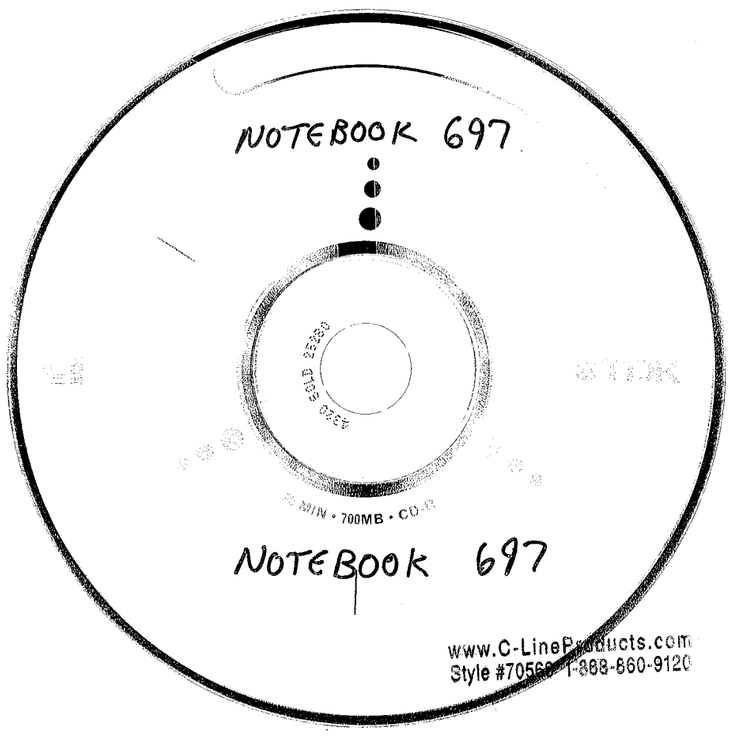
308 --- Q200506060008
Scientific Notebook No 697: Alloy 22 Repassivation Test (03/28/2005 through 05/31/2005)

LABORATORY NOTEBOOK

CNWRA/SwRI



CNWRA
CONTROLLED

COPY 697

NOTEBOOK NO. _____
ISSUED TO _____
ON _____ **20**____
DEPARTMENT _____
RETURNED _____ **20**____

Brian K. Deeby - BKD - BKD
Steven B Young - ~~Steve Young~~ - SBY
DARRELL S. DUNN DD

SCIENTIFIC NOTEBOOK COMPANY
2831 LAWRENCE AVENUE
STEVENSVILLE, MICHIGAN 49127
(800) 537-3028 - http://www.snco.com

From Page No.

Initial Scientific notebook entry for crevice corrosion repassivation potential measurements

Title: Alloy 22 Repassivation Tests

Tests Preformed by: Darrell S. Dunn, Div 20; Brian Derby, Div. 18. Steve Young. Div 18

Objectives: Measure Crevice Corrosion Repassivation Potentials for Alloy 22 as a function of solution chemistry, temperature and metallurgical condition

Equipment:. Keithley 614/617. Potentiostat (Solartron 1287/1480, EG&G 273, PAR 263 or equivalent) and CorrView Software or equivalent, Electrochemical test cell.

Laboratory oven for exposure of test specimens at 600 to 900 °C, Thermocouple and thermocouple meter for thermally aged specimens

Laboratory oven for exposure of test specimens at 1100 to 1350 °C, Thermocouple and thermocouple meter for solution annealed specimens

Materials: Alloy C-22, heat to be identified in each test. Other materials and heats to be added and identified prior to testing.

Specimen specifications: Specimens will be equivalent to 20.01402.571.027 or a similar crevice corrosion specimen unless otherwise specified.

Measurement Parameters: Potential and Current of specimen during test. Temperature and time of exposure for thermally aged or heat treated specimens.

Required level of accuracy: Temperature ± 5 °C, Time of exposure ± 1 minute, Potentials ± 1mV, Current ± 0.01 microamp.

Uncertainty and Sources of Error: Current measurement error can occur for localized corrosion processes because the actively corroding area is not the same as the surface area of the test specimen.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	3/28/05

Project No._____

Book No._____ TITLE _____

From Page No.____

To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	4/12/05

Project No._____

TITLE _____ Book No._____

From Page No.____

To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	4/12/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Snap-on USA **SN:** 1001200319
Cal: 9/3/04 **Due:** 3/3/05

Initial Weight: 39.88041g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 39.79926g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 4M NaCl
467.51g NaCl Lot: 042966
+DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: ~~7/15/04~~ 1/14/05 5BY 3/28/05 **Due:** ~~1/15/05~~ 7/14/05 5BY 3/28/05
Initial pH: 8.751 **Model:** Orion EA 940 **SN:** 2330
Final pH: 6.847 **Cal:7/21/04** **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 60° C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.431 V_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: +.066 V_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 galvD1

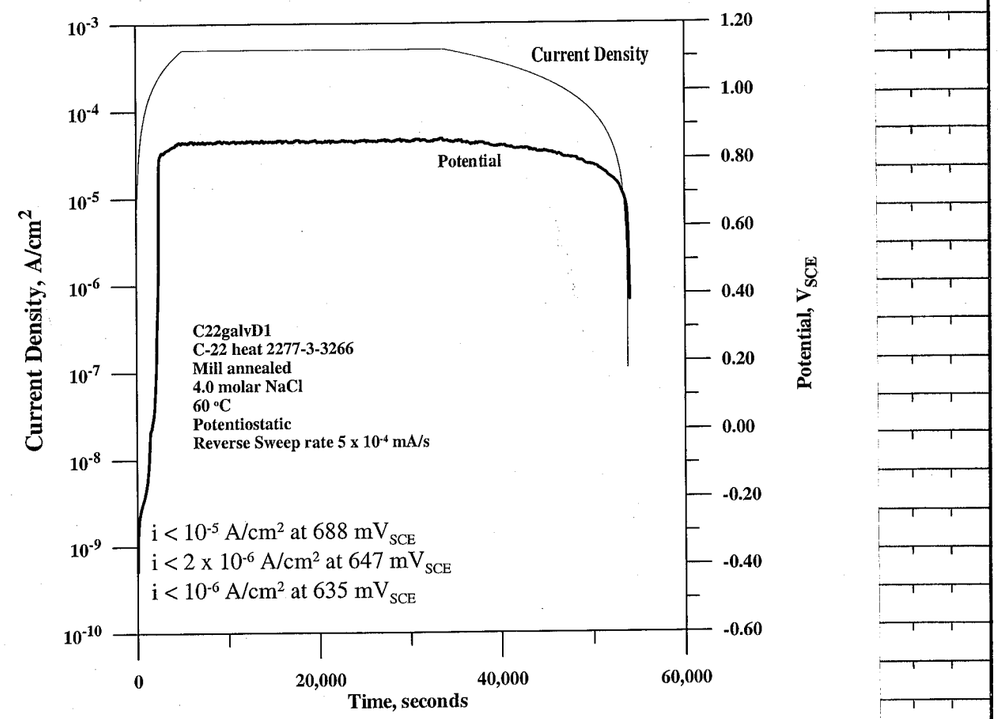
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Slight gold staining.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Snap-on USA — **Cal:** 9/3/04 — **SN:** 1001200319 — **Due:** 3/3/05

Initial Weight: 40.822229g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 40.804869g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 4M NaCl
467.55g NaCl Lot: 042966
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05 — **SN:** 2883 — **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 8.474
Final pH: 7.265
Model: Orion EA 940 — **Cal:** 7/21/04 — **SN:** 2330 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 60° C — **Measured with Hg Thermometer** — **Cal:** 01/07/05 — **SN:** E98-191 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −.313 V_{SCE}
Ept: −.504 V_{SCE}
Model: Keithley 614 — **Cal:** 12/2/04 — **SN:** 467374 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 galvD2

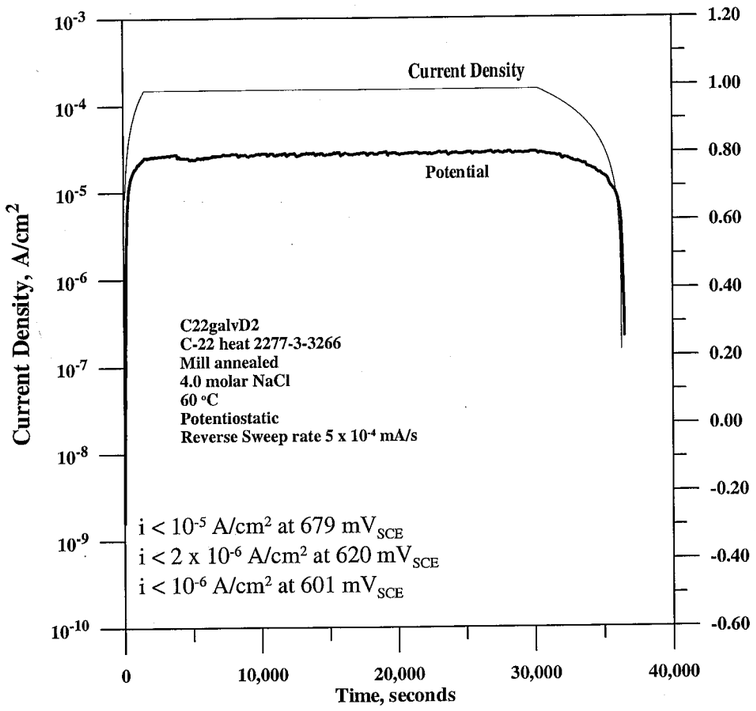
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Slight gold tint staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.75490g **Final Weight:** 40.72257g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 4M NaCl 467.52g NaCl Lot: ~~467.~~ 042966 SBY 2/28/05 +DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 8.609 **Final pH:** 6.511	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 60°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.412V SCE **Ept:** +.040V SCE	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22galvD3

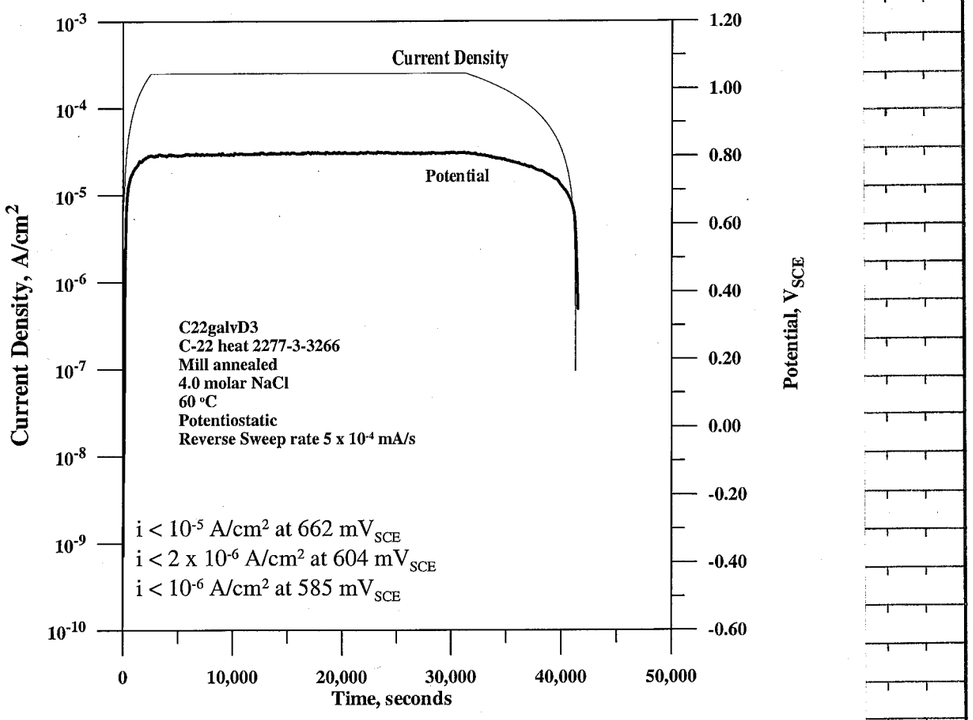
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosian.
Slight gold staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

Project No._____
Book No._____ TITLE_____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.83315 g **Final Weight:** 40.83355 g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 4M NaCl 467.52g NaCl Lot: 042966 + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 8.638 **Final pH:** 7.890	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 60°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.371 V_{SCE} **Ept:** -.145 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 galvD4

Number of Crevice Corrosion Sites: 0 /24 (24 max.)

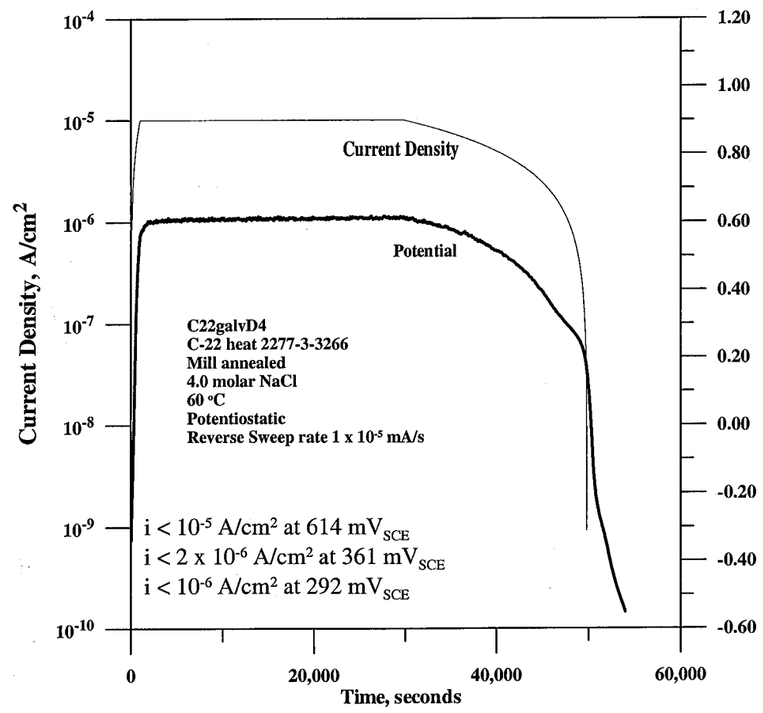
No crevice corrosion.
Slight gold tint staining.
* Repolish for further testing.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

Project No._____
Book No._____ TITLE_____

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA **Cal:** 9/3/04 **SN:** 1001200319 **Due:** 3/3/05

Initial Weight: 40.21623g **Final Weight:** 40.21541g **Model:** Sartorius Genius **Cal:** 11/10/04 **SN:** 12809099 **Due:** 5/10/05

Solution: 4M NaCl
467.52g NaCl Lot: 0429066
+ DI to 2L

Reagents measured with **Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05 **SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 8.679 **Final pH:** 7.855 **Model:** Orion EA 940 **Cal:** 7/21/04 **SN:** 2330 **Due:** 7/21/05

pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 60°C **Measured with Hg Thermometer** **Cal:** 01/07/05 **SN:** E98-191 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.320 V_{SCE} **Ept:** -.072 V_{SCE} **Model:** Keithley 614 **Cal:** 12/2/04 **SN:** 467374 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

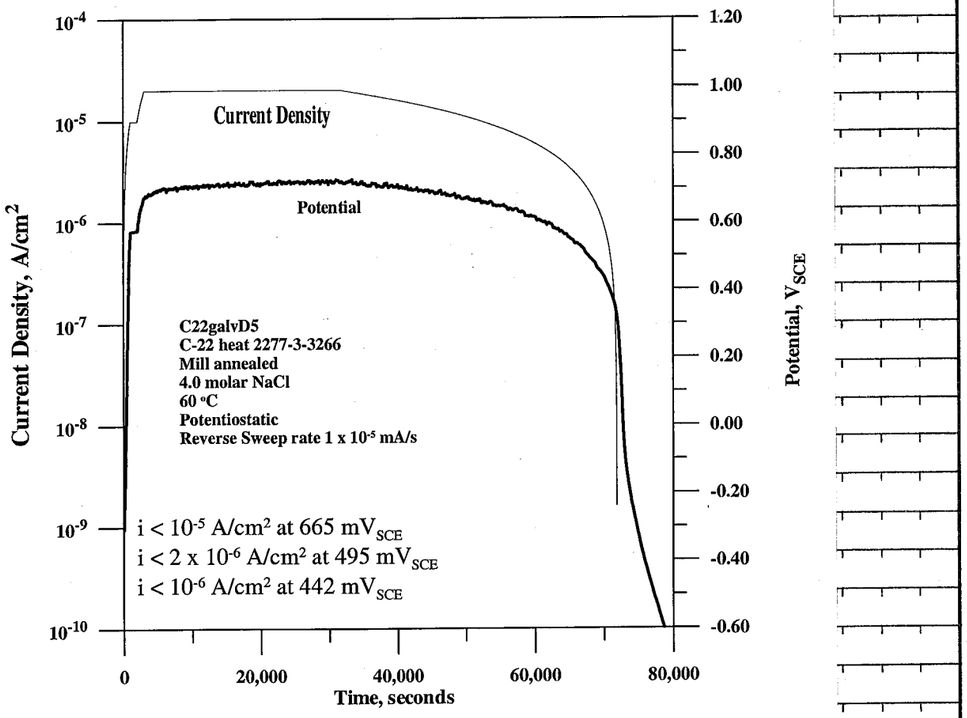
DATA FILE: C-22 galvD5

Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Slight gold tint staining.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	2/28/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA, **Cal:** 9/3/04, **SN:** 1001200319, **Due:** 3/3/05

Initial Weight: 40.58426g
Final Weight: 40.58407g
Model: Sartorius Genius, **Cal:** 11/10/04, **SN:** 12809099, **Due:** 5/10/05

Solution: 4M NaCl
467.52g NaCl Lot:042966
+DI to 2L

Reagents measured with
Model: OHAUS, **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05, **SN:** 2883, **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 8.544
Final pH: 7.793
Model: Orion EA 940, **Cal:** 7/21/04, pH Probe: #13-620-296, **SN:** 2330, **Due:** 7/21/05, **SN:** 4079126

Test Temperature: 60°C
Measured with Hg Thermometer, **Cal:** 01/07/05, **SN:** E98-191, **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51, **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.273V$_{SCE}$
Ept: +.170V$_{SCE}$
Model: Keithley 614, **Cal:** 12/2/04, **SN:** 467374, **Due:** 12/2/2005

Potentiostat: Solartron 1480, **SN:** 00240551

DATA FILE: C-22galvD6

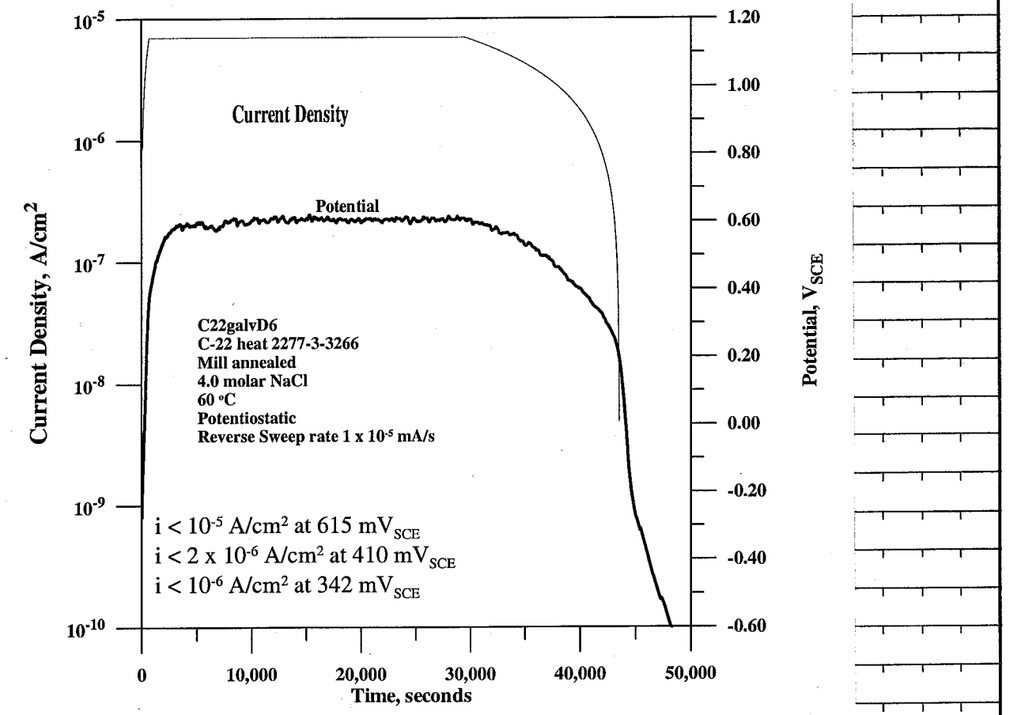
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Light staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/2/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/2/05

Project No._____
Book No._____ TITLE_____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.70585g **Final Weight:** 40.70547	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05

Solution: 0.0001 M NaCl
0.013g NaCl Lot: 042966
+DI to 2L

Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.744 **Final pH:** 7.103	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: -.554 V_{SCE} Ept: +.102 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 21a

Number of Crevice Corrosion Sites: 0 /24 (24 max.)

