sub> + CuCl + H <sub>2</sub> O : 10 minutes
ZKY3JN	Acidic method - Fry's Reagent applied to material for between 3 - 5 minutes before alpha numerics reliably identified.
ZLQVJF	Magnetic particle method. N/A.
ZMEKFM	Dremel Tool with abrasive polishing disk, followed by Methanol rinse. Acidic Ferric Chloride

TABLE 4

WebCode	Recovery Methods
	(Batch #7) application with cotton swabs; ~40 swabs. 20% Nitric Acid (Batch #10) application with cotton swabs; ~5 swabs
ZNBHVF	Polished using rotary tool before applying reagent each time. Davis, Turner's, and Fry's Reagents are all acidic. Order of application: Davis 4 minutes (2 min - 2 times), Turner's 5 minutes (2 min, 3 min), Fry's 1 minute (30 seconds - 2 times), Turner's 10 minutes (2 min - 5 times), Fry's 13 minutes (30 seconds, 2 min, 1.5 min, 2.5 min, 2 min, 2.5 min, 2 min)
ZNXA9U	Fry's Reagent
ZRA7BW	Nitric Acid 25%, 15 min; Acidic Ferric Chloride, 20 min; Fry's Reagent, 20 min; Nitric Acid 25%, 10 min; Fry's Reagent, 25 min.
ZRH9DA	(1) MagnaFlux; (2) Wet sanding; (3) MagnaFlux.
ZTWK7E	magneto-optical method; magnetic field method (fluid pad).
ZUAM4R	Fry's Reagent, ~ 20 minutes.
ZURRK6	Acid Etchant - Acidic Ferric Chloride, 20 Minutes.
ZWHWCG	Treated with alternating swabs of Modified Fry's reagent and 30% Nitric Acid, 1 Hour.

<b>Response Summary</b>		Participants: <b>311</b>
<b>Recovery Methods</b>		
	<b>Chemical Processing:</b>	<b>248</b>
	<b>Magnetic Processing:</b>	<b>36</b>
	<b>Combined Magnetic and Chemical Processing:</b>	<b>25</b>
	<b>No Response:</b>	<b>1</b>

# Additional Comments

TABLE 5

WebCode	Additional Comments
EWPDB3	Case file created and stored in [Laboratory] secure storage. Cast recorded on Forensic Case Management and stored with case file.
ENAUQ4	1. Full [Laboratory] case file created and stored in the [Laboratory] file room. 2. No vehicles (cars, trucks solos, machinery etc) use stainless steel stamped ID points.
VDWZRU	Heat applied and alternative swabbing of chemicals. 40 minutes to restore characters.
4PYHHL	Only the copper ammonium chloride solution seemed to have a reaction with the metal. As nothing was seen using this chemical, the others were also tried afterwards to see if any reaction could be obtained. All chemical etchants did not display any letters or numerals and the restoration was unsuccessful.
83UF44	Non-magnetic austenitic stainless steel - very clever CTS!
DXHF9Y	The bar stock was sanded/polished, treated with all five chemicals with no results at all. the bar stock was re-sanded/polished and again treated with all five chemicals, still with not one trace of any serial number what so ever. I then applied Acidic Ferric Chloride a third time for contrast and the number appeared.
ZNBHVF	Application of the Fry's reagent instantly turned the serial number area cloudy. The white cloudy appearance was unexpected and not something this examiner has experienced with serial number restorations on steel firearms. After just two short applications of Fry's, the analyst returned to using Turner's to slow down and control the process. The analyst was concerned that Fry's might be too strong for this type of stainless steel and for how the numbers were applied to the metal. In the end, analyst resorted to using Fry's to restore the number.
P7BTBU	Next time, for something completely different, use a Copper-Beryllium alloy for the serial number restoration.
XU2NDQ	Extra applications of Fry's after the serial number became visible were done for purposes of obtaining a darker image for better photography.
Z6DU3Q	Stainless steel bar stock serial number removed = Item 1A. Aluminum bar stock = Item 1B. The stainless steel bar stock is non-magnetic indicating the addition of nickel. I was concerned that Fry's Reagent might etch too aggressively, so initial applications were made with Acidic Ferric Chloride followed by Nitric Acid, both applied with cotton swabs. After 20 minutes using these acids, there was no visible restoration of the serial number so Fry's Reagent was applied with success.
3HDB2Q	No neutralization was performed due to faint characters; not disturbed for photographing.
VXR93J	Serial No. confirmed by firearms examiner
LPNXUG	Despite testing as non magnetic, MPI is a preferred nondestructive technique for restoration on stainless steel.
PZQPMQ	Although data sheet states the material is stainless steel, it is non-ferrous.
FAQZ34	This process transpired for a period of five (5) hours.

