SOUTHWEST RESEARCH INSTITUTE

Department of Quality Assurance
Calibration Laboratory

CERTIFICATE OF CALIBRATION
11/10/95

Issued to: DARRELL DUNN DIV20 ,
Manufacturer/Model: TROEM/ASTM CLASS 1
Nomenclature: 200G INDIVIDUAL WEIGHT
Serial Number: 63813
Asset Number: 004199
Notes:

ENVIRONMENTAL CONDITIONS

Temperature: 71.8F

Relative Humidity: 39%

CALIBRATION INFORMATION

Procedure Number: MFG
Remarks: CAL BY RICE LAKE, RICE LAKE, WI

Accuracy: MFG
Received IN Tolerance

Calibration was in accordance with requirements of MIL-STD-45662A. Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.

STANDARDS USED FOR CERTIFICATION

Asset #	Serial #	Mfg	Model #	Nomenclature	Cal Date	Int. Cal Due
VENDOR						

Certified by :

Calibration Date: 11/08/95
Interval: 6 months
Next Calibration Due: 05/08/96

Certificate#: 18823

TMAP™ WEIGHT CALIBRATION CERTIFICATE

Certified Traceable To National Institute of Standards And Technology
RICE LAKE WEIGHING SYSTEMS
NVLAP®

Purchase Order Number	78907
Company	SOUTHWEST RESEARCH INSTITUTE
Address	6220 CULEBRA RD BLDG 64
City & State	SAN ANTONIO, TX 78238 5166
Traceable Report Number	168950
Date Received	10-24-95
Date of Test	11-8-95
Temperature	22.1C
RH	39%
mmHG	736.5
Description of Weights	200g SEALED TO CLASS "1", S/N 63813
Density (g/cm³)	ASSUMED 8.0

(Rice Lake Weighing Systems) NIST Certificate Number 822/254143-94
Calibrated By 04 Weighing Design 3-1 REF TECH NOTE 952
Balance Used 672
Last Date Primary Standard Was Calibrated 11/2/94 Due 11/2/04
Last Date Working Standard Was Calibrated 10/17/95 Due 2/17/96
Standards Used "L" 595Q

NOMINAL MASS VALUE	AS FOUND vs. 8.0 g/cm³	AS LEFT vs. 8.0 g/cm³	UNCERTAINTY MILLIGRAMS	TOLERANCE
200g 63813	.37 mg	.37 mg	.03 mg	.5 mg

Copy Only
Original to follow

☐ This report contains data not covered by the NVLAP Accreditation.

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the specific scope of accreditation under Lab Code 5001.
Check with your local state agency for certification of compliance on legal-for-trade items.
Corrections are reported in milligrams unless otherwise stated. Results relate only to the items tested.

Prepared By:

RICE LAKE WEIGHING SYSTEMS
METROLOGICAL PRODUCTS & SERVICES GROUP 9001 REGISTERED
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

Dated 11-8-95
Signed
Title RUSS SCHNACKY
METROLOGIST

PN 26119 6/95

Institute Quality Assurance

May 6, 1996 **Memorandum**

TO: Darrell Dunn, Div20

FROM: Jim Patterson, CAL LAB

SUBJECT: Calibration Interval

The interval for ASTM Class 1 Weight 200G S/N 63813, Device ID#04199 has been corrected to 12 Months with a calibration due date of 8 Nov 96. Corrected certificate of calibration attached.

Attachment

Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

6 May 1996

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: TROEM ASTM CLASS 1
Description: 200G INDIVIDUAL WEIGHT
Serial Number: 63813
Asset Number: 004199

Environmental Conditions

Temperature: 71.8 **Humidity:** 39%

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

Calibration Date: 8 Nov 95 **Calibration Procedure:** MFG

Interval: 12 months **Accuracy:** MFG

Next Calibration Due: 8 Nov 96 **Received:** In Tolerance

Remarks: CAL BY RICE LAKE, RICE LAKE, WI

Certificate # 18823 **Signed:**

LAST PAGE OF REPORT
Total Pages Printed: 1

CORRECTED CERTIFICATE

Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

26 November 1996

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: TROEMNER ASTM CLASS 1
Description: 200G INDIVIDUAL WEIGHT
Serial Number: 63813
Asset Number: 004199