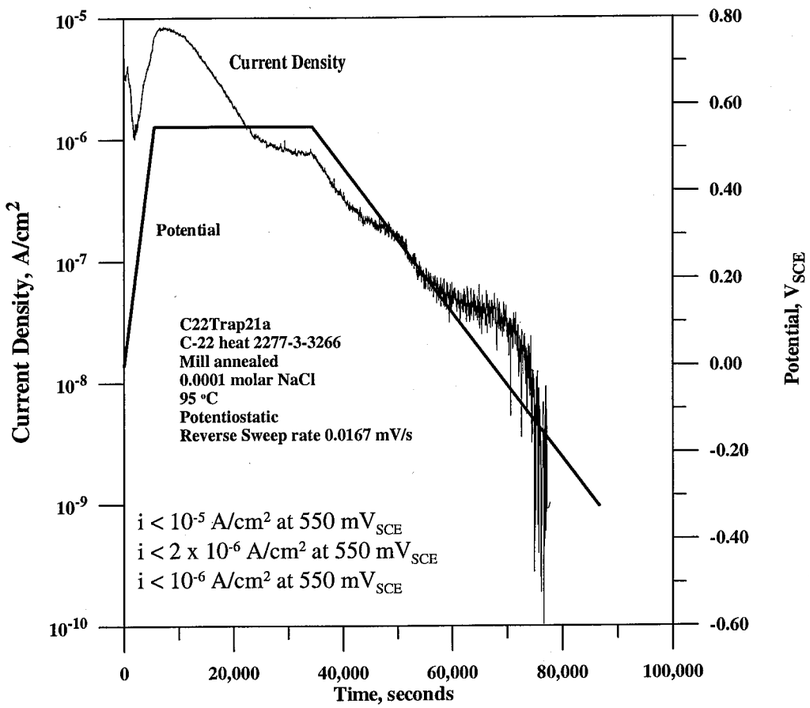
No crevice corrosion.
Slight gold tint.
*Repolish for further testing.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/2/05

Project No._____
TITLE_____ Book No._____

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/2/05

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072 — **Cal:** 9/29/04 — **Due:** 3/29/05

Initial Weight: 39.61342 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.61329 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 0.0001M NaCl
0.014g NaCl Lot: 042966
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883 — **Cal:** 1/14/05 — **Due:** 7/14/05

Initial pH: 5.92 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 7.61 — **Cal:**7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **SN:** E98-191 — **Cal:** 01/07/05 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -576 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: -358 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 21b

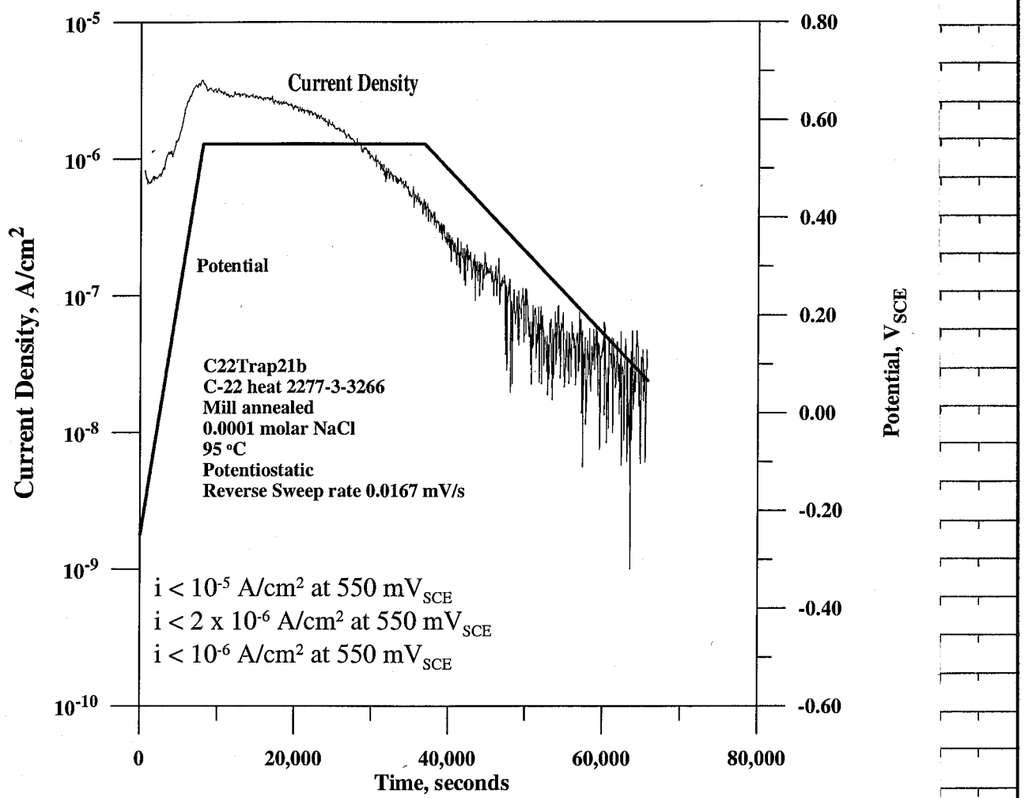
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Mild staining present.
*Repolish for further testing.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/28/05

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/28/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.76356g **Final Weight:** 40.76247g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05

Solution: 0.0005M NaCl
0.058g NaCl Lot: 042966
+ DI to 2L

Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.821 **Final pH:** 6.823	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52		**SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: -.555 V_{SCE} Ept: -.273 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 22a

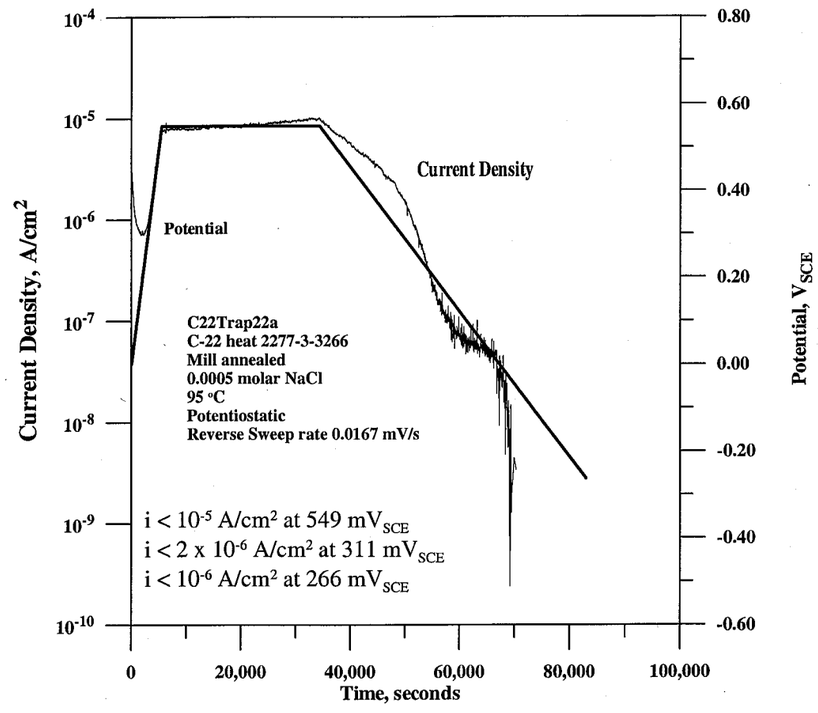
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Mild surface staining.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/3/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/3/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA
Cal: 9/3/04
SN: 1001200319
Due: 3/3/05

Initial Weight: 41.00339g
Final Weight: 41.00246g
Model: Sartorius Genius
Cal: 11/10/04
SN: 12809099
Due: 5/10/05

Solution: 0.0005M NaCl
0.057g NaCl Lot: 042966
+ DI to 2L

Reagents measured with
Model: OHAUS
Cal: ~~7/15/04~~ 1/14/05 SBY 3/28/05
SN: 2883
Due: ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 5.855
Final pH: 6.921
Model: Orion EA 940
Cal: 7/21/04
pH Probe: #13-620-296
SN: 2330
Due: 7/21/05
SN: 4079126

Test Temperature: 95°C
Measured with Hg Thermometer
Cal: 01/07/05
SN: E98-191
Due: 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51
SN: 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.535 V_{SCE}
Ept: +.217 V_{SCE}
Model: Keithley 614
Cal: 12/2/04
SN: 467374
Due: 12/2/2005

Potentiostat: Solartron 1480
SN: 00240551

DATA FILE: C-22 Trap 22b

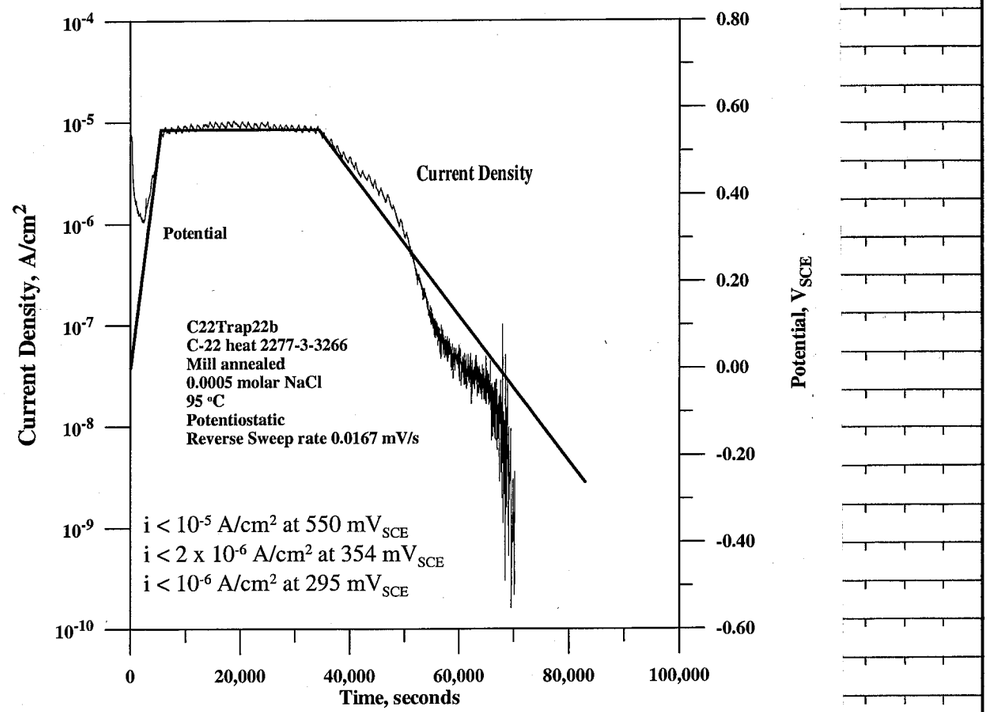
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Lightly blue stained.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/3/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/3/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.89905g **Final Weight:** 40.89808g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05

Solution: 0.001M NaCl
0.118g NaCl Lot: 042966
+DI to 2L

Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.684 **Final pH:** 6.202	**Model:** Orion EA 940 **Cal:** 7/21/04 pH Probe: #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95° C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.605 V_{SCE} **Ept:** -.082 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 23a

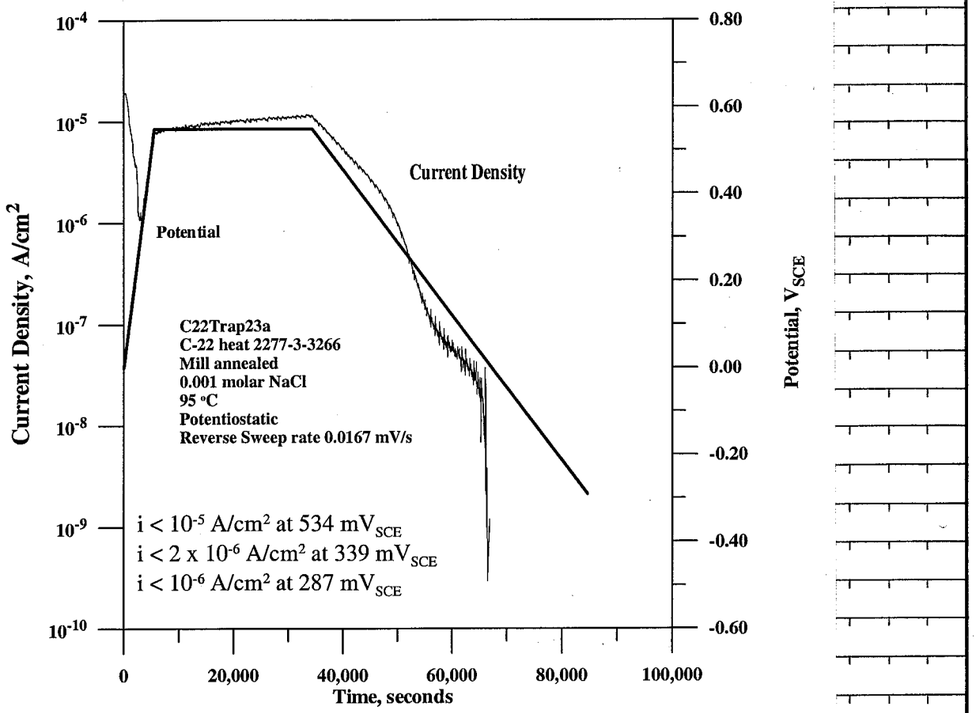
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Gold and blue staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/4/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/4/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 39.71435g **Final Weight:** 39.71331g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 0.001M NaCl 0.1166g NaCl Lot: 042966 + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~4/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.872 **Final pH:** 6.714	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 01/07/05	**SN:** E98-191 **Due:** 07/07/05
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-51		**SN:** 7282317
Gas: 99.999% Nitrogen Gas		
Ecorr: -.582 V_{SCE} **Ept:** +.212 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 23b

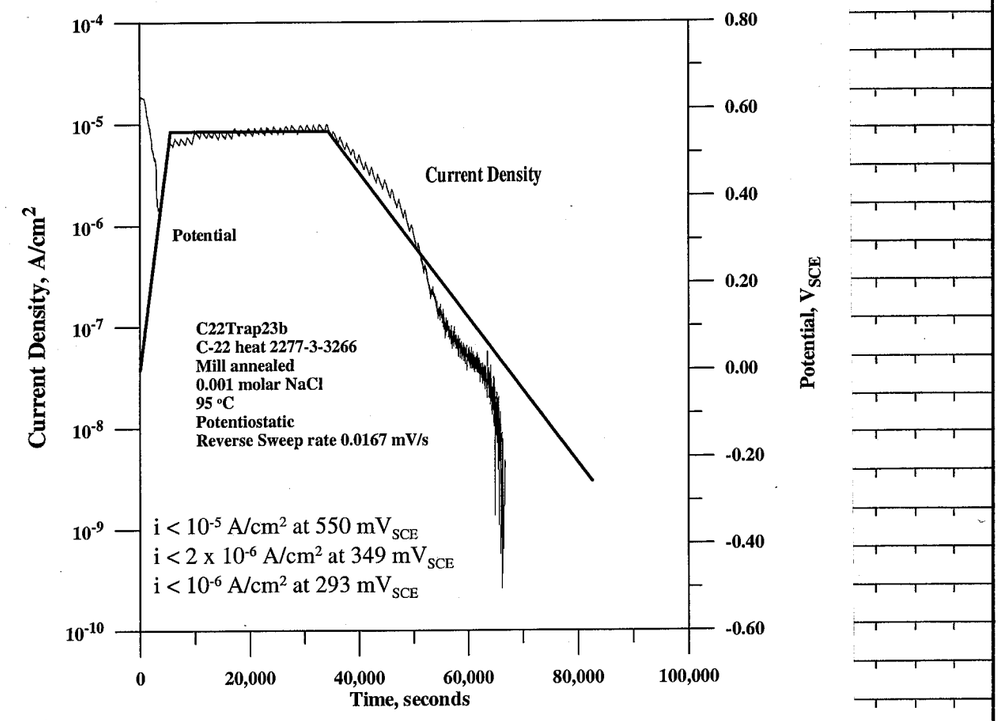
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Mild blue and gold staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/4/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/4/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.69642g **Final Weight:** 40.69443g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 0.005M NaCl 0.584g NaCl Lot:042771 + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.474 **Final pH:** 7.001	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.406 V_{SCE} **Ept:** +.188 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 24a

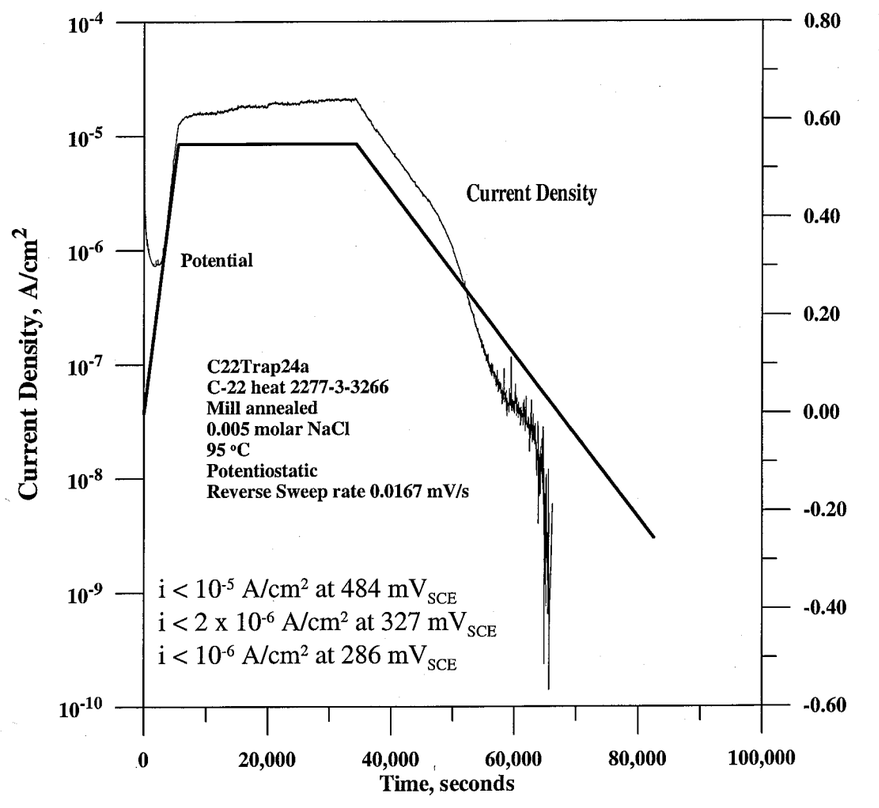
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Blue and gold staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/8/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/8/05

Project No._____
Book No._____ TITLE _____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA — **SN:** 1001200319 — **Cal:** 9/3/04 — **Due:** 3/3/05

Initial Weight: 40.49937 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 40.49781 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 0.005M NaCl
0.585 g NaCl Lot:042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: ~~7/15/04~~ 1/14/05 SBY 3/28/05 — **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 5.621 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 6.745 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95° C — **Measured with Hg Thermometer** — **SN:** E98-191
Cal: 01/07/05 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.414 V_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +.229 V_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 24b

Number of Crevice Corrosion Sites: 0 /24 (24 max.)