TABLE 5

WebCode	Additional Comments
8DLJWQ	Alternated Fry's Reagent[sic] with Nitric Acid until clear. Photographs were taken before treatment, during restoration and upon the completed item.
867ZDQ	The submitted sample was non-magnetic. A reaction observed for each chemical etchant used.
CU8VBR	The packaging of the item 1 bar stock was damaged such that it was not secure.
C3NET7	The recovered serial number is "705JDE"
93E7CF	Also digitally enhanced photo of restored characters using Adobe Photoshop CS6.
6YPP8Q	Applied acetone to neutralize etchant.
FVTNWK	Clear defined number easily photographed[sic].
FYRBZ9	Swabbing with cotton-tipped applicators was the method of application used with the above named solutions. The swabs were kept moistened with fresh solution throughout the process.
RPM3M6	Photographs of bar stock were taken in original condition, after polishing to mirror finish, and after application of Fry's Reagent.
EDAJJ2	Negative reaction from the application of Davis and Turner's reagent in restoring any characters with gentle agitation using a cotton swab, the surface area appeared unaffected. Further polishing was applied to create a smooth surface finish prior to the application of Griffin's Reagent. The application of Griffin's Reagent resulted in revealing the complete serial number within 5 minutes. Griffin's was applied with a cotton swab and agitated. Clean swabs were used to replenish the reagent as needed.
V4TGED	705JDE whereas the "0" equals a zero. " ~ " equals approximately.
Z3H6NB	Images of outer box, stainless steel bar stock and aluminum bar stock were taken using a digital camera.
3KG6NA	I tried the non-destructive method first and it worked well so no acid was used and the stainless steel bar stock was not altered.
LCKG2T	April 09 2014 - Opened package - Item 1. Examined block. April 10 2014 - Performed restoration. April 11 2014 - Re-sealed package.
6EKWGL	At each step of analysis sample preparation pictures were taken. [Participant included pictures that could not be reproduced within the report.]
UTF2UZ	I've never timed how long I keep an acid on a restoration, so I counted the number of swabs used with a specific acid.
9YCHLR	The magnetic method of restoration was successful on all attempts. The area where the serial number had been obliterated was polished with a dremel tool to remove the machine marks in an attempt to produce a clearer serial number.
KQH97J	Light polish to area then Fry's quickly revealed the obliterated characters.