Environmental Conditions

Temperature: 72.0 Deg. F **Humidity:** 45%

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

Calibration Date: 14 Nov 96 **Calibration Procedure:** MFG

Interval: 12 months **Accuracy:** MFG

Next Calibration Due: 14 Nov 97 **Received:** In Tolerance

Remarks: CALIBRATED BY RICE LAKE, RICE LAKE, WI.

Certificate # 23180

Signed: _____

LAST PAGE OF REPORT
Total Pages Printed: 1

Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

23 December 1997

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: TROEMNER 200G
Description: WEIGHT STANDARD
Serial Number: 63813
Asset Number: 004199

Environmental Conditions

Temperature: 71.00 Deg. F **Humidity:** 44 % RH

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

The uncertainty of the calibration was sufficient to determine that the instrument met the manufacturer's specifications.

Calibration Date: 16 Dec 97 **Calibration Procedure:** MFG

Interval: 12 months **Uncertainty:** CLASS "1"

Next Calibration Due: 16 Dec 98 **Received:** In Tolerance

Remarks: CALIBRATED BY RICE LAKE WEIGHING,
RICE LAKE, WI. NIST CERT #: 822/254143-94.

Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
VENDOR					

Signed: _____

Title: _____

LAST PAGE OF REPORT
Total Pages Printed: 1

Certificate # 27651

Rice Lake Weighing Systems Mass Value Certificate

Purchase Order Number	64713
Company	SOUTHWEST RESEARCH INSTITUTE
Address	6220 CULEBRA
	DEC 22 97
City & State	SAN ANTONIO, TX 78238-5166
Date Received	12-12-97
Date of Test	12-16-97
Temperature	21.7°C
RH	44%
mmHg	729.0 RECEIVED
Description of Weights	200g S.S. Weight, Class "1"
Density (g/cm³)	Assumed 8.0 g/cm³
Report Number	335337

Weights listed below have been tested with Rice Lake Weighing Systems Traceable Standards
Rice Lake Weighing Systems NIST Certification Number: 822/254143-94
Tested By 06 Balance Used 619-Q
Weighing Design Modified Substitution
Last Date Primary Standard Was Calibrated 11/02/94 Due 11/02/04
Last Date Working Standard Was Calibrated 09/23/97 Due 01/23/98
Standards Used 594-Q

NOMINAL MASS VALUE	S/N	AS FOUND CONVENTIONAL MASS	AS LEFT CONVENTIONAL MASS	TOLERANCE	UNCERTAINTY MILLIGRAMS
200 g	63813	0.42 mg	0.18 mg	0.50 mg	0.09 mg

Check with your local state agency for certification of compliance on legal-for-trade items.

Prepared By: RICE LAKE WEIGHING SYSTEMS
METROLOGICAL PRODUCTS & SERVICES GROUP
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

PN 38914 5/97

Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
(210) 522-5215
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

16 March 1999

Issued to:	DARRELL DUNN DIV20 B57
Manufacturer/Model:	TROEMNER 200G
Description:	WEIGHT STANDARD
Serial Number:	63813
Asset Number:	004199

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: **Temperature:** 69.9 Degrees Fahrenheit **Humidity:** 35 % RH

Calibration Date: 9 Mar 99 **Calibration Procedure:** MFG

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Calibration Measurements by: RICE LAKE WEIGHING SYSTEMS, RICE LAKE, WI

Remarks: RICE LAKE TRACEABLE REPORT NO.: 450672.

