

GEOSCIENCES AND ENGINEERING DIVISION NONCONFORMANCE REPORT

Project No. 20.00751.006

NCR No. 2005-35

PART 1: DESCRIPTION OF NONCONFORMANCE

PH/ION meter (Model: Orion 720A, Serial Number: 005885, Asset Number: 001869), Input 1 was found to be out of tolerance per SwRI Cal. Lab on 0.0 and 1000.0 mV ranges during a normally scheduled calibration. The unit was adjusted and returned within tolerance.

Initiated by: Don Bannon Date: 25Oct05

Action Required by: Xihua He Response Due Date: 8Nov05

PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

Disposition: No measurements are affected by this out of tolerance condition.

Basis of Disposition: Errors for 0.0 and 1000.0 mV ranges are -0.7 and -1.1 mV, respectively. This translates to pH errors of -0.01 and -0.02 pH units. pH measurements have requirements of +/- 0.1 pH units. pH measurements have typical requirements of +/- 0.1 pH units and the error of -0.02 pH units is not significant for pH measurements. In addition, this pH meter was kept in Bldg. 90 and was never used for Div. 20 projects.

Action to Correct Nonconformance: The pH meter was adjusted and recalibrated. This pH meter will continue to be included on the calibration recall list.

Target date for completion: 8Nov05

Proposed by: Xihua He

Date: 10/27/05

PART 3: APPROVAL

Manager: [Signature]

Date: 10/27/05

Director of QA: [Signature]

Date: 10/27/05

Comments/Instructions:

PART 4: CLOSE OUT

Comments: No action necessary

Verified by: [Signature]

Date: 10/27/05

Distribution:

Original-CENTER QA Records

ORIGINATOR D. Bannon

PRINCIPAL INVESTIGATOR X. He

MANAGER V. J. Aid

ASSISTANT DIRECTOR S. MOHANES

SOUTHWEST RESEARCH INSTITUTE®

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

To: DON BANNON, DIV20, B57

From: Walt Hill, Group Leader
Institute Calibration Laboratory

Date: OCT 17 2005

Subject: Out-of-tolerance Notice

The as-found condition of the equipment listed below may have caused erroneous measurements affecting safety or quality of services your organization provides customers. The attached measurement report is provided for your evaluation to determine the impact and if further action is required.

When the as-found results are near the test point limits, +/- the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. Institute Calibration Laboratory policy is to notify the customer because there is a risk the instrument may not meet measurement requirements.

Your evaluation should be conducted in accordance with your organization's quality policy and procedural requirements. If you have any question or need additional assistance, please contact the Institute Calibration Laboratory at 522-5215.

Manufacturer: ORION

Model: 720A

Description: PH/ION METER

Serial Number: 005885

Asset Number: 001869

User ID Number:

Last Calibration: JUL 13, 2004

Date Received for Service: SEPT. 28, 2005 **Work Order Number:** 303066101

Service Requested: Scheduled calibration

Remarks: UNIT FAILS mVolt test

OUT OF TOLERANCE



SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510
Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834



Certificate of Calibration

0972-01

Submitted By: DIV20
Address: B57
Contact: DON BANNON
Manufacturer Model: ORION 720A
Description: PH/ION METER
Serial No: 005885
Asset No: 001869
Procedure: CL-79, JUN/99

Work Order: 303066101
Date Issued: Oct 17, 2005
Calibration Date: Oct 17, 2005
***Calibration Due:** Oct 17, 2006
Calibration Location: Bldg. 64
Environment: Temp. 72.0°F Hum. 40 %RH
****Data Type:** AS-LEFT

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 1999, ANSI/NCCL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. **Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The client has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

Remarks: mVolts cal'd only

Standards Used

Asset No.	Serial No.	Manufacturer	Model	Description	Cal Due
006413	7085202	FLUKE	5520A/SC1100	MULTI-PRODUCT CALIBRATOR	Mar 08, 06

Reviewed by: blt () jrg () pwc () wgh ()
Metrology Technician

m:\a2la1.rpt Rev date August 15, 2005

Measurements by: Paul Depmord
Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303066101	Mfr.	Orion	Technician	PRD
Asset No.	001869	Model	720A	Cal Date.	17-Oct-05
Serial No.	005885	Type.	pH Meter		

Remarks:

LIMITED CAL: Millivolts Only

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found
mVolts	mVolts	mVolts	mVolts	mVolts	mVolts	Result
Input 1	0.0	-0.7	-0.7	0.5	0.12	Fail
	1000.0	998.9	-1.1	1.0	0.12	Fail
	-1000.0	-1000.4	-0.4	1.0	0.12	Pass
END OF REPORT						
mVolts	mVolts	mVolts	mVolts	mVolts	mVolts	
Input 2	0.0	-0.3	-0.3	0.5	0.12	Pass
	1000.0	999.4	-0.6	1.0	0.12	Pass
	-1000.0	-1000.1	-0.1	1.0	0.12	Pass
END OF REPORT						

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303066101	Mfr.	Orion	Technician	PRD
Asset No.	001869	Model	720A	Cal Date.	17-Oct-05
Serial No.	005885	Type.	pH Meter		

Remarks:

LIMITED CAL: Millivolts Only

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Left
mVolts	mVolts	mVolts	mVolts	mVolts	mVolts	Result
Input 1	0.0	0.0	0.0	0.5	0.12	Pass
	1000.0	999.8	-0.2	1.0	0.12	Pass
	-1000.0	-999.7	0.3	1.0	0.12	Pass
END OF REPORT						
mVolts	mVolts	mVolts	mVolts	mVolts	mVolts	
Input 2	0.0	-0.3	-0.3	0.5	0.12	Pass
	1000.0	999.4	-0.6	1.0	0.12	Pass
	-1000.0	-1000.1	-0.1	1.0	0.12	Pass
END OF REPORT						