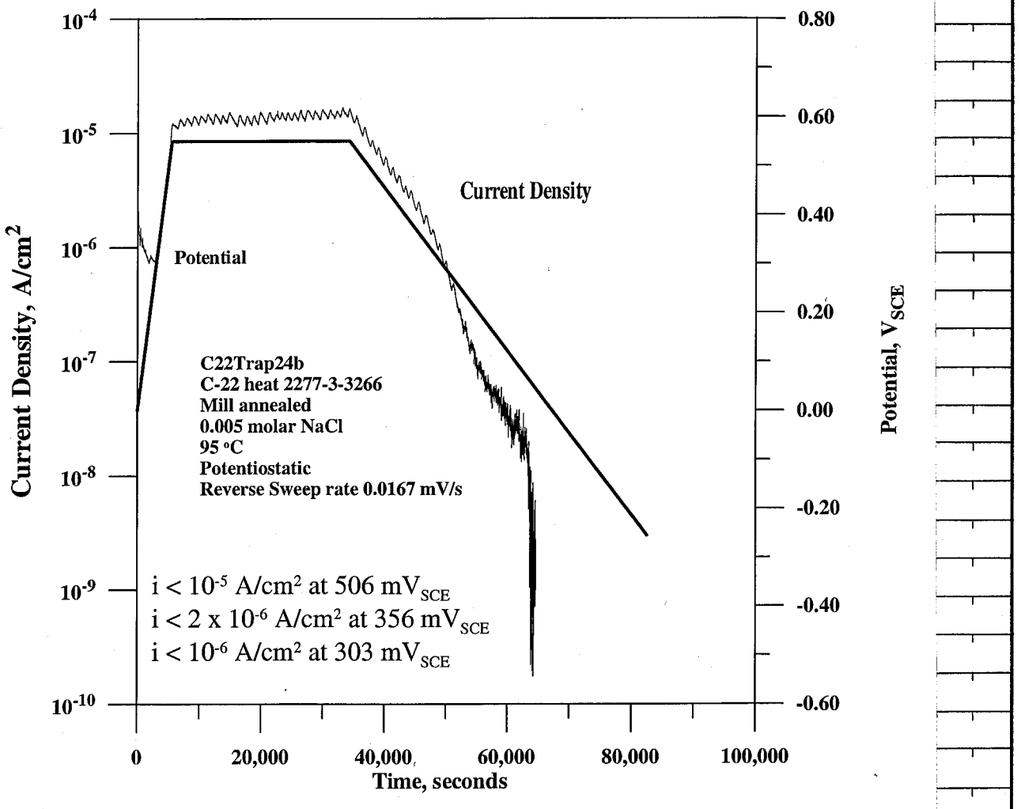
No crevice corrosion.
Blue and gold staining.
* Repolish for further testing.

To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/8/05

Project No._____
TITLE _____ Book No._____

From Page No.____



To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/8/05

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 38.874669 **Final Weight:** 38.872369	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 0.01M NaCl 1.169g NaCl Lot: 042771 +DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.775 **Final pH:** 6.573	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.521 V_{SCE} **Ept:** +.237 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 25a

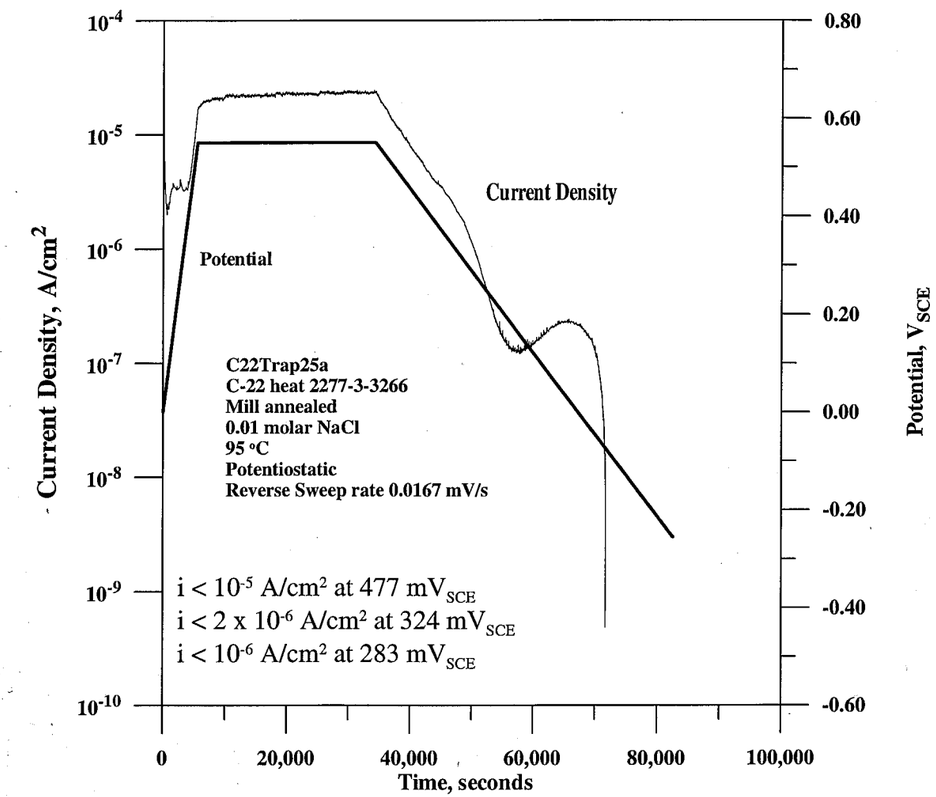
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Multi color staining.
* Repolish for further testing.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/9/05

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/9/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 39.69481g **Final Weight:** 39.69317g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 0.01M NaCl 1.168g NaCl Lot: 042771 + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.870 **Final pH:** 6.813	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 01/07/05	**SN:** E98-191 **Due:** 07/07/05
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-51		**SN:** 7282317
Gas: 99.999% Nitrogen Gas		
Ecorr: -.610 V_{SCE} **Ept:** +.249 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 25b

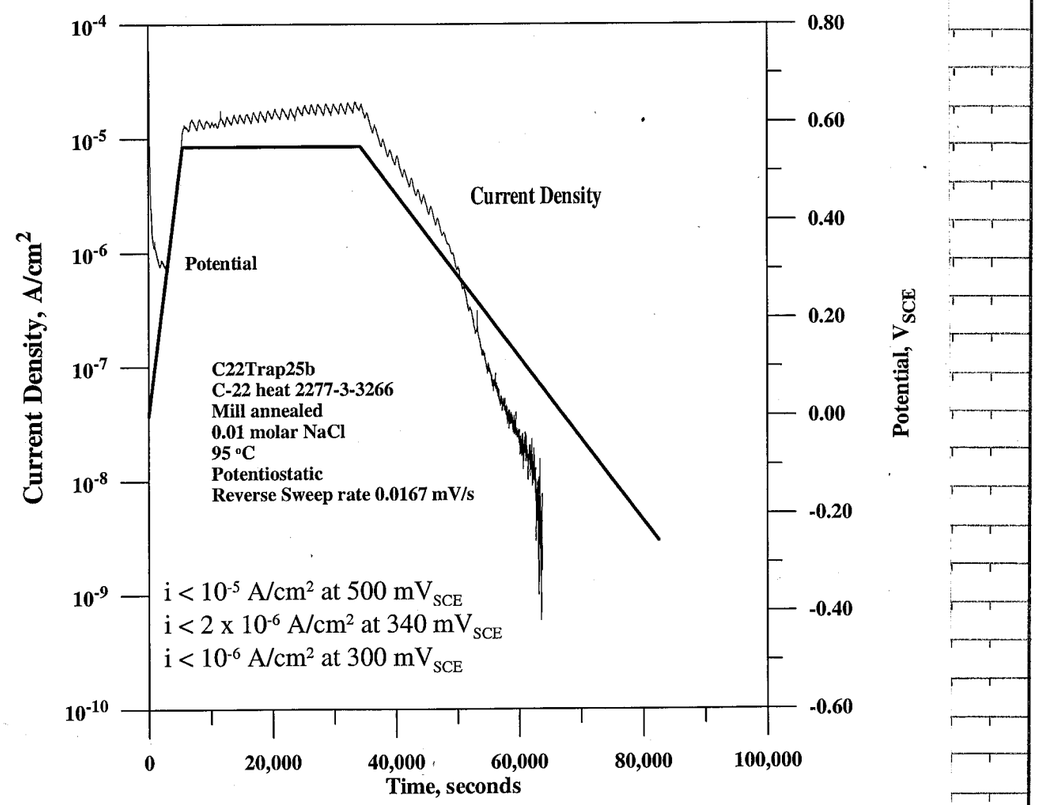
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Multicolor staining.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/9/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/9/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA — **SN:** 1001200319 — **Cal:** 9/3/04 — **Due:** 3/3/05

Initial Weight: 40.10622g — **Final Weight:** 40.10377g — **Model:** Sartorius Genius — **SN:** 12809099 — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 0.05 M NaCl
5.843g NaCl Lot: 042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883 — **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05 — **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 5.550 — **Final pH:** 7.321 — **Model:** Orion EA 940 — **SN:** 2330 — **Cal:** 7/21/04 — **Due:** 7/21/05 — **pH Probe:** #13-620-296 — **SN:** 4079126

Test Temperature: 95° C — **Measured with Hg Thermometer** — **SN:** 323007 — **Cal:** 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −.646 V_{SCE} — **Ept:** +.248 V_{SCE} — **Model:** Keithley 614 — **SN:** 467374 — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 26a

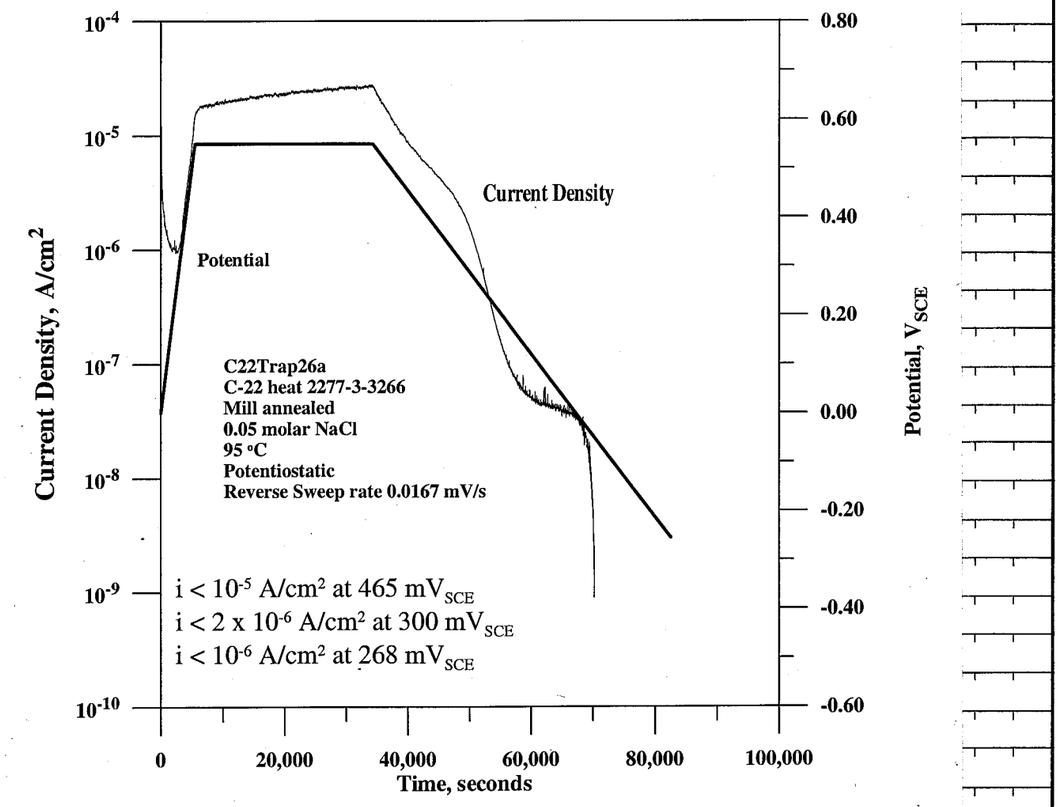
Number of Crevice Corrosion Sites: 0 /24 (24 max.)

No crevice corrosion.
Mild gold staining.
* Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/10/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/10/05

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Snap-on USA — **SN:** 1001200319
Cal: 9/3/04 — **Due:** 3/3/05

Initial Weight: 38.72336g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 38.72000g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 0.05M NaCl
5.843g NaCl Lot:042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: ~~7/15/04~~ 1/14/05 SBY 3/28/05 — **Due:** ~~4/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 5.766 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 7.277 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95° C — **Measured with Hg Thermometer** — **SN:** E98-191
Cal: 01/07/05 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.539 V_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +.211 V_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 26b

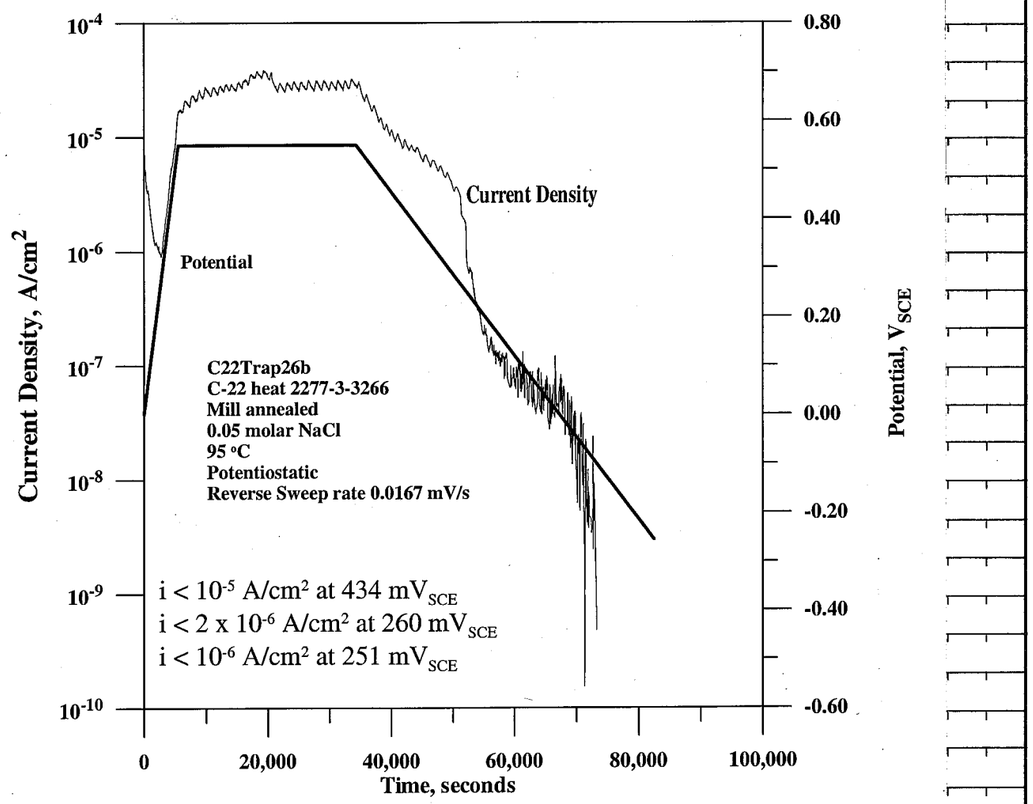
Number of Crevice Corrosion Sites: 1 /24 (24 max.)

Crevice corrosion present.
Mild gold staining.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/10/05

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/10/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072 — **Cal:** 9/29/04 — **Due:** 3/29/05

Initial Weight: 40.61896g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 40.61854g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 0.1M NaCl
11.688g NaCl Lot: 042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: ~~7/15/04~~ 1/14/05 SBY 3/28/05 — **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 5.96 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 8.06 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **SN:** 323007
Cal: 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: -.336 V_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +.160 V_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 27a

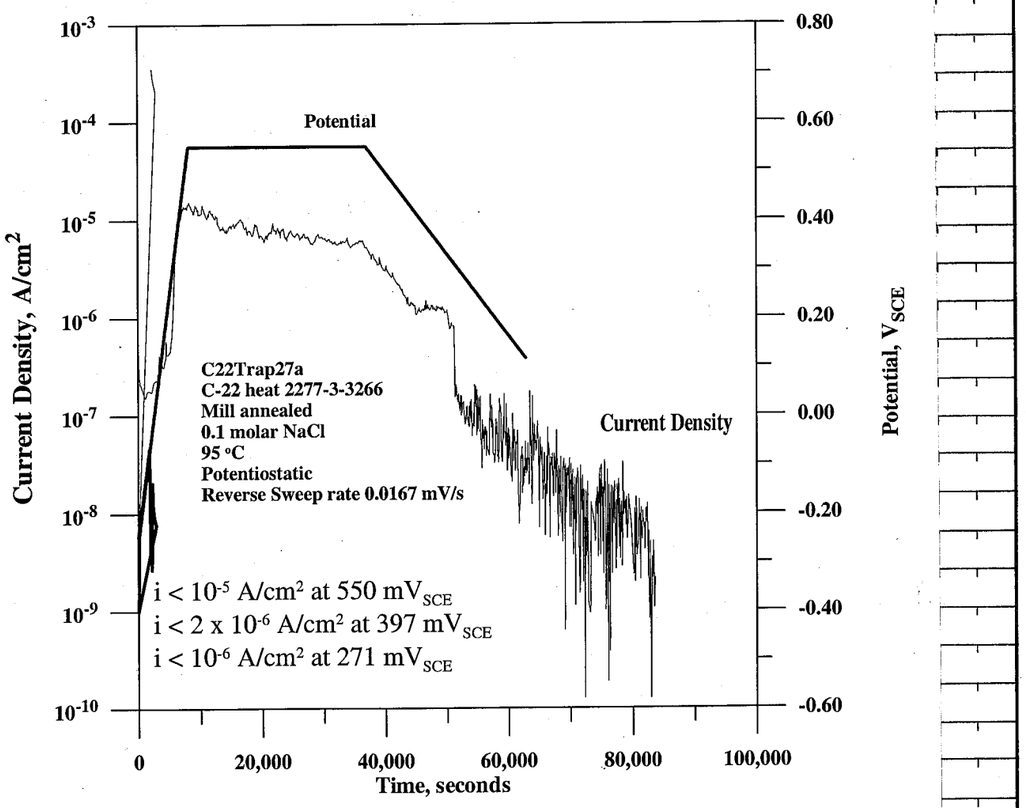
Number of Crevice Corrosion Sites: 1 /24 (24 max.)