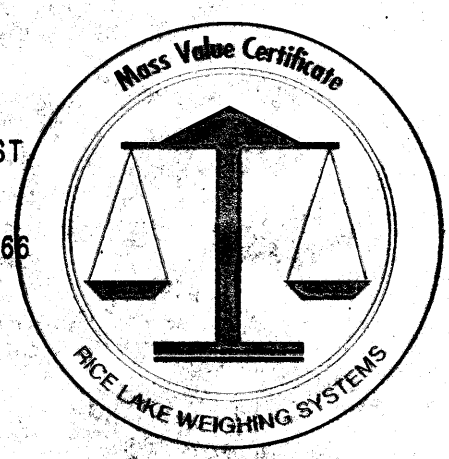
Approved by:

Jim Patterson, Supervisor or Walt Hill, Metrologist

Certificate # 33262

m:\nona2lav.rpt Rev date 10 Mar 99

RICE LAKE WEIGHING SYSTEMS MASS VALUE CERTIFICATE



Purchase Order #: 979251R
Client: SOUTHWEST RESEARCH INST.
Address: 6220 CULEBRA

City & State: SAN ANTONIO, TX 78238-5166
Date Received: 26 FEB 1999
Date Calibrated: 09 MAR 1999
Temperature Range: 21.05 to 21.05 °C
Pressure Range: 733.5 to 733.5 mmHg
Relative Humidity Range: 35 to 35 %
Air Density: 1.1544 to 1.1544 mg/cm³
Traceable Report #: 450672
NIST Certificate #: 822/260017-98
Tested By: 06
Weighing Design(s): Modified Substitution (SOP 8)
Date Primary Standard Was Calibrated: 13 AUG 1998 **Due:** 13 AUG 2002
Description of Weights: S.S. WEIGHT, CLASS 1, S/N 63813

Nominal Value	Id.	Conventional Mass Corr. As Found (mg)	Conventional Mass Corr. As Left (mg)		Unc. K=2 (mg)	Tol. (mg)	Balance Used	Standard Set Used Calibrated/due MM-DD-YY/MM-DD-YY	Assumed Density (g/cm³)
200g	63813	0.284	0.284	*	0.049	0.50	619Q	K594Q 1-21-99/5-21-99	8.00

Check with your local state agency for certification of compliance on legal-for-trade items.

Prepared By:

RICE LAKE WEIGHING SYSTEMS
METROLOGICAL PRODUCTS & SERVICES GROUP
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

* Although this test weight has been tested for the tolerance of the class for which it was submitted, it does not meet all the requirements for that class.

PN 38914 12/97

RICE LAKE WEIGHING SYSTEMS MASS VALUE CERTIFICATE

Contractor: SOUTHWEST RESEARCH INSTITUTE
6220 CULEBRA

SAN ANTONIO, TX 78238 5166

Purchase Order #: X80508R
Client: SOUTHWEST RESEARCH INSTITUTE
Address: 6220 CULEBRA

City & State: SAN ANTONIO, TX 78238 5166
Date Received: 09 MAY 2000
Date Calibrated: 12 MAY 2000
Temperature Range: 21.34 °C
Pressure Range: 720.9 mmHg
Relative Humidity Range: 39 %
Air Density: 1.1325 mg/cm³
Traceable Report #: 568514
NIST Certificate #: 822/260017-98
Tested By: 11
Procedure: Modified Substitution (SOP 8)
Primary Standard Calibration Date: 13 AUG 1998 **Due:** 13 AUG 2002
Description of Weights: S.S. WEIGHT, CLASS "1"

Nominal Value	Id.	Conventional Mass Corr. As Found (mg)	Conventional Mass Corr. As Left (mg)		Unc. K=2 (mg)	Tol. (mg)	Balance Used	Standard Set Used	Calibrated/due MM-DD-YY/MM-DD-YY	Assumed Density (g/cm³)
200 g	63813	0.105	0.105	*	0.040	0.50	619Q	K594Q	02-18-00/08-18-00	8.00

05-239978-

Check with your local state agency for certification of compliance on legal-for-trade items.

Prepared By:

RICE LAKE WEIGHING SYSTEMS
METROLOGICAL PRODUCTS & SERVICES GROUP ISO 9001 REGISTERED

230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

* Although this test weight has been tested for the tolerance of the class for which it was submitted, it does not meet all the requirements for that class.