TABLE 5

WebCode	Additional Comments
ZURRK6	Upon completion of the examination, the restored serial number on Item #1 was digitally photographed and included in the case documentation.
VHAG6C	Six alpha numerics appeared after the Fry's reagent was applied to the obliteration area.
EAFKCX	Once surface preparations were complete and MagnaFlux was applied, complete character development was nearly instantaneous.
FNPXUG	The defacement procedure had heavily gouged this sample in vicinity of the "J". This character was the last to appear. The "5" & "D" were almost lost by the time "J" was readable.
CX4KER	The method "Serial Number Restoration" is accredited according to ISO17025.
V6ZR2G	Progress on restoration was not from any one chemical. Progress was from a combination of these chemicals. Chemical applications for all were for 15-60 seconds each application.
LPJEVR	Fry's reagent, acid ferric chloride & nitric acid repeated until all digits were legible.
TDKDVU	Clean and wash the surface, apply a protective coating.
XEXCET	The 3 methods are used in sequence, alternatively, several times until the characters are revealed. Photos are taken at each step when characters are becoming visible.
B6QVBG	All digits and characters well restored.
9UDAU4	A swab soaked with deionized water was applied to the chemically treated surface to stop the reaction once the serial number was visible.
PZQL4N	Reagents were not left on the bar stock for any extened[sic] period of time. Reagents were continuously swiped across it. The dremel tool was used again before using the Davis Reagent to polish the surface.
UGFH6T	The second character restored was observed to be a zero. It is consistent with the zero on the included standard. The letter O was not included as a standard on the reference plate.
ZDX9HN	The 2nd character restored was observed to be a zero. It is consistent with the zero on the included standard. The letter "O" was not included as a standard on the reference plate.
7WWPJ9	The Item 1 metal flat bar was not magnetic; therefore, it was not stainless steel. The second character restored was observed to be a zero. It is consistent with the zero on the included reference standard. The letter "O" was not included on the reference standard.
99CN38	I designated the aluminum bar stock standard as Exhibit #2. This item was not assigned an Item # or Exhibit #, but I used it to compare the characters recovered on Item #1 to the standard characters. The second character was observed to be the number zero, based on its physical appearance and the lack of the letter O on the aluminum bar stock standard to which to compare. The second character was consistant[sic] with the number zero on the bar stock standard.
QUY7YW	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

TABLE 5

WebCode	Additional Comments
	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.
8KDUEU	Nitric Acid was alternated w/ the use of ferric chloride & also with the use of Acidic Ferric Chloride.
JL6UKT	Two attempts using the magnetic method for developing the stamped characters in ferromagnetic materials were made: the first reaction lasted about 2 minutes and the six characters were partially[sic] displayed, the same method was used. The reaction lasted 3 minutes this time and as a result the six characters of the serial number were completely[sic] legible.
GQ7YL2	Did not use the Magnaflux method due to the amount of lost material and the depth of the marks left by machining.
B73FUY	The quality of this test item was comparable with the test item last year.
DWCBBP	Would like to see other metals.
JAK8UT	Partial character visible after initial polishing.
XJFYHL	Acidic ferric chloride was used to raise the last character ("E")
HRBL4T	The use of more aggressive polishing prior to the final application of reagents was due to the last character being in an area with deeper tool marks from the milling operation. This additional polishing aided in making the last character more legible.
D9AA73	The first digit was a bit difficult to restore. After the other five digits were restored they were covered with adhesive tape and the first digit was subjected to additional chemical etchant which revealed the number 7. This was the last digit to be restored.
TCHTKN	Magnetic particle processing revealed possible characters consisting of "705JDE"; although the "E" is inconclusive. Davis' Reagent and Turner's Reagent were applied (approximately (2) minutes each) to strengthen the last character. Magnetic particle processing then displayed "705JDE".
HVLWU3	Item 1 was submitted as a, "Piece of stainless steel bar stock with suspected obliterated serial number."
NTY7AY	I found filing marks on the area bearing the suspected obliterated serial number.
CW32NK	There wasn't an obvious area where the obliteration took place. I had to treat the entire milled area until a few characters came up.
QX997E	1. The acid was removed from the surface at each step with the use of delicate task wipers in order to observe the appearing characters. 2. Digital images were captured after the recovery of the serial number.