Crevice corrosion present.
Mild gold staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/23/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/23/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: 9/29/04 **Due:** 3/29/05

Initial Weight: 40.91883g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 40.91780g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 0.1M NaCl
11.688g NaCl Lot: 042771
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: ~~7/15/04~~ 1/14/05 SBY 3/28/05 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05

Initial pH: 6.15 **Model:** Orion EA 940 **SN:** 2330
Final pH: 8.20 **Cal:** 7/21/04 **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 95°C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: -.230 V_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: -.034 V_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 27b

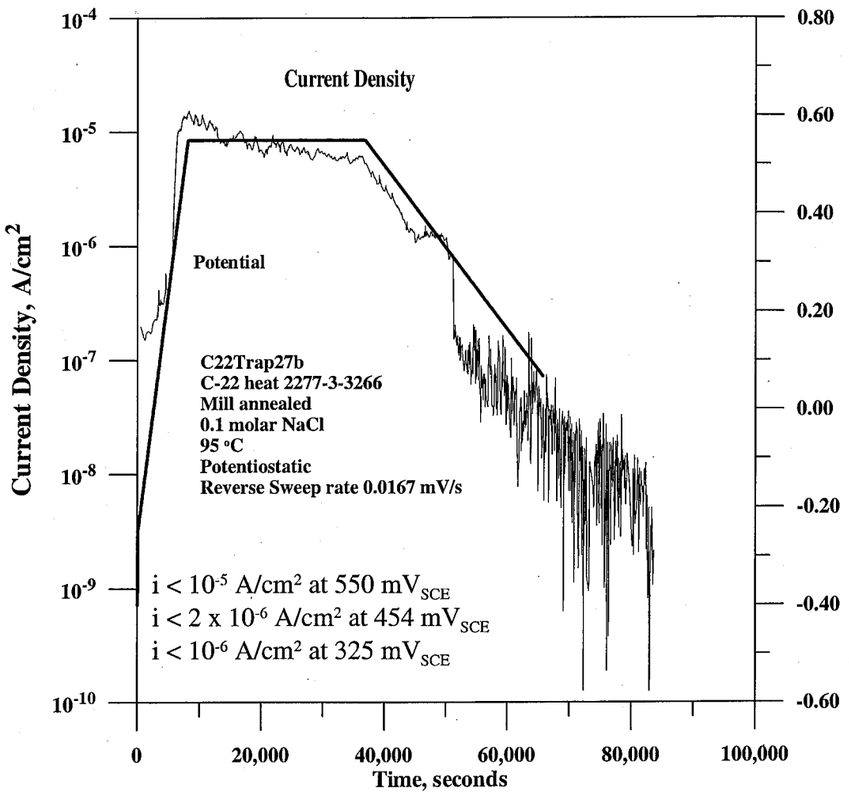
Number of Crevice Corrosion Sites: 1 /24 (24 max.)

Corrosion present at 1 site.
Mild gold staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/23/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/23/05

Project No._____
Book No._____ TITLE _____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Snap-on USA **Cal:** 9/3/04	**SN:** 1001200319 **Due:** 3/3/05
Initial Weight: 40.81802 **Final Weight:** 40.81376	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 0.5M NaCl 58.42g NaCl + DI to 2L	Lot:042771	
Reagents measured with	**Model:** OHAUS **Cal:** ~~7/15/04~~ 1/14/05 SBY 3/28/05	**SN:** 2883 **Due:** ~~1/15/05~~ 7/14/05 SBY 3/28/05
Initial pH: 6.015 **Final pH:** 8.071	**Model:** Orion EA 940 **Cal:** 7/21/04 **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: -.207 V_{SCE} **Ept:** -.378 V_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 28a

Number of Crevice Corrosion Sites: 2 /24 (24 max.)

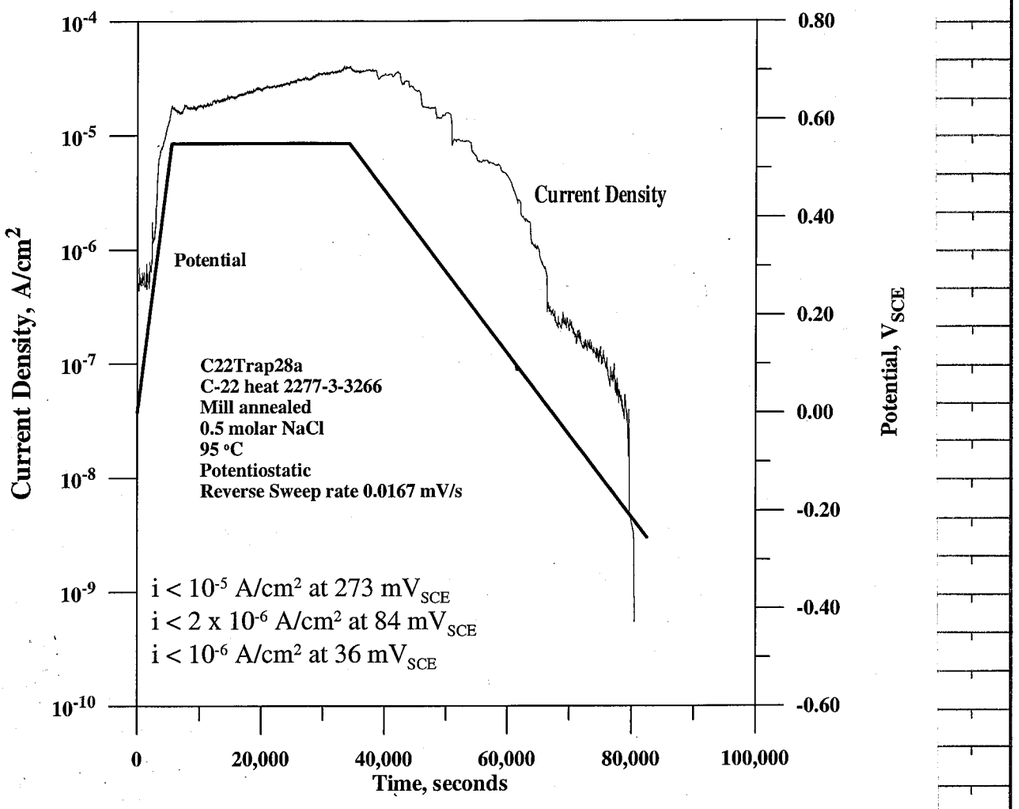
Crevice corrosion present.
Mild gold staining.

To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/21/05

TITLE _____ Project No._____
Book No._____

From Page No.____



To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/21/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **Cal:** 9/29/04 — **SN:** 139072 — **Due:** 3/29/05

Initial Weight: 40.63081g
Final Weight: 40.61654g
Model: Sartorius Genius — **Cal:** 11/10/04 — **SN:** 12809099 — **Due:** 5/10/05

Solution: 0.5M NaCl
58.45g NaCl Lot:042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **Cal:** 1/14/05 — **SN:** 2883 — **Due:** 7/14/05

Initial pH: 5.80
Final pH: 8.21
Model: Orion EA 940 — **Cal:7/21/04** — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **Cal:** 01/07/05 — **SN:** E98-191 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −414mV$_{SCE}$
Ept: −172mV$_{SCE}$
Model: Keithley 614 — **Cal:** 12/2/04 — **SN:** 467374 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 28b

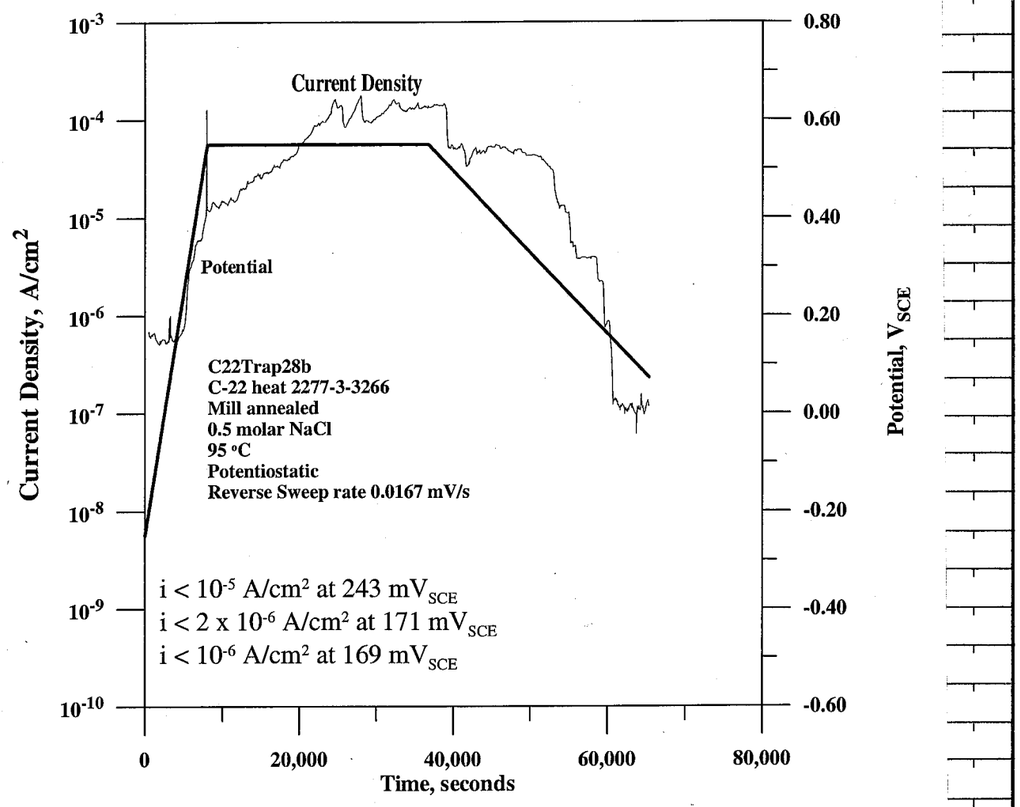
Number of Crevice Corrosion Sites: 2 /24 (24 max.)

Two corrosion sites.
Mild gold staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/28/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/28/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **Cal:** 9/29/04 **SN:** 139072 **Due:** 3/29/05

Initial Weight: 40.49546g **Final Weight:** 40.49171g **Model:** Sartorius Genius **Cal:** 11/10/04 **SN:** 12809099 **Due:** 5/10/05

Solution: 1M NaCl
116.88g NaCl Lot:037047A
+ DI to 2L

Reagents measured with **Model:** OHAUS **Cal:** 1/14/05 **SN:** 2883 **Due:** 7/14/05

Initial pH: 7.03 **Final pH:** 7.99 **Model:** Orion EA 940 **Cal:7/21/04** **pH Probe:** #13-620-296 **SN:** 2330 **Due:** 7/21/05 **SN:** 4079126

Test Temperature: 95°C **Measured with Hg Thermometer** **Cal:** 10/14/04 **SN:** 323007 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: -317 mV_{SCE} **Ept:** +44.5 mV_{SCE} **Model:** Keithley 614 **Cal:** 12/2/04 **SN:** 467374 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 29a

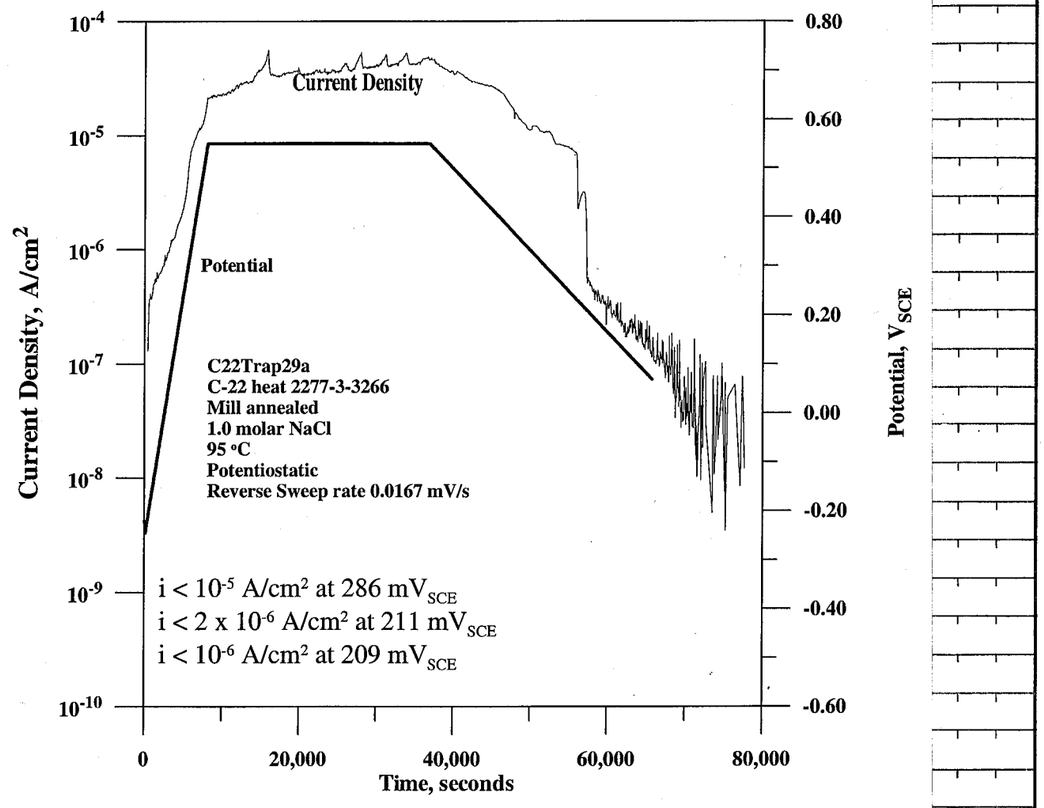
Number of Crevice Corrosion Sites: 1 /24 (24 max.)

One crevice corrosion site.
Mild gold staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/29/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/29/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Proto 6104 **Cal:** 9/29/04	**SN:** 139072 **Due:** 3/29/05
Initial Weight: 39.96277 g **Final Weight:** 39.95558 g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 1M NaCl 116.89g NaCl Lot: 037047A + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** 1/14/05	**SN:** 2883 **Due:** 7/14/05
Initial pH: 7.00 **Final pH:** 7.97	**Model:** Orion EA 940 **Cal:7/21/04** **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: −431 mV_{SCE} **Ept:** −49.3 mV_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 29b

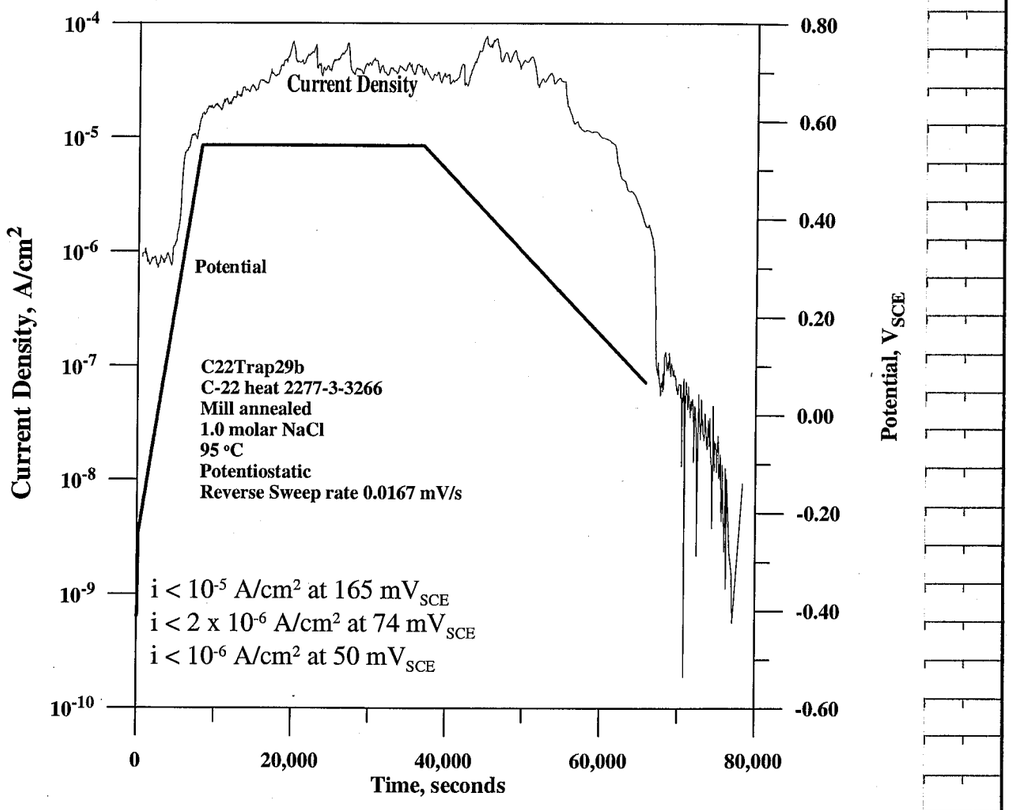
Number of Crevice Corrosion Sites: **2** /24 (24 max.)

Two crevice corrosion sites present.
Mild gold staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/29/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/29/05

Project No._____
Book No._____ TITLE _____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Proto 6104 **Cal:** 9/29/04	**SN:** 139072 **Due:** 3/29/05
Initial Weight: 39.62373g **Final Weight:** 39.45674g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 4M NaCl 467.52g NaCl Lot: 037047A +DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** 1/14/05	**SN:** 2883 **Due:** 7/14/05
Initial pH: 8.91 **Final pH:** 7.63	**Model:** Orion EA 940 **Cal:7/21/04** **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 95°C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: −429mV$_{SCE}$ **Ept:** −120mV$_{SCE}$	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 30a

Number of Crevice Corrosion Sites: **7** /24 (24 max.)