Dated 12 MAY 2000

Authorized Signatory

PN 38914 12/97

SOUTHWEST RESEARCH INSTITUTE
CALIBRATION LABORATORY
MEMORANDUM

July 29, 2002

To: DARRELL DUNN DIV20 B57

From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Subject: Status of Calibration Supplier

Manufacturer/Model: TROEMNER 200G
Description: WEIGHT, CLASS 1
Serial Number: 63813
Asset Number: 004199
Work Order Number: 444049040
Date Calibrated: July 24, 2002
Supplier: TROEMNER, THOROFARE, N.J.
Remarks: Troemner Cert # 227087-1

(✓) Supplier is on the Approved Suppliers List (ASL) and is accredited.

( ) Supplier is on the Approved Suppliers List (ASL) but is not accredited.

( ) There is no known accredited supplier at this time.

( ) Supplier is not on the Approved Suppliers List (ASL). Please contact Don Dunavant at ext. 2942 if you wish to add the supplier to the ASL.

Please notify the Institute Calibration Laboratory, extension 5215, of any discrepancies with the item or calibration documentation.

Attachment(s) 1

TROEMNER

Henry Troemner LLC

Calibration Certificate

Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 105013

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number 227087-1
Date of Calibration 24-JUL-2002

SECTION 1: NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 2: APPROVED SIGNATORY

Robert Thompson

SECTION 3: PERSON PERFORMING WORK

Gail VanFossen

SECTION 4: CERTIFICATE INFORMATION

Description of Masses: Troemner 200 g S/S E/B Individual Weight

Accuracy Class	: ASTM E617-97* Class 1	Date Received	: 28-JUN-2002
Order Number	: VERBAL	Date of Calibration	: 24-JUL-2002
Construction	: Two Piece	Date of Issue	: 24-JUL-2002
Material	: Stainless Steel	Weight Range	: 200 g

SECTION 5: ENVIRONMENTAL CONDITIONS DURING TEST

Temperature: 21.60°C Pressure: 757.06 mm Hg Relative Humidity: 48%

SECTION 6: PERTINENT INFORMATION

The Weights listed on this calibration report have been compared to reference mass standards that are directly traceable to the National Institute of Standards and Technology under Test No. 822/265036-01.

Reference standards and balances used to perform the calibration are listed in Section 10.

The weights calibrated for this report have been calibrated in accordance with Troemner's calibration process. The calibration performed meets Level I criteria as described in the NIST/NVLAP Technical Guide 150-2.

This calibration also meets specifications as outlined in ISO 9001, ISO/IEC 17025, ANSI/NCSL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable documents.

TROEMNER
Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number 227087-1
Date of Calibration 24-JUL-2002

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 7: TRUE MASS (MASS IN VACUUM) CALIBRATION DATA

Nominal Mass Value	Serial Number	True Mass As Found	True Mass As Left	Density[1] of Weight	Uncertainty (+ or -)
200 g	63813	200.0007106 g	200.0007106 g	7.8500 g/cm^3	0.0772 mg

1 Density is assumed unless otherwise stated

TROEMNER

Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number 227087-1
Date of Calibration 24-JUL-2002

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 8: MASS IN AIR CALIBRATION VALUE VS. REFERENCE DENSITY 8000 kg m $^{-3}$

Nominal Mass Value	Serial Number	---- Conventional Mass Value ---- As Found	As Left	Uncertainty (+ or -)	Tolerance (+ or -)
200 g	63813	200.0001373 g	200.0001373 g	0.0772 mg	0.5000 mg

TROEMNER
Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number 227087-1
Date of Calibration 24-JUL-2002

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 9: MASS IN AIR CALIBRATION DATA VS. REFERENCE DENSITY 8000 kg m $^{-3}$

Nominal Mass Value	Serial Number	-- Conventional Mass Correction -- As Found	As Left	Uncertainty (+ or -)	Tolerance (+ or -)
200 g	63813	0.1373 mg	0.1373 mg	0.0772 mg	0.5000 mg

TROEMNER
Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number 227087-1
Date of Calibration 24-JUL-2002

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 10: CALIBRATION PROCEDURE DATA

Nominal Mass Value	Serial Number	Standard Set No.	Balance Used	Procedure Used	Finish Grade	Type
200 g	63813	S124	AT1005-124	3-1 Modified		

TROEMNER
Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number: 227087-1

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 11: GENERAL INFORMATION

This calibration was performed in Troemner's High Precision Level I Mass Metrology Laboratory at 201 Wolf Drive, Thorofare, New Jersey 08086 unless otherwise noted on page one.