TABLE 5

WebCode	Additional Comments
QDWLHL	The acids were removed from the surface, continuously, to observe the appearing characters during the recovery of the serial number restoration process. The obliterated area was cleaned after work with delicate task wiper and lubricated to avoid the corrosion.
HG7PTB	The acids were removed and the surface cleaned continuously, to observe the appearing characters at each step.
CA6M2H	The acid was cleaned with delicate task wipers, constantly, to write down characters appearing at each step.
3RUJMT	the sample presents low magnetic attraction, but with ferric content, so it applied the magnetic restoration
6JRBUX	No further methods required.
JF7CG3	No chemical process required.
4YANUJ	No reference standard for letter O was given so there's a potential for the reported "zero" to be an O ie Oscar.
2X4J4Q	The Chromic Acid appeared to have no reaction, so I used Ferric Chloride which gave off an immediate odor.
EDDKPF	Chemicals used include: Ferric Chloride, Acidic Ferric Chloride, Phosphoric/Nitric Acid

# Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

## Test No. 14-5250: Serial Number Restoration

DATA MUST BE RECEIVED BY April 28, 2014 TO BE INCLUDED IN THE REPORT

Participant Code:

Webcode:

### Accreditation Release Statement

CTS submits external proficiency test data directly to ASCLD/LAB and ANSI-ASQ NAB/FQS. 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 and/or ANSI-ASQ NAB/FQS. (Accreditation Release section on the last page must be completed and submitted.)

This participant's data is NOT intended for submission to ASCLD/LAB or ANSI-ASQ NAB/FQS.

### Online Data Entry

Visit [www.cts-portal.com](http://www.cts-portal.com) to enter your proficiency test results online. If you have any questions please do not hesitate to contact CTS.

Please Note: A piece of aluminum bar stock was also included in the sample set and is intended as a standard for size, shape and positioning of the stamped alphanumeric characters used in the serial number.

#### Items Submitted (Sample Pack SN):

Item 1: Piece of stainless steel bar stock with suspected obliterated serial number.

#### 1.) Please indicate the recovered 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?

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Please return all pages of this data sheet.

Page 1 of 3



Participant Code:

Webcode:

Additional Testing Information

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

Five horizontal lines for text entry.

4.) What methods of recovery were used during your examination?  
(Please list in order of use)

Method

If an acidic method was used how long was the acid left on the material?

Two columns of five horizontal lines each for text entry.

5.) Additional Comments

Five horizontal lines for text entry.

**Return Instructions**

Participant Code:

**Data Sheets can be mailed or faxed (please include a cover sheet) and must be received by April 28, 2014 to be included in the report.**

MAIL: Collaborative Testing Services, Inc.  
Forensic Testing Program  
P.O. Box 650820  
Sterling, VA 20165-0820 USA

FAX: +1-571-434-1937  
or Toll-Free (U.S. only): 1-866-FAX-2CTS (329-2287)  
TEL: +1-571-434-1925 (8 am - 4:30 pm EST)  
EMAIL: forensics@cts-interlab.com

www.ctsforensics.com

**Please return all pages of this data sheet.**

## RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code:

Webcode:

for Test No. **14-5250: Serial Number Restoration**

This release page must be completed and received by **April 28, 2014** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

### **ASCLD/LAB RELEASE**

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the laboratory's designated individual complete the following.

**The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.**

ASCLD/LAB Legacy Certificate No. \_\_\_\_\_ ASCLD/LAB International Certificate No. \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Name \_\_\_\_\_

Location (City/State) \_\_\_\_\_

### **ANSI-ASQ NAB/FQS RELEASE**

If your laboratory maintains its accreditation through ANSI-ASQ NAB/FQS, please complete the following form in its entirety to have your results forwarded.

ANSI-ASQ NAB/FQS Certificate No. \_\_\_\_\_

Signature and Title: \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Name \_\_\_\_\_

Location (City/State) \_\_\_\_\_

### Accreditation Release

#### **Return Instructions**

*Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.*

*Questions? Contact us 8 am-4:30 pm EST  
Telephone: +1-571-434-1925  
email: forensics@cts-interlab.com*

**Please return all pages of this data sheet.**

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