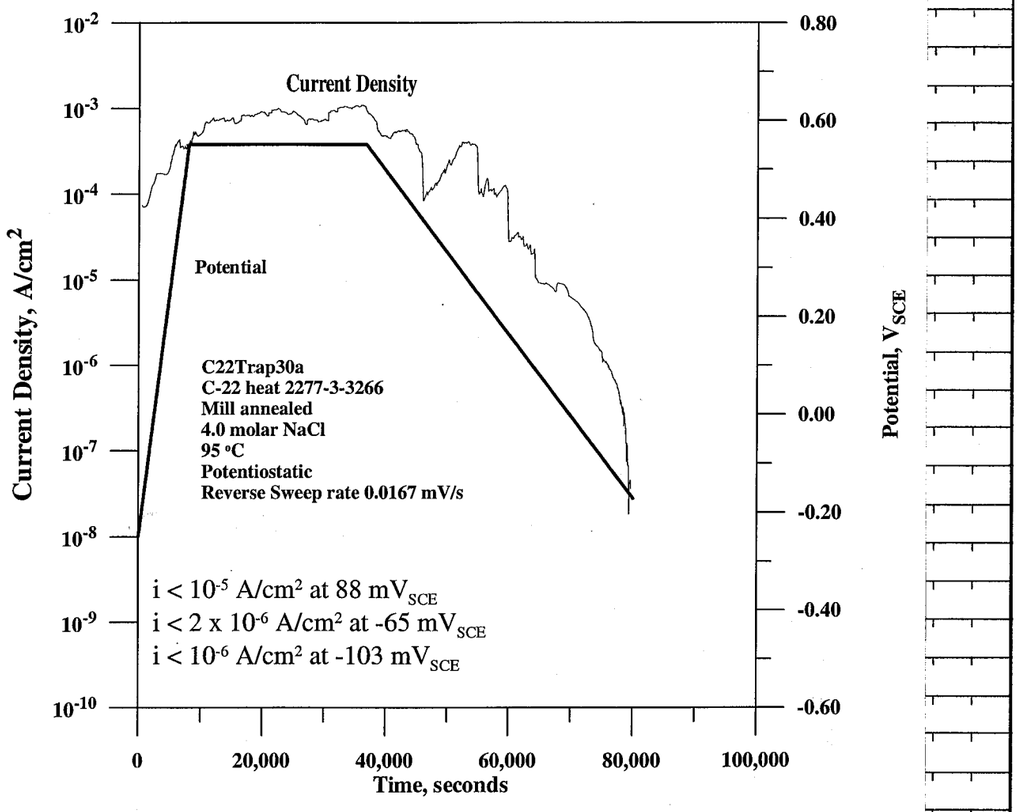
Seven corrosion sites.
Mild staining.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/30/05

Project No._____
TITLE _____ Book No._____

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/30/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072 — **Cal:** 9/29/04 — **Due:** 3/29/05

Initial Weight: 39.81386g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.65486g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 4M NaCl
467.51g NaCl Lot:037047A
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883 — **Cal:** 1/14/05 — **Due:** 7/14/05

Initial pH: 8.92 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 7.57 — **Cal:**7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **SN:** E98-191 — **Cal:** 01/07/05 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −461mV$_{SCE}$ — **Model:** Keithley 614 — **SN:** 467374
Ept: +9.09mV$_{SCE}$ — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 30b

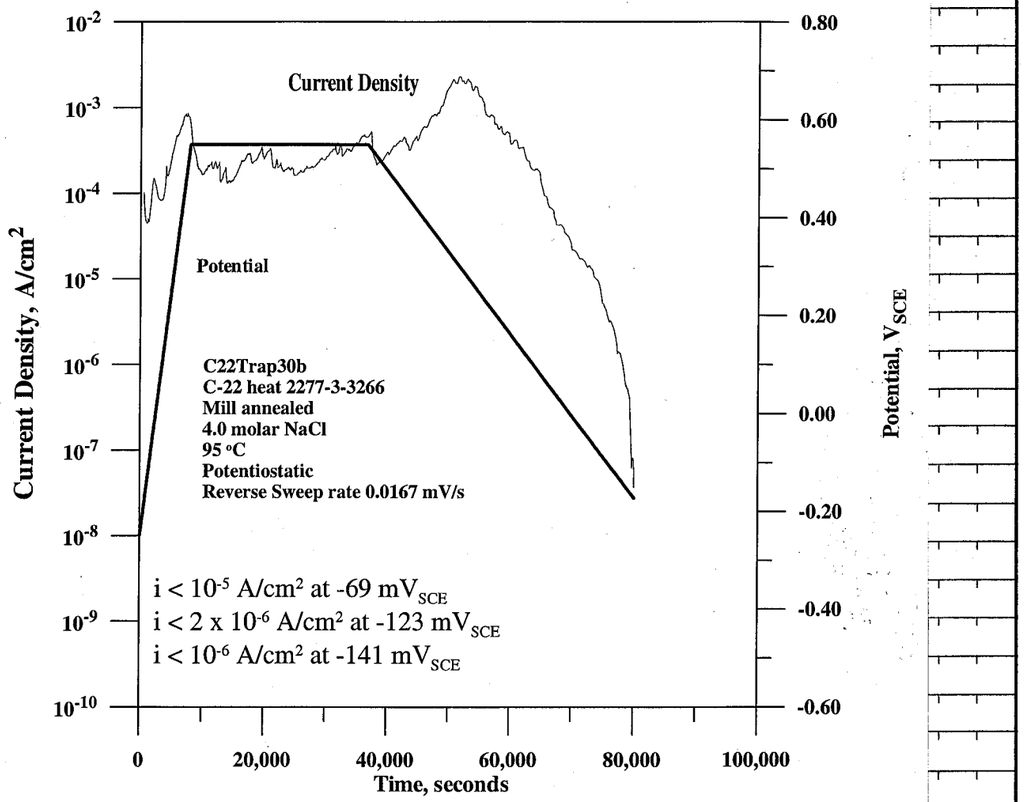
Number of Crevice Corrosion Sites: 20 /24 (24 max.)

Twenty corrosion sites.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/30/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/30/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: 9/29/04 **Due:** 3/29/05

Initial Weight: 39.57235 g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 39.56772 g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 5.5M NaCl
642.84g NaCl Lot: 042771
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 8.60 **Model:** Orion EA 940 **SN:** 2330
Final pH: 7.87 **Cal:** 7/21/04 **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 60° C **Measured with Hg Thermometer** **SN:** 323007
Cal: 10/14/04 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −458 mV_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: −3.42 mV_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 31a

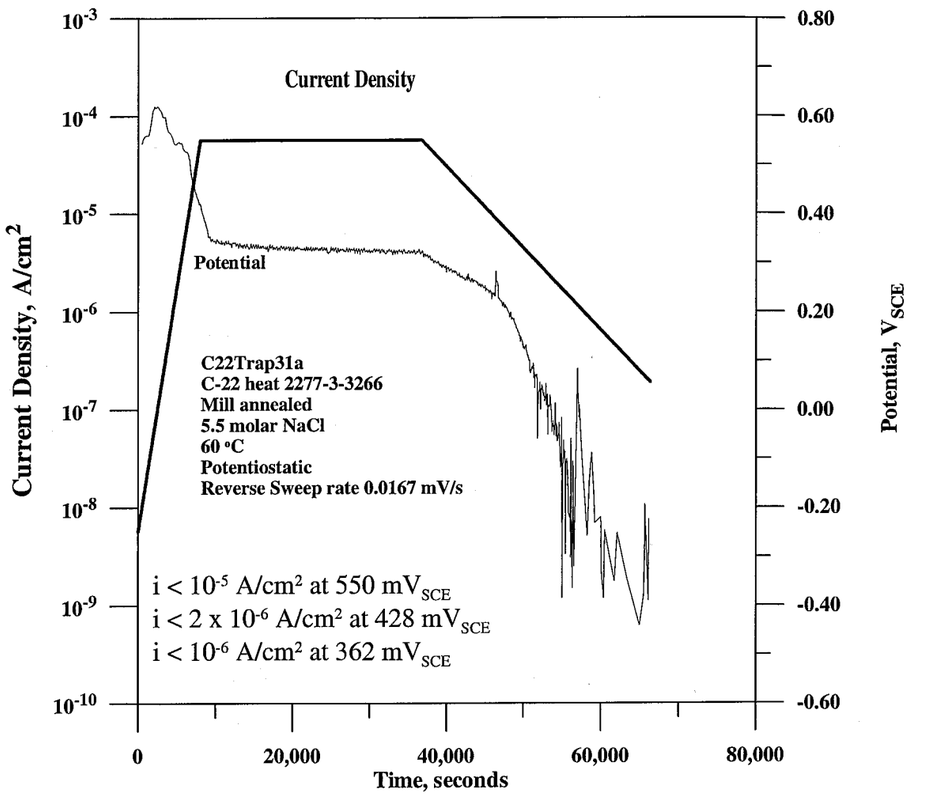
Number of Crevice Corrosion Sites: 0/24 (24 max.)

No crevice corrosion.
Mild gold staining.
*Repolish for further testing.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/31/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/31/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: 9/29/04 **Due:** 3/29/05

Initial Weight: 38.90124 g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 38.89820 g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 5.5M NaCl
642.85g NaCl Lot: 042771
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 8.56 **Model:** Orion EA 940 **SN:** 2330
Final pH: 7.84 **Cal:7/21/04** **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 60° C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −527 mV_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: +25 mV_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 31b

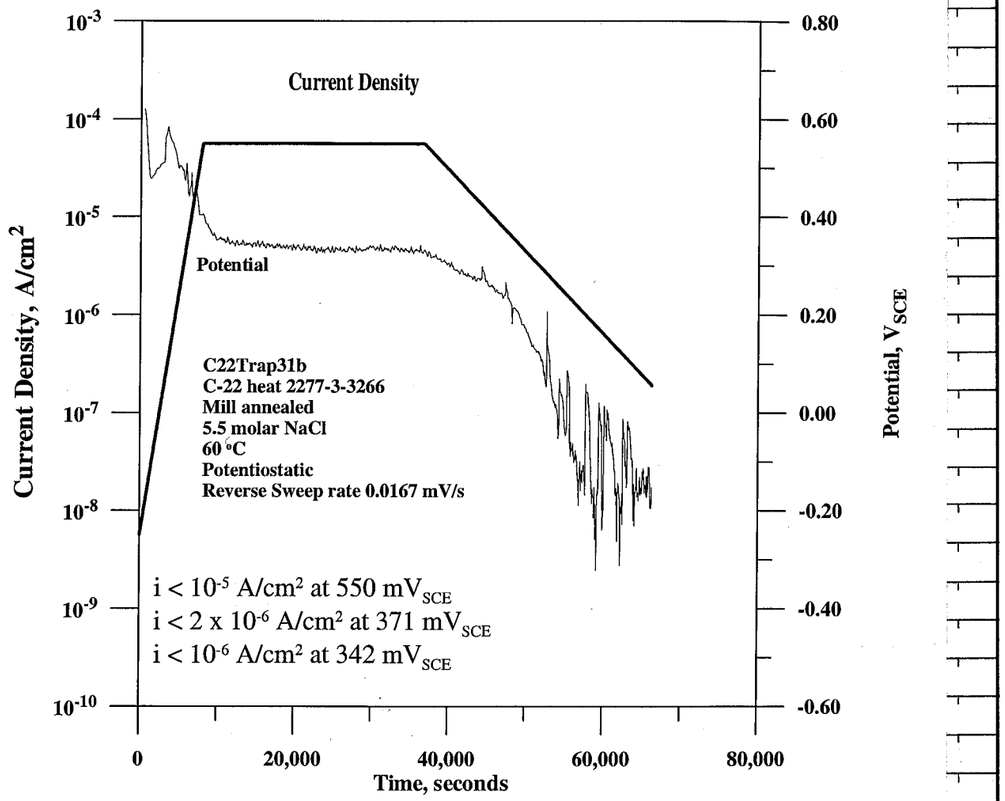
Number of Crevice Corrosion Sites: 3 /24 (24 max.)

Three corrosion sites.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/31/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	3/31/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: 9/29/04 **Due:** 3/29/05

Initial Weight: 38.73905 g
Final Weight: 38.73351 g
Model: Sartorius Genius **SN:** 12809099
Cal: 11/10/04 **Due:** 5/10/05

Solution: 5.5M NaCl
642.83g NaCl Lot: 042771
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 8.34
Final pH: 7.61
Model: Orion EA 940 **SN:** 2330
Cal: 7/21/04 **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 80° C **Measured with Hg Thermometer** **SN:** 323007
Cal: 10/14/04 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −360 mV_{SCE}
Ept: +150 mV_{SCE}
Model: Keithley 614 **SN:** 467374
Cal: 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 32a

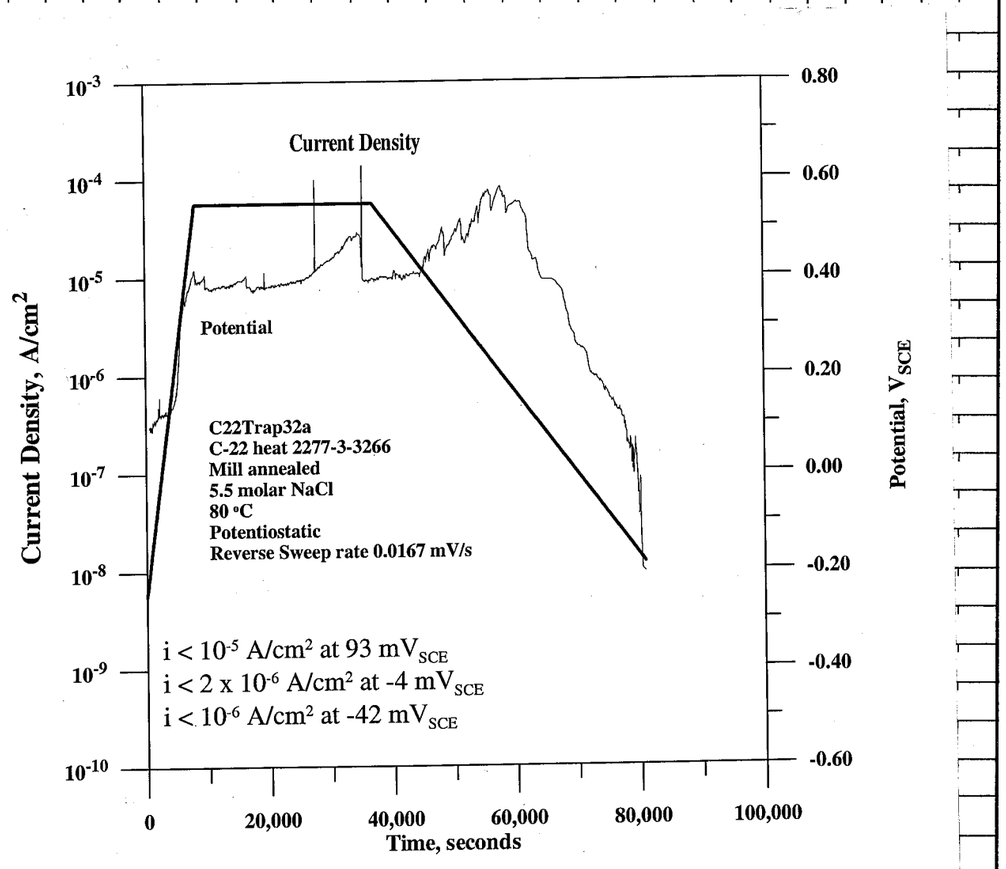
Number of Crevice Corrosion Sites: 5 /24 (24 max.)

5 corrosion sites.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/8/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/8/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **Cal:** 9/29/04 **SN:** 139072 **Due:** 3/29/05

Initial Weight: 39.69039 g **Final Weight:** 39.67656 g **Model:** Sartorius Genius **Cal:** 11/10/04 **SN:** 12809099 **Due:** 5/10/05

Solution: 5.5M NaCl
642.83g NaCl Lot: 042771
+ DI to 2L

Reagents measured with **Model:** OHAUS **Cal:** 1/14/05 **SN:** 2883 **Due:** 7/14/05

Initial pH: 8.53 **Final pH:** 7.68 **Model:** Orion EA 940 **Cal:7/21/04** **pH Probe:** #13-620-296 **SN:** 2330 **Due:** 7/21/05 **SN:** 4079126

Test Temperature: 80° C **Measured with Hg Thermometer** **Cal:** 01/07/05 **SN:** E98-191 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −280 mV$_{SCE}$ **Ept:** +110 mV$_{SCE}$ **Model:** Keithley 614 **Cal:** 12/2/04 **SN:** 467374 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 32b

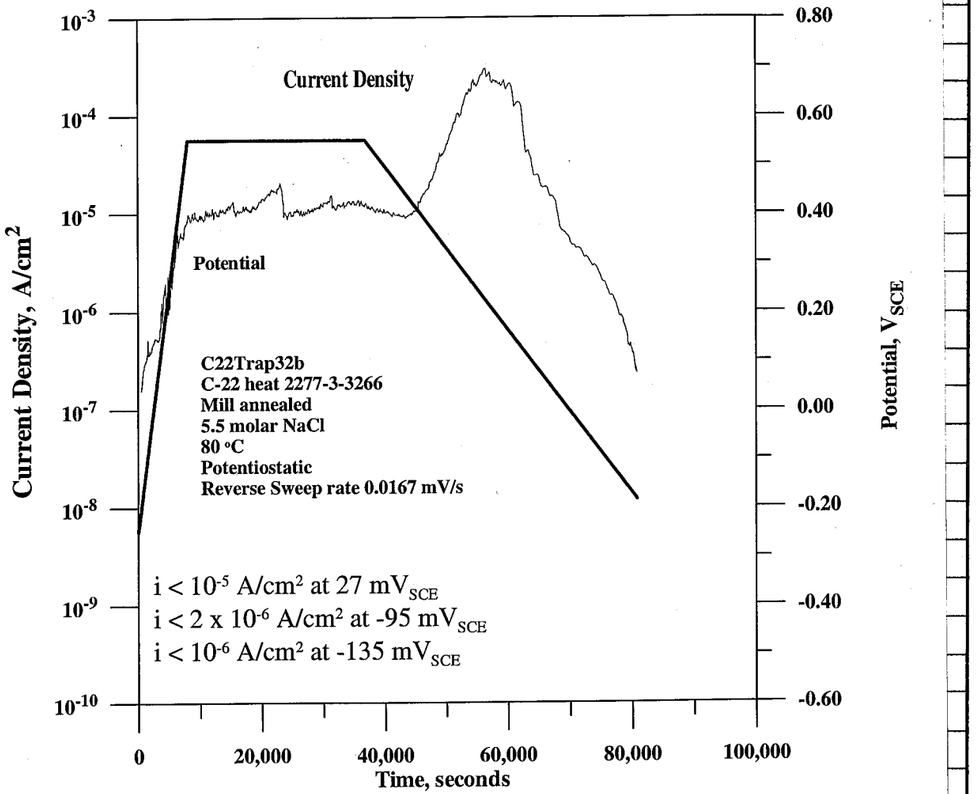
Number of Crevice Corrosion Sites: 10 /24 (24 max.)