SECTION 12: DEFINITIONS AND TERMS

MASS IN A VACUUM - The mass of a weight as if it were measured in a vacuum. Also known as True Mass.

MASS IN AIR - The conventional value of the result of weighing in air, in accordance to International Recommendation OIML R 33. For a weight taken at 20° C, the conventional mass is the mass of a reference weight of a density of 8000 kg•m^{-3} which it balances in air of a density of 1.2 kg•m^{-3}.

AS FOUND MASS IN A VACUUM - The measured value of the mass(es) as they were received by Troemner. If the customer requires cleaning prior to calibration, the after cleaning value would be reported.

AS LEFT MASS IN A VACUUM - The measured value of the mass(es) after they were adjusted, repaired or replaced when necessary. The As Found Mass in a Vacuum will equal the As Left Mass in a Vacuum if the mass(es) did not require adjustment, repair or replacement.

NOMINAL MASS - The mass value as marked on the weight.

CORRECTION - The difference between the mass value of a weight and its nominal value. A positive correction indicates that the mass value is greater than the nominal value by the amount of the correction.

AS FOUND CONVENTIONAL MASS CORRECTION - The conventional correction of the result, as it was received by Troemner, of weighing in air in accordance to International Recommendation R 33. For a weight taken at 20° C, the conventional mass is the mass of a reference weight of density 8000 kg•m^{-3} which it balances in air density of 1.2 kg•m^{-3}. If the customer requires cleaning prior to calibration, the after cleaning correction would be reported.

AS LEFT CONVENTIONAL MASS CORRECTION - The conventional correction of the result, after adjust-, ment repair, or replacement of weighing in air in accordance to International Recommendation R 33. For a weight taken at 20° C, the conventional mass is the mass of a reference weight of density 8000 kg•m^{-3} which it balances in air density of 1.2 kg•m^{-3}. The As Found will equal the As Left Conventional Mass Correction if the mass(es) did not require adjustment, repair or replacement.

UNCERTAINTY - The error in assignment of the correction due to the measurement process. Uncertainty is calculated in accordance with UKAS document M3003 using a coverage factor of $k = 2$ ($k = 2$ defines an interval having a level of confidence of approximately 95 percent).

(continued on next page)

TROEMNER
Henry Troemner LLC

Calibration Certificate

201 Wolf Drive• P.O. Box 87• Thorofare, NJ 08086-0087• Phone: 856-686-1600• Fax: 856-686-1601• www.troemner.com• e-mail: troemner@troemner.com

Certificate Number: 227087-1

NAME AND ADDRESS OF CUSTOMER

End user
Southwest Research Inst.
6220 Culbera Road
San Antonio TX 78238-5166

Client
Southwest Research Inst.
P.O.Box 28510
Attn: Accounts Payable
San Antonio TX 78228-0510

SECTION 12: DEFINITIONS AND TERMS (continued)

TOLERANCE - Defines the limits in which the correction value must fall to meet the tolerance specification for the given Class.

AS FOUND CONVENTIONAL MASS VALUE - The measured value of the mass(es) as they were received by Troemner, of weighing in air in accordance to International Recommendation R 33. For a weight taken at 20° C, the conventional mass is the mass of a reference weight of density 8000 $kg \cdot m^{-3}$ which it balances in air density of 1.2 $kg \cdot m^{-3}$. If the customer requires cleaning prior to calibration, the after cleaning value would be reported.

