



CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES QUALITY ASSURANCE SURVEILLANCE REPORT

PROJECT NO.: 20-5704-041

REPORT NO.: 93-11

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SURVEILLANCE SCOPE: QA surveillance to observe the process used by a SwRI Cost Center 30 Calibration Laboratory staff member. The instrument and the calibration activity was in the CNWRA Corrosion Laboratory, Building 57.

REFERENCE DOCUMENTS: CQAM Section 12, 12.6, Calibration Procedures and QAP-004, Surveillance Control, Section 3.3 and 3.4.

STARTING DATE: 7/16/93

ENDING DATE: 7/16/93

QA REPRESENTATIVE: B. Mabrito

PERSONS CONDUCTING TEST/EXAM/ACTIVITY: Jerry A. White (SwRI Cost Center 30).

SATISFACTORY FINDINGS: The calibration of the Sartorius Electronic Balance, Model RC 210P, Serial Number 10704379 in the Corrosion Lab by J. White of the SwRI Cal Lab (CC30) was observed. The electronic balance is on a 6-month calibration cycle and the cal due date is 7/19/93. J. White utilized the Sartorius Operating Manual as his procedure to perform the calibration. The technician checked three ranges of balance usage, using 100 and 200 grams for range one; 10, 50, and 100 grams for range two; and 1, 10, and 100 grams for range three. An SwRI Balance Calibration Verification Form was used to record the results (a copy of the 1/19/93 calibration for the same instrument is attached). The technician used white cotton gloves for handling of the weights and the weights (in the 1 milligram to 500 milligram range, and in the 1 gram to 5 kilogram range) had the following NIST number on them: 732/246308. The standard weights had been calibrated by Rice Lake Weighing Systems on 6/30/93. The electronic balance and the weights were temperature stabilized before the calibration check began. The calibration check showed the balance to be slightly out of calibration in one range. The technician discussed the condition with N. Sridhar before he departed the CNWRA Lab and will be working with the Sartorius Electronic Balance company determine how to adjust the instrument to ensure it is acceptable and accurate for use.

UNSATISFACTORY FINDINGS: There were no unsatisfactory findings concerning the calibration check activity detected by this surveillance, however an out of tolerance notice was issued on the instrument by the SwRI Calibration Laboratory. The Sartorius Electronic Balance was adjusted to operate within its manufacturer stated specifications and a CNWRA nonconformance report will be issued by N. Sridhar to address the possibility of incorrect data resulting from the instrument being out of calibration in one part of one range.

NONCONFORMANCE REPORT NO.: At the time of this surveillance report, the NCR has not been generated so no number is available.

ATTACHMENTS: SwRI Out of Tolerance Notice, SwRI Certificate of Calibration, SwRI Standard numbers utilized in the calibration check, and the earlier SwRI Balance Calibration Verification Form.

RECOMMENDATIONS/ACTIONS: Dr. Sridhar to complete and submit the CNWRA NCR.

APPROVED: 
CENTER DIRECTOR OF QUALITY ASSURANCE

DATE: 7/26/93

DISTRIBUTION:

ORIGINAL - CENTER QA DIRECTOR QA Records
ORIGINATOR B. Mabrito
PRINCIPAL ENGINEER N. Sridhar
ELEMENT MANAGER P. Nair
B. Sagar
A. Chowdhury, L. McKague, R. Baca, G. Cragnolino

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

OUT OF TOLERANCE NOTICE

Date: 07/21/93

The following instrument was out of tolerance when submitted for calibration.

Issued to: DIV20 B57 NARASI SRIDHAR

Device No: 2029

Manufacturer: SARTORIUS

Model: RC210P

Nomenclature: ELECTRONIC BALANCE

Serial Number: 10704379

SwRI No: NONE

Remarks

Accuracy: MFGRS SPEC

Calibration Interval: 6 months

DEVIATION

Entry Date: 07/21/93 Cal record #00011808 Last Valid Calibration: 01/19/93
Remarks

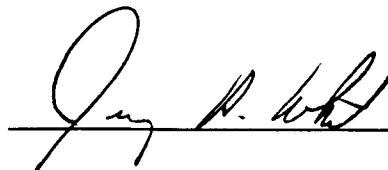
The Sartorius RC210P, Electronic Scale was found out of tolerance. The following results were recorded.