Crevice corrosion present.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/8/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/8/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072
Cal: ~~9/29/04~~ 4/11/05 SBY 4/21/05 — **Due:** ~~3/29/05~~ 10/11/05 SBY 4/21/05

Initial Weight: 39.49352 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.38727 g — **Cal:** ~~11/10/04~~ 11/10/04 SBY 4/21/05 — **Due:** 5/10/05

Solution: 5.5 M NaCl
642.85 g NaCl Lot: 042771
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: 1/14/05 — **Due:** 7/14/05

Initial pH: 8.17 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 7.32 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95° C — **Measured with Hg Thermometer** — **SN:** 323007
Cal: 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −222 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +268 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 33a

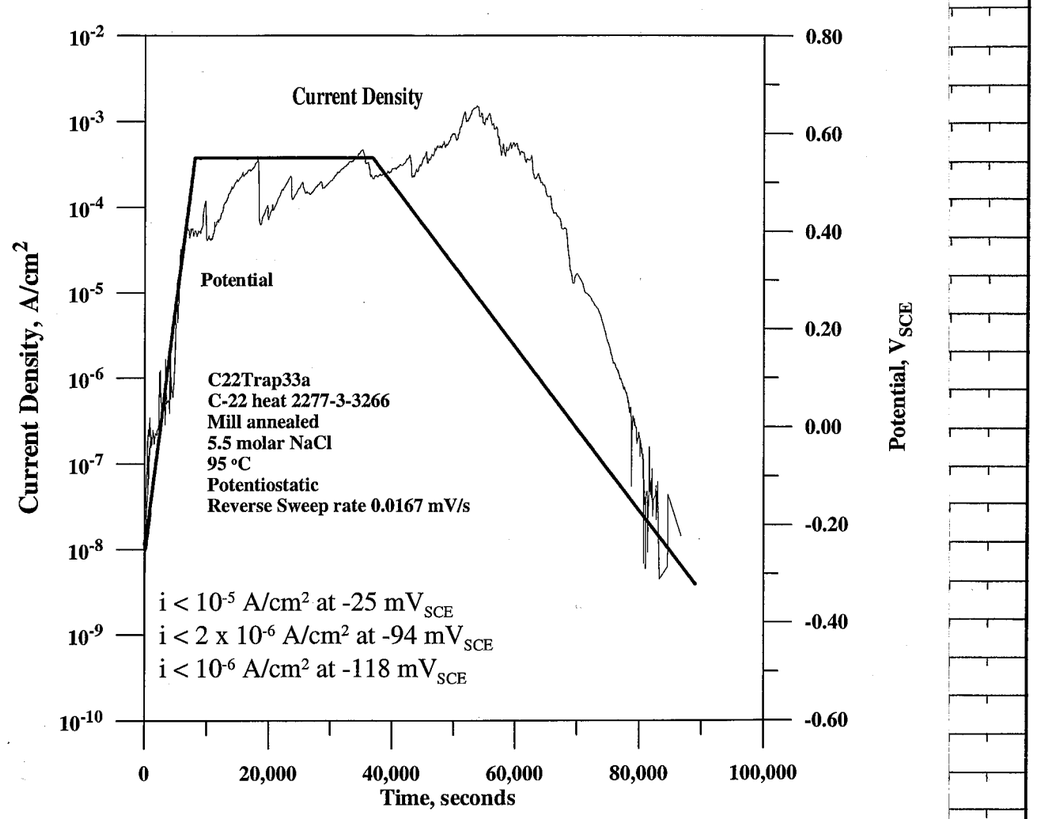
Number of Crevice Corrosion Sites: 15 /24 (24 max.)

Crevice corrosion present.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
	4/12/05	Recorded by Steve Young	4/12/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/12/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104
Cal: ~~9/29/04~~ 4/11/05 SBY 4/21/05
SN: 139072
Due: ~~3/29/05~~ 10/11/05 SBY 4/21/05

Initial Weight: 40.41751 g
Final Weight: 40.38564 g
Model: Sartorius Genius
Cal: 11/10/04
SN: 12809099
Due: 5/10/05

Solution: 5.5M NaCl
642.83g NaCl Lot: 042771
+ DI to 2L

Reagents measured with
Model: OHAUS
Cal: 1/14/05
SN: 2883
Due: 7/14/05

Initial pH: 8.32
Final pH: 7.41
Model: Orion EA 940
Cal:7/21/04
pH Probe: #13-620-296
SN: 2330
Due: 7/21/05
SN: 4079126

Test Temperature: 95 °C
Measured with Hg Thermometer
Cal: 01/07/05
SN: E98-191
Due: 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51
SN: 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −376 mV_{SCE}
Ept: +109 mV_{SCE}
Model: Keithley 614
Cal: 12/2/04
SN: 467374
Due: 12/2/2005

Potentiostat: Solartron 1480
SN: 00240551

DATA FILE: C-22 Trap 33b

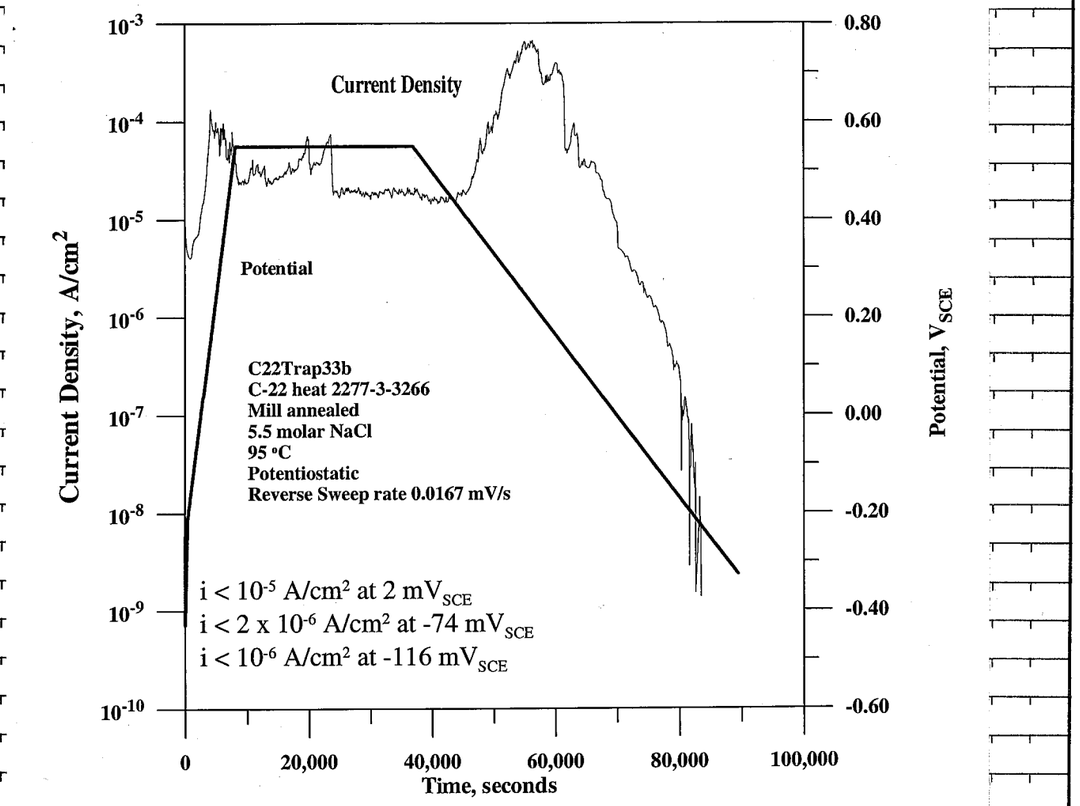
Number of Crevice Corrosion Sites: 10 /24 (24 max.)

Crevice corrosion present.
Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/12/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/12/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072
Cal: ~~9/29/04~~ 4/11/05 — **Due:** ~~3/29/05~~ 10/11/05
SBY 4/21/05 — SBY 4/21/05

Initial Weight: 39.46514 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.463605 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 3.5M $MgCl_2$ (7M Cl)
1423.20g $MgCl_2$ Lot:041703
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: 1/14/05 — **Due:** 7/14/05

Initial pH: 3.30 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 5.14 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 60° C — **Measured with Hg Thermometer** — **SN:** 323007
Cal: 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −183 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: + 450 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 34a

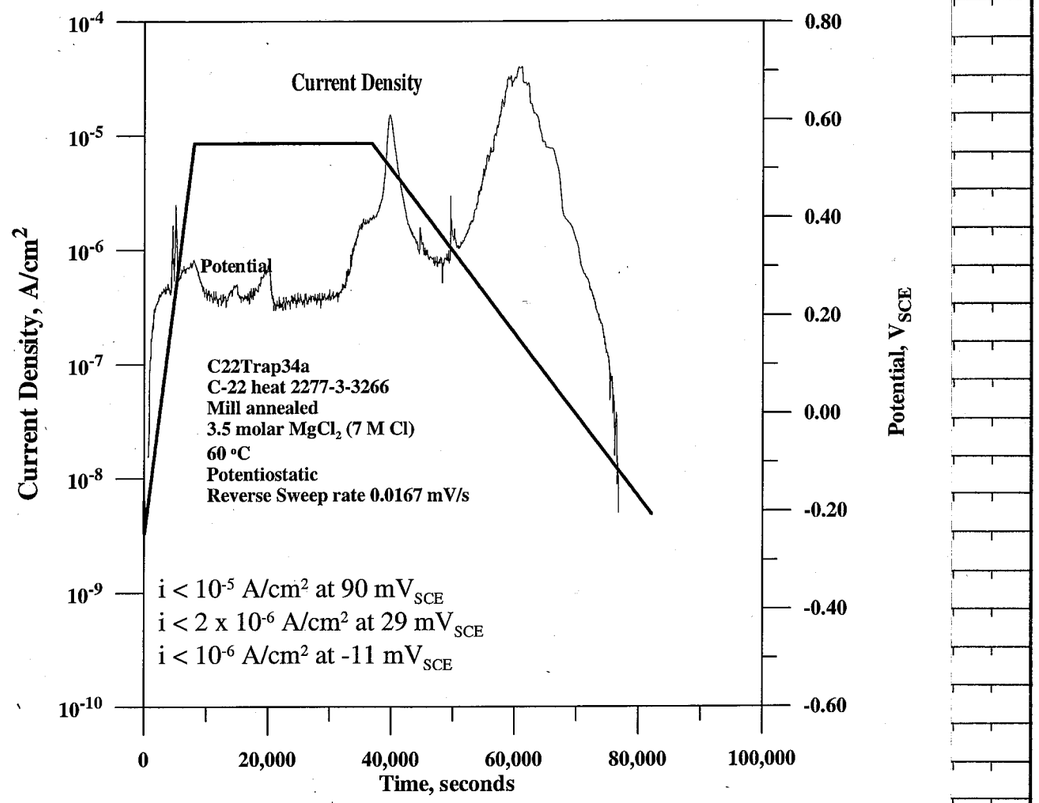
Number of Crevice Corrosion Sites: 5 /24 (24 max.)

Five corrosion sites.
No staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/14/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/14/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072
Cal: ~~3/29/04~~ 4/11/05 SBY 4/21/05 — **Due:** ~~3/29/05~~ 10/11/05 SBY 4/21/05

Initial Weight: 39.50691 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.50549 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 3.5 M $MgCl_2$ (7M Cl)
1423.17g $MgCl_2$ Lot:041703
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: 1/14/05 — **Due:** 7/14/05

Initial pH: 3.71 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 5.14 — **Cal:7/21/04** — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 60° C — **Measured with Hg Thermometer** — **SN:** E98-191
Cal: 01/07/05 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −211 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: + 97 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 34b

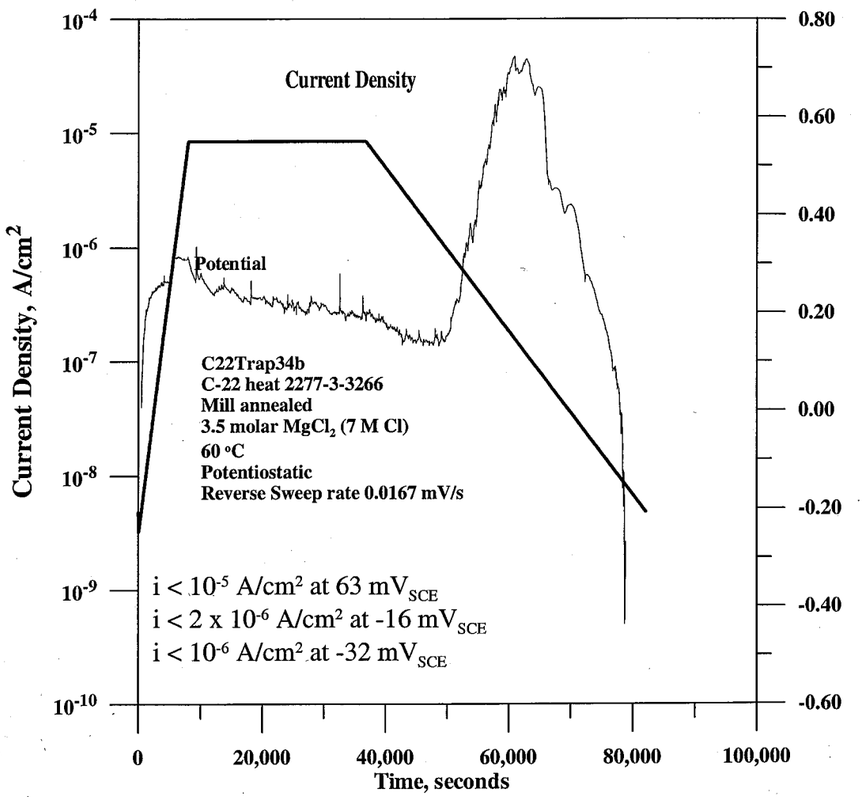
Number of Crevice Corrosion Sites: 4 /24 (24 max.)

Four corrosion sites.
No staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/14/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/14/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072
Cal: ~~9/29/04~~ 4/11/05 — **Due:** ~~3/29/05~~ 10/11/05
SBY 4/21/05 — SBY 4/21/05

Initial Weight: 40.25084 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 40.21571 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 5M $MgCl_2$ (10M Cl)
2033.05g $MgCl_2 \cdot 6H_2O$ Lot: 042821
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: 1/14/05 — **Due:** 7/14/05

Initial pH: 2.28 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 4.05 — **Cal:**7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 60°C — **Measured with Hg Thermometer** — **SN:** 323007
Cal: 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −149 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +475 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 35a

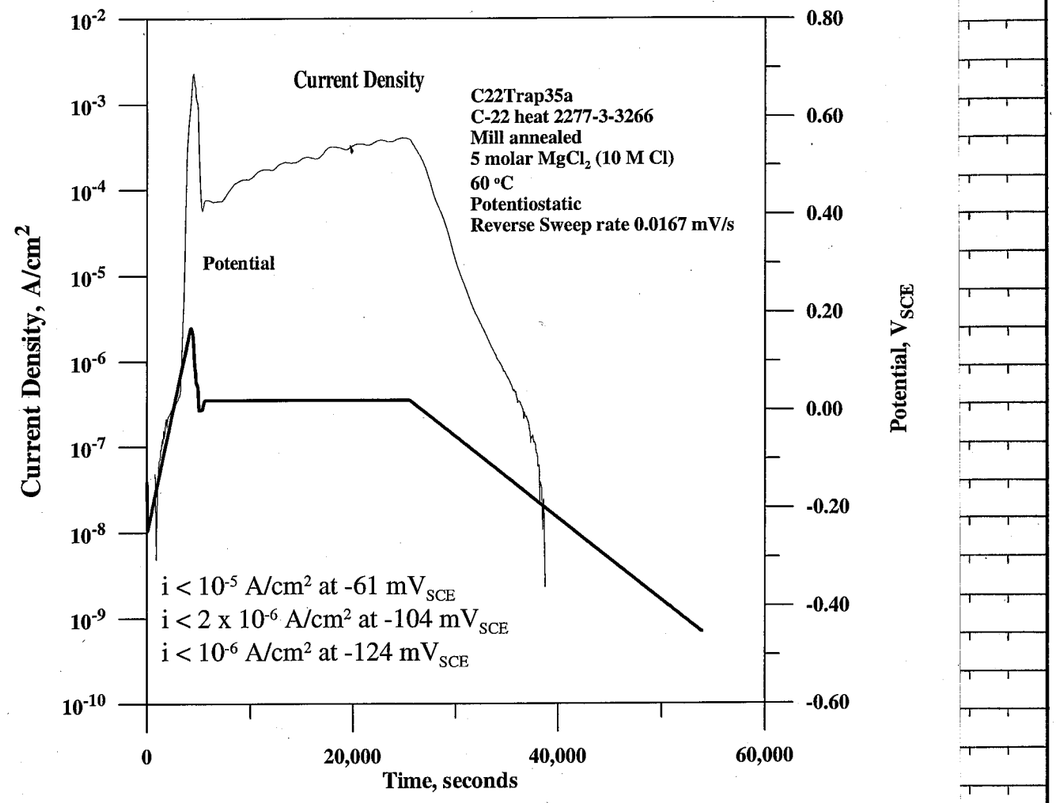
Number of Crevice Corrosion Sites: 20/24 (24 max.)

No corrosion under crevice washers, only outside edges.
No staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/19/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/19/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: ~~9/29/04~~ 4/11/05 **Due:** ~~3/29/05~~ 10/11/05
SBY 4/21/05 SBY 4/21/05

Initial Weight: 40.59742g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 40.55151g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 5M $MgCl_2$ (10M Cl)
2033.09g $MgCl_2 \cdot 6H_2O$ Lot:042821
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 2.34 **Model:** Orion EA 940 **SN:** 2330
Final pH: 4.09 **Cal:7/21/04** **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 60°C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −345 mV_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: +211 mV_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 35b

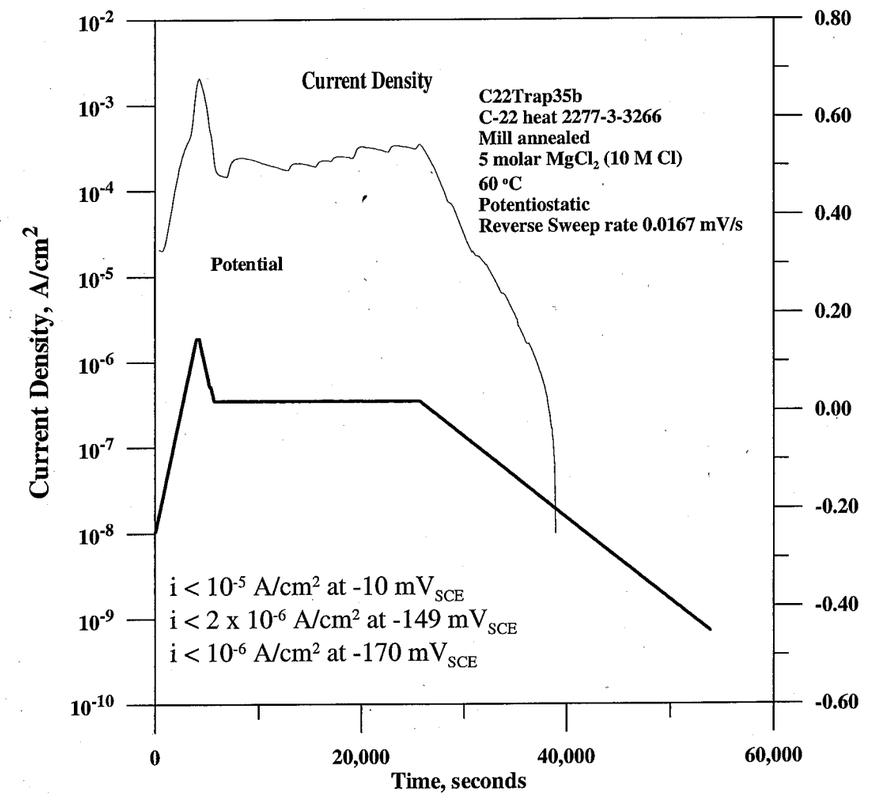
Number of Crevice Corrosion Sites: 22/24 (24 max.)