AS LEFT CONVENTIONAL MASS VALUE - The measured value of the mass(es) after they were adjusted, repaired or replaced when necessary, of weighing in air in accordance to International Recommendation R 33. For a weight taken at 20° C, the Conventional Mass is the mass of a reference weight of density 8000 $kg \cdot m^{-3}$ which it balances in air density of 1.2 $kg \cdot m^{-3}$. The As Found will equal the As Left Conventional Mass Value if the mass(es) did not require adjustment, repair or replacement.

ASTM E617-97* - Weights meet the tolerance specification for ASTM E617-97

SOUTHWEST RESEARCH INSTITUTE
CALIBRATION LABORATORY
MEMORANDUM

September 19, 2003

To: DARRELL DUNN DIV20 B57

From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Subject: Status of Calibration Supplier

Manufacturer/Model: TROEMNER 200G
Description: WEIGHT, CLASS 1
Serial Number: 63813
Asset Number: 004199
Work Order Number: 444055169
Date Calibrated: September 15, 2003
Supplier: RICE LAKE WEIGHING SYSTEMS, RICE LAKE WI - NVLAP - 71
Remarks: Troemner Cert # 894113

(✓) Supplier is on the Approved Suppliers List (ASL).

( ) Supplier is not on the Approved Suppliers List.

(✓) Calibration is ISO 17025 accredited.

( ) Calibration is not ISO 17025 accredited.

( ) There is no known supplier to meet ISO 17025 accreditation at this time.

Please notify the Institute Calibration Laboratory, extension 5215, of any discrepancies with the item or calibration documentation.

Attachment(s) 1

TMAP Traceable Calibration REPORT

Contractor: **Southwest Research Institute**
PO Box 28510
San Antonio, TX 78228 0510

Purchase Order #: 379672R
Client: **Southwest Research Institute**
Address 6220 Culebra Road

City & San Antonio, TX 78238 5100
Date Received: 11 SEP 2003
Date Calibrated: 15 SEP 2003
Temperature Range: 21.59 °C
Pressure Range: 731.7 mmHg
Relative Humidity Range: 50 %
Air 1.1473 mg/cm³
Traceable Report #: 894113
NIST Certificate #: 822/266926-02
Tested By: 06
Procedure: Mass Dissemination (reference HB 952)

Primary Standard Calibration Date: 05/02/02 **Due:** 05/02/06
Description of Weights: 200g Satin Finish Wt, Class 1, S/N 63813

Nominal Value	Id.	Conventional Mass Corr. As Found (mg)	Conventional Mass Corr. As Left (mg)		Unc.[1] K=2 (mg)	Tol. (mg)	Balance Used	Standard Set Used Calibrated/due MM-DD-YY/MM-DD-YY		Assumed Density (g/cm³)
200 g	63813	0.134	**0.134**	*	0.040	0.50	672Q	L595Q	07-02-03/09-30-03	7.84

[1] Uncertainties apply to As Left values only

☐ This report contains data not covered by the NVLAP Accreditation if the box is checked.

Check with your local state agency for certification of compliance on legal-for-trade items.

Prepared By:

RICE LAKE WEIGHING SYSTEMS 9001 REGISTERED
METROLOGICAL PRODUCTS & SERVICES GROUP
A NVLAP ACCREDITED MASS LAB NVLAP
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

Dated 15 SEP 2003

* Although this test weight has been tested for the tolerance of the class for which it was submitted, it does not meet all the requirements for that class.

Authorized Signatory

PN 64784 8/03

TMAP Traceable Calibration REPORT

Contractor: **Southwest Research Institute**
PO Box 28510
San Antonio, TX 78228 0510

Purchase Order #: 480916ROM
Client: **Southwest Research Institute**
Address: 6220 Culebra Road