Standard Reading:	Unit Under Test:	Reading:	Error:
200 grams	199.99930 grams	.70 m grams	-.41 mg = -.29 mg
150 grams	149.99948 grams	.52 m grams	-.41 mg = -.11 mg
50 grams	49.99967 grams	.32 m grams	
10 grams	9.99991 grams	.09 m grams	

The total uncertainty of the 200 gram standard is 0.41 m grams.
Scale was adjusted to within manufacturer's specifications.

cc: Manager, QA

Signed



S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

CERTIFICATE OF CALIBRATION

Issued to: DIV20 B57 NARASI SRIDHAR

Device No: 2029

Manufacturer: SARTORIUS

Model: RC210P

Nomenclature: ELECTRONIC BALANCE

Serial Number: 10704379

SwRI No: NONE

Cal interval 6 Mo.

Remarks

Accuracy: MFGRS SPEC

Procedure: SWRI

ENVIRONMENT

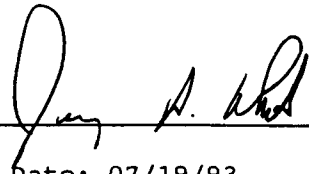
Temperature: 0 Humidity: 0 Location: SWRI DIV20 BLDG. 57

CONCLUSION

Tolerance/Remarks: Received out of tolerance, adjusted to specifications

Calibration was in accord 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.

Signed



Calibration Date: 07/19/93

Cal interval: 6 Months

Record Number: 00011808

Next Calibration Due: 01/19/94

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

Device Serial No: 10704379

Calibration Date: 07/19/93

STANDARDS

Standard No: 1704	Manufacturer: RICE LAKE	Model: 1 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C859	Cal.Due: 06/30/94	Cal.Rec.No: 00011756
Standard No: 1708	Manufacturer: RICE LAKE	Model: 10 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C863	Cal.Due: 06/30/94	Cal.Rec.No: 00011760
Standard No: 1711	Manufacturer: RICE LAKE	Model: 50 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C866	Cal.Due: 06/30/94	Cal.Rec.No: 00011763
Standard No: 1712	Manufacturer: RICE LAKE	Model: 100 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C867	Cal.Due: 06/30/94	Cal.Rec.No: 00011764
Standard No: 1713	Manufacturer: RICE LAKE	Model: 200 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C868	Cal.Due: 06/30/94	Cal.Rec.No: 00011765
Standard No: 1714	Manufacturer: RICE LAKE	Model: 200 GRAM
Nomenclature: WEIGHT STANDARD		
Serial No: C869	Cal.Due: 06/30/94	Cal.Rec.No: 00011766
Standard No: 1720	Manufacturer: RICE LAKE	Model: 1 - 500 MG
Nomenclature: WEIGHT STANDARDS		
Serial No: C858	Cal.Due: 06/30/94	Cal.Rec.No: 00011772

BALANCE CALIBRATION VERIFICATION FORM

DATE: 19 JUL 93 MFR: SMARTOR 115 MODEL: RC 210P

SER. NO. 10709379 RANGE: 2105

TEMPERATURE: HUMIDITY: ✓

CALIBRATED BY: JERRY M. W.H.F.

BALANCE TOLERANCES

LINE. TOL.: 0.15mg REP. TOL.: .02/.04/.05

BALANCE CAL #: 11808

CALIBRATION DATES

LAST: 15 JAN 93 NEXT: 15 JAN 94

RANGE VERIFICATION		
RANGE #1	RANGE #2	RANGE #3

DATA PTS.	CALIBRATION POINTS			CALIBRATION POINTS			CALIBRATION POINTS		
	1	2	3	1	2	3	1	2	3
2009	1505	1505	1505	1005	50.9	105	1000	1000	1000
RUN #1	99.55980	149.59950	99.59995	45.55995	10.00001	10.00001	1.00000	1.00000	10.00
RUN #2	55.55980	145.59950	55.55995	45.55995	10.00001	10.00001	1.00000	1.00000	10.05
RUN #3	59.55965	145.59970	59.59965	45.59965	10.00001	10.00001	1.00000	1.00000	10.00
MEAN	59.55981	145.59970	59.55995	45.55995	10.00001	10.00001	1.00000	1.00000	10.00
STD. DEV.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

SHIFT VERIFICATION

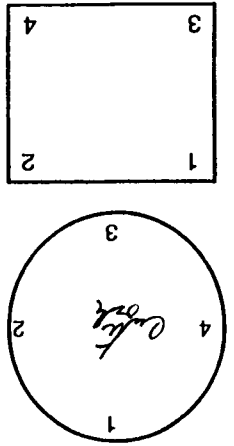
SELF CALIBRATION Y/N INTERNAL: EXTERNAL: 2009

PAN POSITION

WEIGHT VALUE 1 2 3 4

SIGNATURE: *[Signature]*

COMMENTS: *Adjusted normally & calibrated below with external weights.*



POSITION GUIDE