Minor corrosion under crevice washers.
No staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/19/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/19/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072
Cal: ~~9/20/04~~ 4/11/05 SBY 4/21/05 — **Due:** ~~3/20/05~~ 10/11/05 SBY 4/21/05

Initial Weight: 39.54123 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.46246 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 3.5M $MgCl_2$ (7M Cl)
1423.24g $MgCl_2 \cdot 6H_2O$ Lot: 04282
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883
Cal: 1/14/05 — **Due:** 7/14/05

Initial pH: 4.20 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 3.16 — **Cal:** 7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 80° C — **Measured with Hg Thermometer** — **SN:** 323007
Cal: 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −150 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +480 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 36a

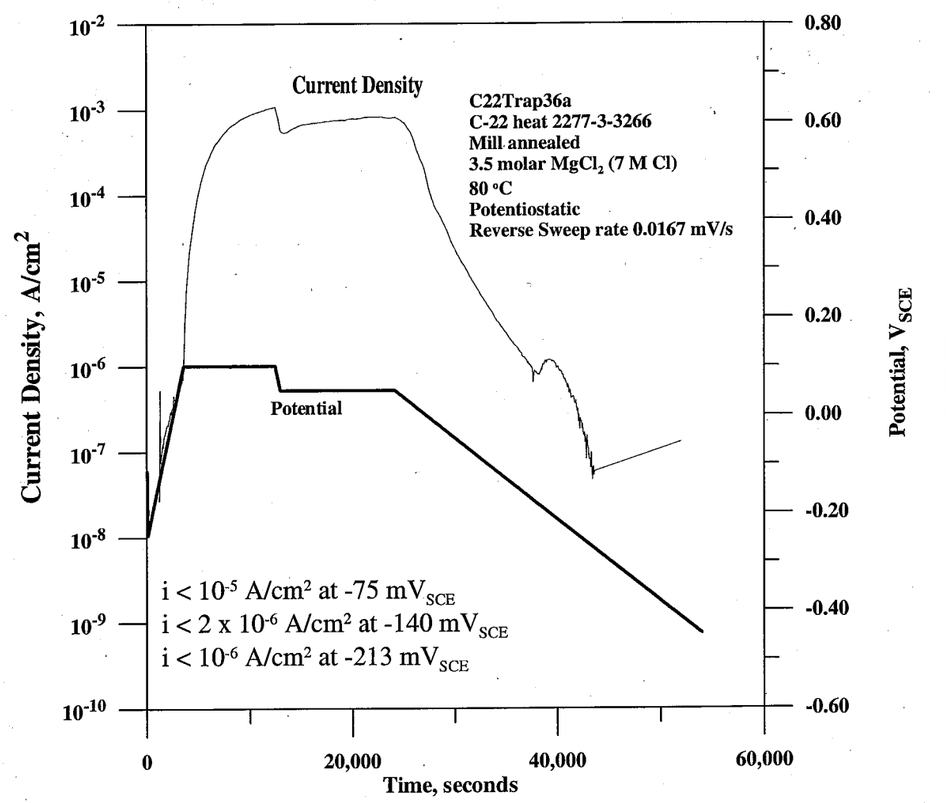
Number of Crevice Corrosion Sites: 11 /24 (24 max.)

Mild staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/20/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/20/05

Project No._____
Book No._____ TITLE _____

From Page No.____

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: ~~9/29/04~~ 4/11/05 Due: ~~3/29/05~~ 10/11/05
SBY 4/21/05 SBY 4/21/05

Initial Weight: 40.37935 g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 40.35763 g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 3.5M $MgCl_2$ (7M Cl)
1423.14g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 4.69 **Model:** Orion EA 940 **SN:** 2330
Final pH: 5.44 **Cal:**7/21/04 **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 80° C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −380 mV_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: +510 mV_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 36b

Number of Crevice Corrosion Sites: 10/24 (24 max.)

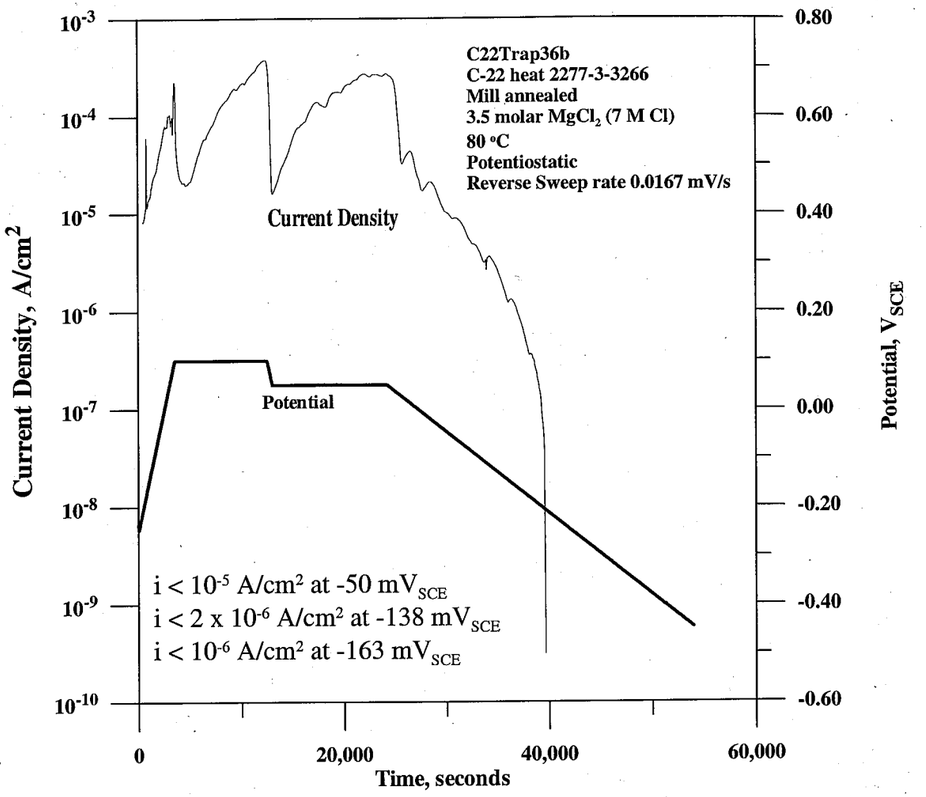
Mild staining.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/20/05

Project No._____
TITLE _____ Book No._____

From Page No.____



To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/20/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver:	Proto 6104 **Cal:** 4/11/05	**SN:** 139072 **Due:** 10/11/05
Initial Weight: 39.04885 g **Final Weight:** 39.02677 g	**Model:** Sartorius Genius **Cal:** 11/10/04	**SN:** 12809099 **Due:** 5/10/05
Solution: 5M $MgCl_2$ (10M Cl) 2033.11g $MgCl_2 \cdot 6H_2O$ Lot: 043664 + DI to 2L		
Reagents measured with	**Model:** OHAUS **Cal:** 1/14/05	**SN:** 2883 **Due:** 7/14/05
Initial pH: 2.23 **Final pH:** 4.96	**Model:** Orion EA 940 **Cal:7/21/04** **pH Probe:** #13-620-296	**SN:** 2330 **Due:** 7/21/05 **SN:** 4079126
Test Temperature: 80° C	**Measured with Hg Thermometer** **Cal:** 10/14/04	**SN:** 323007 **Due:** 10/14/2005
Counter Electrode: Platinum Flag		
Reference Electrode: Fisher 13-620-52		**SN:** 4028036
Gas: 99.999% Nitrogen Gas		
Ecorr: −370 mV_{SCE} **Ept:** +460 mV_{SCE}	**Model:** Keithley 614 **Cal:** 12/2/04	**SN:** 467374 **Due:** 12/2/2005
Potentiostat: Solartron 1480		**SN:** 00240551

DATA FILE: C-22 Trap 37a

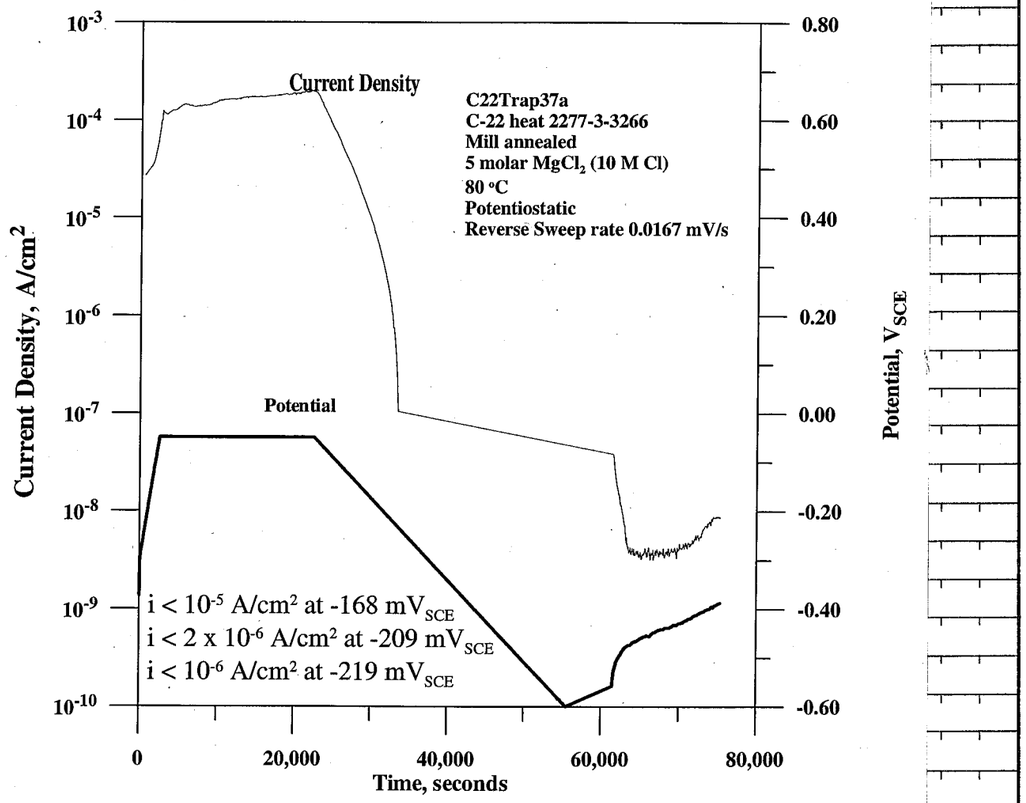
Number of Crevice Corrosion Sites: 11 /24 (24 max.)

Corrosion initiating around outside edges of crevice washers and moving outward.
Grain boundaries clearly defined.
Dark staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/22/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/22/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **Cal:** 4/11/05 — **SN:** 139072 — **Due:** 10/11/05

Initial Weight: 39.27164g
Final Weight: 39.24825g
Model: Sartorius Genius — **Cal:** 11/10/04 — **SN:** 12809099 — **Due:** 5/10/05

Solution: 5M $MgCl_2$ (10M Cl)
2033.10g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **Cal:** 1/14/05 — **SN:** 2883 — **Due:** 7/14/05

Initial pH: 2.41
Final pH: 4.80
Model: Orion EA 940 — **Cal:** 7/21/04 — **pH Probe:** #13-620-296 — **SN:** 2330 — **Due:** 7/21/05 — **SN:** 4079126

Test Temperature: 80° C — **Measured with Hg Thermometer** — **Cal:** 01/07/05 — **SN:** E98-191 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −410 mV_{SCE}
Ept: +470 mV_{SCE}
Model: Keithley 614 — **Cal:** 12/2/04 — **SN:** 467374 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 37b

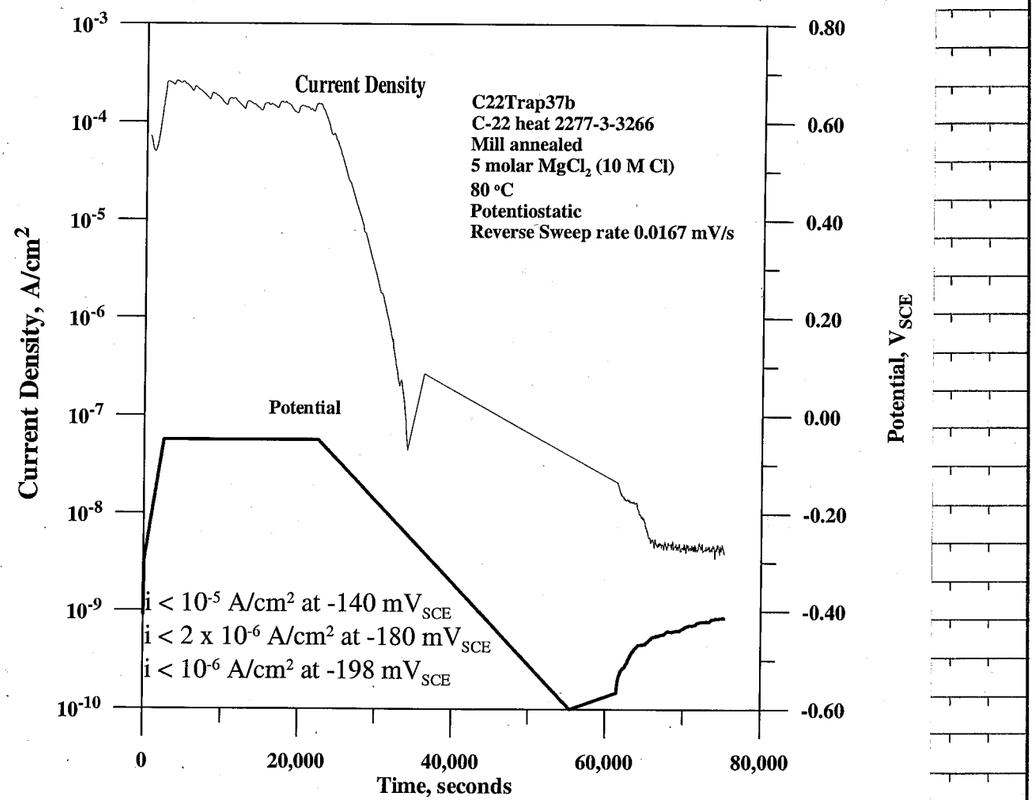
Number of Crevice Corrosion Sites: 13 /24 (24 max.)

Corrosion initiating around outside edges of crevice washers and moving outward.
Grain boundaries clearly defined.
Dark staining.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/22/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/22/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **SN:** 139072 — **Cal:** 4/11/05 — **Due:** 10/11/05

Initial Weight: 39.42491 g — **Model:** Sartorius Genius — **SN:** 12809099

Final Weight: 39.40042 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 3.5M $MgCl_2$ (7M Cl)
1423.15g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **SN:** 2883 — **Cal:** 1/14/05 — **Due:** 7/14/05

Initial pH: 3.54 — **Model:** Orion EA 940 — **SN:** 2330

Final pH: 4.50 — **Cal:**7/21/04 — **Due:** 7/21/05

pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **SN:** 323007 — **Cal:** 10/14/04 — **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 — **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −365 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374

Ept: +456 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 38a

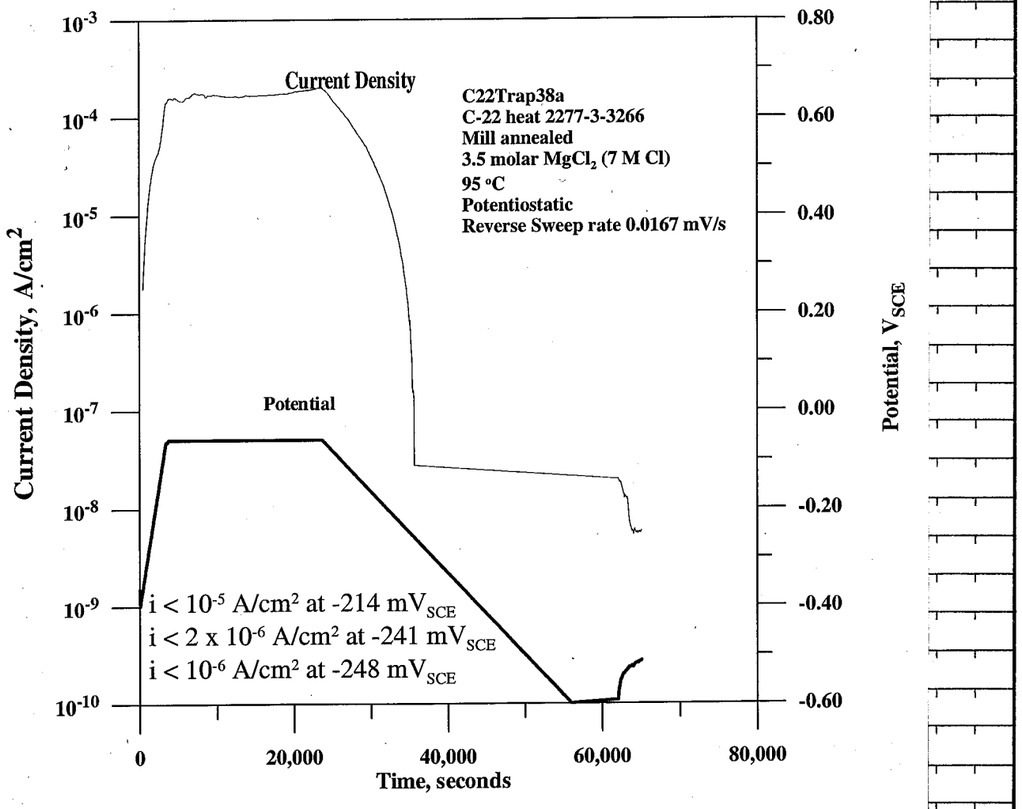
Number of Crevice Corrosion Sites: 24 /24 (24 max.)