City & State: San Antonio, TX 78238 5100
Date Received: 10 SEP 2004
Date Calibrated: 14 SEP 2004
Temperature Range: 21.71 °C
Pressure Range: 727.0 mmHg
Relative Humidity Range: 44 %
Air Density: 1.1401 mg/cm³
Traceable Report #: 1002324
NIST Certificate #: 822/266926-02
Tested By: 06
Procedure: Mass Dissemination (reference HB 952)
Contractor Req Recall Date:
Primary Standard Calibration Date: 05/02/02 **Due:** 05/02/06
Description of Weights: 200g Class 1 Satin Finish Wt, S/N 63813

Nominal Value	Id.	Conventional Mass Corr. As Found (mg)	Conventional Mass Corr. As Left (mg)		Unc.[1] K=2 (mg)	Tol. (mg)	Balance Used	Standard Set Used Calibrated/due MM-DD-YY/MM-DD-YY		Assumed Density (g/cm³)
200 g	**63813**	0.193	**0.193**	*	0.042	0.50	672Q	L595Q	07-06-04/10-06-04	8.00

[1] Uncertainties apply to As Left values only

☐ This report contains data not covered by the NVLAP Accreditation if the box is checked.

Check with your local state agency for certification of compliance on legal-for-trade items.

Prepared By:

RICE LAKE WEIGHING SYSTEMS
METROLOGICAL PRODUCTS & SERVICES GROUP 9001 REGISTERED
A NVLAP ACCREDITED MASS LAB NVLAP
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-6967

* Although this test weight has been tested for the tolerance of the class for which it was submitted, it does not meet all the requirements for that class.

Dated 14 SEP 2004

Authorized Signatory

PN 64784 8/03

SOUTHWEST RESEARCH INSTITUTE
6220 CULEBRA ROAD • POST OFFICE DRAWER 28510 • SAN ANTONIO, TEXAS, 78228-0510 • TEL (210) 522-5215 • FAX (210) 522-369

To: Darrel Dunn, Div 20, Ext 6090

From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Date: Sep. 21, 2004

Subject: Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

When the as-found results are near the specification limit, +/- a margin less than the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. It is the Institute Calibration Laboratory policy that the client is made aware of this situation because the end-user is taking some of the risk that the instrument listed below may not meet the end-user measurement requirements.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

Manufacturer: Troemner **Model:** 200G

Description: Weight Class 1 **Serial Number:** 63813

Asset Number: 4199 **User ID Number:**

Last Calibration: Sep 15, 2003

Date Received for Service: Sep. 02, 2004 Work Order Number: 444060610

Service Requested: Scheduled calibration

Remarks: Out of tol. See Data Sheet

OUT OF TOLERANCE

OUT OF TOLERANCE

SOUTHWEST RESEARCH INSTITUTE
CALIBRATION LABORATORY
MEMORANDUM

September 22, 2004

To: DARRELL DUNN DIV20 B57

From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Subject: Status of Calibration Supplier

Manufacturer/Model: TROEMNER 200G
Description: WEIGHT, CLASS 1
Serial Number: 63813
Asset Number: 004199
Work Order Number: 444060610
Date Calibrated: September 21, 2004
Supplier: RICE LAKE WEIGHING SYSTEMS, RICE LAKE WI - NVLAP - 71
Remarks: 200.193 grams Unc=0.042

(✓) Supplier is on the Approved Suppliers List (ASL).

( ) Supplier is not on the Approved Suppliers List.

(✓) Calibration is ISO 17025 accredited.

( ) Calibration is not ISO 17025 accredited.

( ) There is no known supplier to meet ISO 17025 accreditation at this time.

Please notify the Institute Calibration Laboratory, extension 5215, of any discrepancies with the item or calibration documentation.

Attachment(s) 2

CNWRA *A center of excellence in earth sciences and engineering*
6220 Culebra Road · San Antonio · Texas, U.S.A. 78228-5166

MEMORANDUM

To: SwRI Calibration Lab
From: Darrell S. Dunn
Date: March 25, 2005
Subject: Weight

The following weight was found to be out of tolerance during a normally scheduled calibration and should be removed from the calibration recall list. A copy of this memorandum will be placed in the Division 20 calibration records.

Troemner	200g	Serial Number: 63813	Asset Number: 004199

Please contact me at extension 6090 if you have any questions.