Mild surface staining on all surfaces.
Crevice corrosion developes from outer edge of crevice washers.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/26/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/26/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **Cal:** 4/11/05 — **SN:** 139072 — **Due:** 10/11/05

Initial Weight: 39.06284 g — **Model:** Sartorius Genius — **SN:** 12809099
Final Weight: 39.05949 g — **Cal:** 11/10/04 — **Due:** 5/10/05

Solution: 3.5M $MgCl_2$
1423.17g $MgCl_2 \cdot 6H_2O$ Lot: 0436064
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **Cal:** 1/14/05 — **SN:** 2883 — **Due:** 7/14/05

Initial pH: 3.59 — **Model:** Orion EA 940 — **SN:** 2330
Final pH: 5.23 — **Cal:**7/21/04 — **Due:** 7/21/05
pH Probe: #13-620-296 — **SN:** 4079126

Test Temperature: 95°C — **Measured with Hg Thermometer** — **Cal:** 01/07/05 — **SN:** E98-191 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −405 mV_{SCE} — **Model:** Keithley 614 — **SN:** 467374
Ept: +448 mV_{SCE} — **Cal:** 12/2/04 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 38b

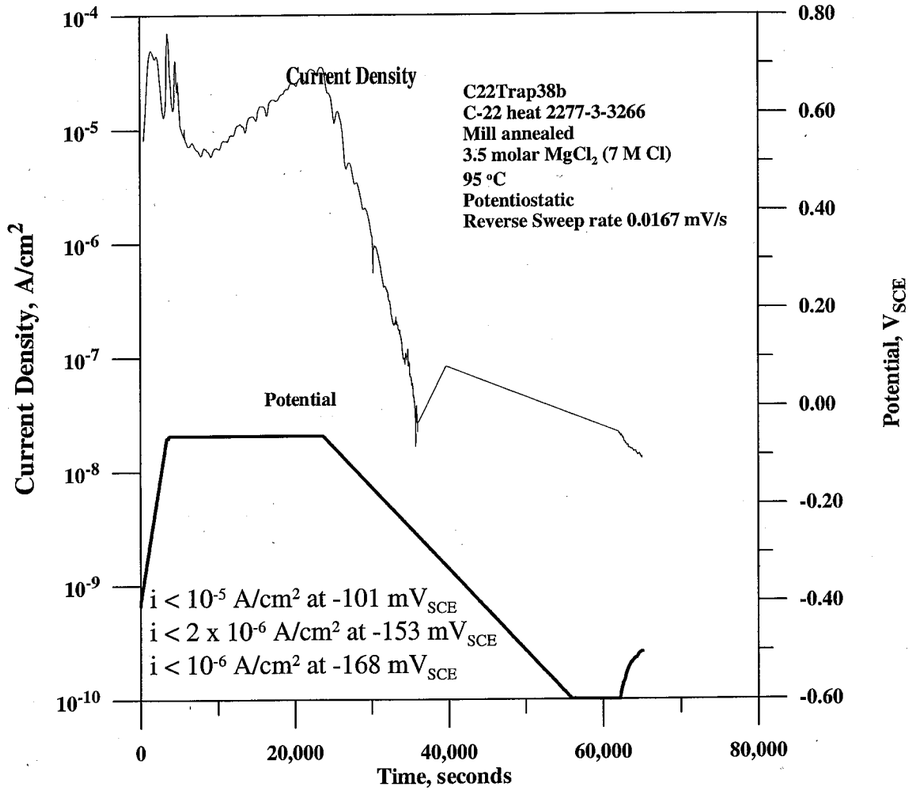
Number of Crevice Corrosion Sites: 6 /24 (24 max.)

Mild surface staining on all sides.
Corrosion from crevice washer outer edges only.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/26/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/26/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torque to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072 **Cal:** 4/11/05 **Due:** 10/11/05

Initial Weight: 39.63893 g **Final Weight:** 39.52530 g **Model:** Sartorius Genius **SN:** 12809099 **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 5M $MgCl_2$ (10M Cl)
2033.08g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883 **Cal:** 1/14/05 **Due:** 7/14/05

Initial pH: 3.10 **Final pH:** 5.28 **Model:** Orion EA 940 **SN:** 2330 **Cal:7/21/04** **Due:** 7/21/05 **pH Probe:** #13-620-296 **SN:** 4079126

Test Temperature: 95° C **Measured with Hg Thermometer** **SN:** 323007 **Cal:** 10/14/04 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −365 mV_{SCE} **Ept:** +447 mV_{SCE} **Model:** Keithley 614 **SN:** 467374 **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 39a

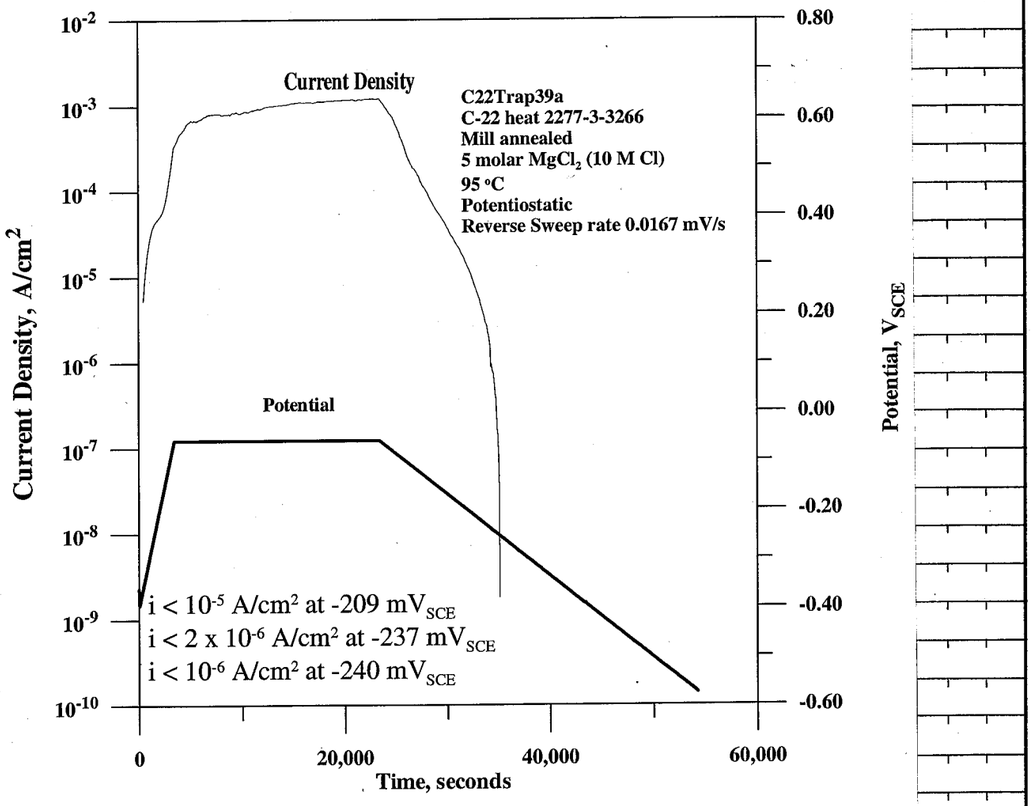
Number of Crevice Corrosion Sites: 24/24 (24 max.)

Dark black staining on all surfaces.
Corrosion developes from outer edges
of crevice washers.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/27/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/27/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 — **Cal:** 4/11/05 — **SN:** 139072 — **Due:** 10/11/05

Initial Weight: 39.70659 g
Final Weight: 39.64435 g
Model: Sartorius Genius — **Cal:** 11/10/04 — **SN:** 12809099 — **Due:** 5/10/05

Solution: 5M $MgCl_2$ (10M Cl)
2033.13g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with — **Model:** OHAUS — **Cal:** 1/14/05 — **SN:** 2883 — **Due:** 7/14/05

Initial pH: 2.57
Final pH: 5.31
Model: Orion EA 940 — **Cal:**7/21/04 — **pH Probe:** #13-620-296 — **SN:** 2330 — **Due:** 7/21/05 — **SN:** 4079126

Test Temperature: 95° C — **Measured with Hg Thermometer** — **Cal:** 01/07/05 — **SN:** E98-191 — **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 — **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −385 mV_{SCE}
Ept: + 454 mV_{SCE}
Model: Keithley 614 — **Cal:** 12/2/04 — **SN:** 467374 — **Due:** 12/2/2005

Potentiostat: Solartron 1480 — **SN:** 00240551

DATA FILE: C-22 Trap 39b

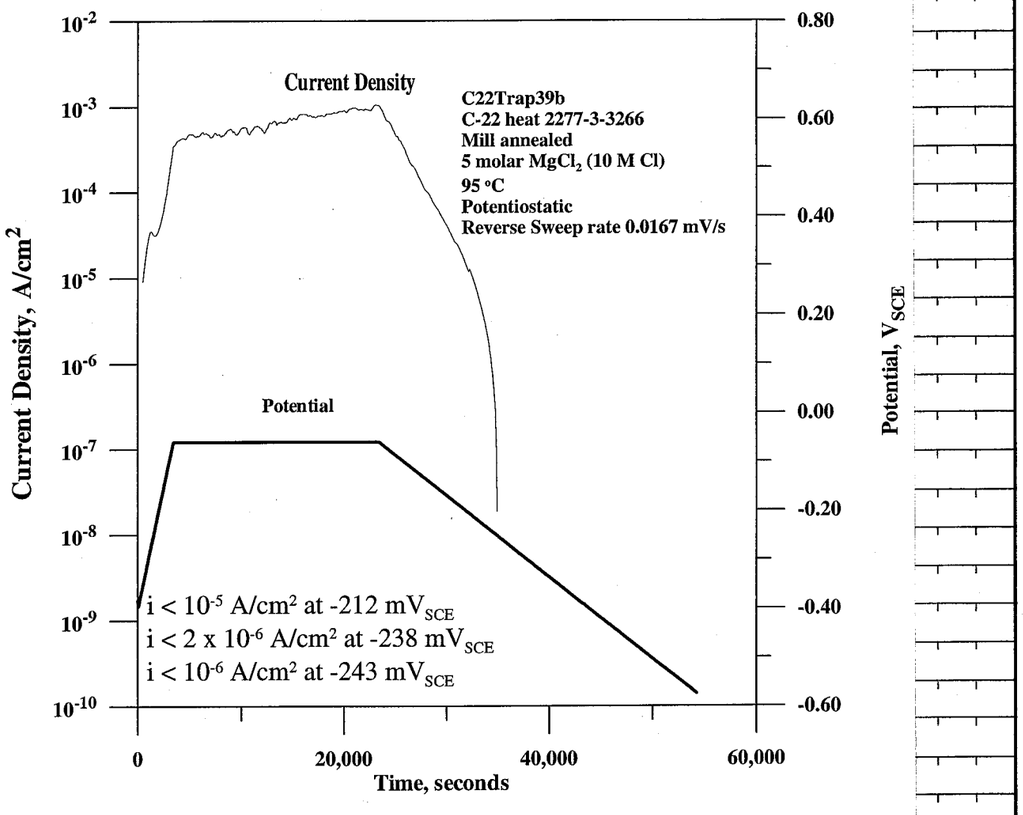
Number of Crevice Corrosion Sites: 24 /24 (24 max.)

Dark black staining on all surfaces.
Corrosion developes from outer edges of crevice washer.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/27/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	4/27/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072 **Cal:** 4/11/05 **Due:** 10/11/05

Initial Weight: 39.73573 g **Final Weight:** 39.69930 g — **Model:** Sartorius Genius **SN:** 12809099 **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 3.5 M $MgCl_2$ (7M Cl)
1423.15 g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883 **Cal:** 1/14/05 **Due:** 7/14/05

Initial pH: 3.83 **Final pH:** 5.61 — **Model:** Orion EA 940 **SN:** 2330 **Cal:7/21/04** **Due:** 7/21/05 **pH Probe:** #13-620-296 **SN:** 4079126

Test Temperature: 105° C — **Measured with Hg Thermometer** **SN:** 323007 **Cal:** 10/14/04 **Due:** 10/14/2005

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-52 **SN:** 4028036

Gas: 99.999% Nitrogen Gas

Ecorr: −375 mV_{SCE} **Ept:** +457 mV_{SCE} — **Model:** Keithley 614 **SN:** 467374 **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 40a

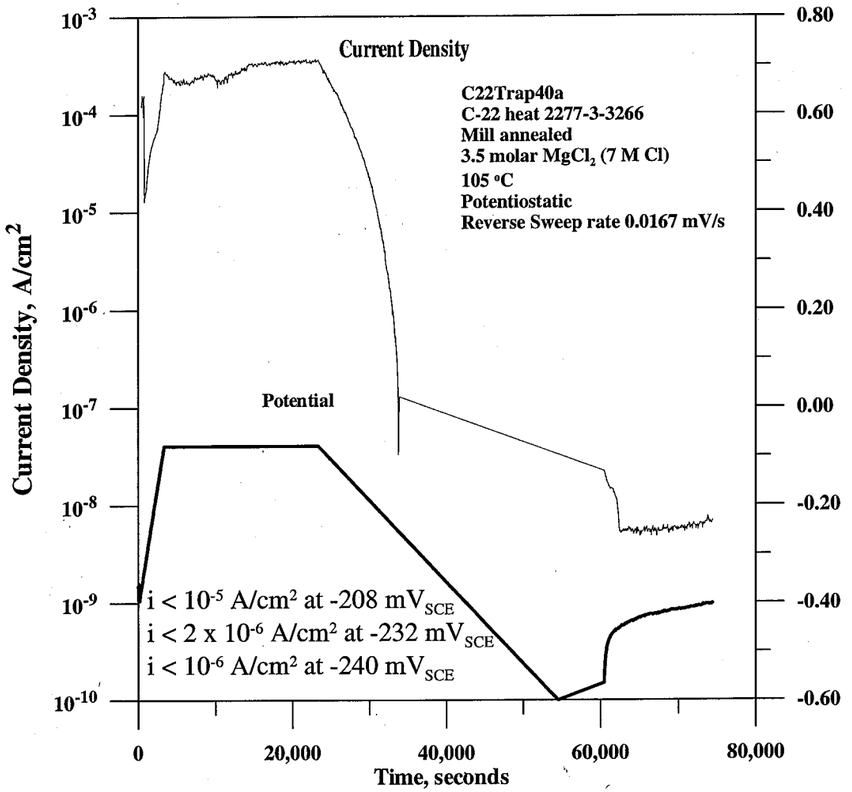
Number of Crevice Corrosion Sites: 24/24 (24 max.)

Dark blue staining on all surfaces.
Corrosion developes from outer edge of crevice washers.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	5/3/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	5/3/05

From Page No.

POTENTIAL SCAN AND HOLD

Objective: Same as page 1.

Alloy / Heat No. : C-22 Heat# 2277-3-3266

Specimen Preparation: Specimen machined to dimensions specified in CNWRA Drawing. Specimen surfaces polished to 600 Grit finish using SiC paper. Specimen cleaned in acetone and rinsed in DI water. PTFE crevice forming washers attached to specimen using insulated C-276 hardware. Hardware Torgue to 50 in-oz.

Torque Screwdriver: Proto 6104 **SN:** 139072
Cal: 4/11/05 **Due:** 10/11/05

Initial Weight: 39.89529 g **Model:** Sartorius Genius **SN:** 12809099
Final Weight: 39.85040 g **Cal:** 11/10/04 **Due:** 5/10/05

Solution: 3.5M $MgCl_2$ (7M Cl)
1423.16g $MgCl_2 \cdot 6H_2O$ Lot: 043664
+ DI to 2L

Reagents measured with **Model:** OHAUS **SN:** 2883
Cal: 1/14/05 **Due:** 7/14/05

Initial pH: 3.45 **Model:** Orion EA 940 **SN:** 2330
Final pH: 5.35 **Cal:7/21/04** **Due:** 7/21/05
pH Probe: #13-620-296 **SN:** 4079126

Test Temperature: 105° C **Measured with Hg Thermometer** **SN:** E98-191
Cal: 01/07/05 **Due:** 07/07/05

Counter Electrode: Platinum Flag

Reference Electrode: Fisher 13-620-51 **SN:** 7282317

Gas: 99.999% Nitrogen Gas

Ecorr: −381 mV_{SCE} **Model:** Keithley 614 **SN:** 467374
Ept: +457 mV_{SCE} **Cal:** 12/2/04 **Due:** 12/2/2005

Potentiostat: Solartron 1480 **SN:** 00240551

DATA FILE: C-22 Trap 40b

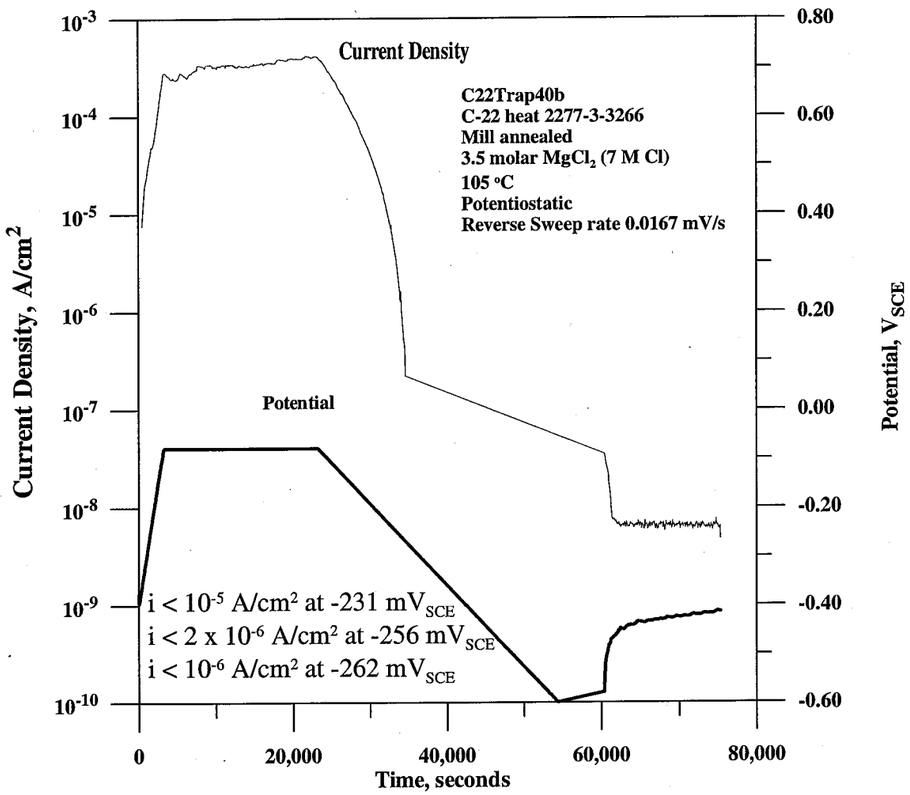
Number of Crevice Corrosion Sites: 24/24 (24 max.)

Dark blue tint staining on all surfaces.
Corrosion developes from outer edges of crevice washers.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	5/3/05

From Page No.



To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by Steve Young	5/3/05

Project No._____
Book No._____ TITLE _____

From Page No.____

Continued Testing

In Notebook

#712

I have reviewed this scientific notebook and find it in compliance with QAP-001. There is sufficient information regarding procedures used for conducting tests, acquiring and analyzing data so that another qualified individual could repeat the activity.

Mary Jain 6/6/05

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	5/3/05

ADDITIONAL INFORMATION FOR SCIENTIFIC NOTEBOOK NO. 697

Document Date:	03/28/2005
Availability:	Southwest Research Institute® Center for Nuclear Waste Regulatory Analyses 6220 Culebra Road San Antonio, Texas 78228
Contact:	Southwest Research Institute® Center for Nuclear Waste Regulatory Analyses 6220 Culebra Road San Antonio, TX 78228-5166 Attn.: Director of Administration 210.522.5054
Data Sensitivity:	■"Non-Sensitive" □ Sensitive □"Non-Sensitive - Copyright" □ Sensitive - Copyright
Date Generated:	06/04/2005
Operating System: (including version number)	Windows NT
Application Used: (including version number)	Excel and others unknown
Media Type: (CDs, 3 1/2, 5 1/4 disks, etc.)	1 - CD
File Types: (.exe, .bat, .zip, etc.)	xls, dat
Remarks: (computer runs, etc.)	Media contains two folders: galvanodynamic and potentiodynamic containing data files.