



Quametec Corporation Proficiency Testing Services

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Certificate Number 2060.01

Proficiency Test Final Report

Proficiency Test Name: Pressure #1

Organization Name: Century Labs II Corporation
2802-G Congressional Parkway
Fort Wayne, IN 46808

Laboratory Code: CR

Contact Name: Robin Bork

Phone Number: (260) 471-1673

Report Number: 322

Date of Participation: 04/17/2006

Date of Report: 5/22/2006

This proficiency test was designed and conducted by Quametec Proficiency Testing Services (QPTS) as a modified petal¹ type scheme, where a reference value and measurement uncertainty for the artifact was established by the Mensor Corporation, San Marcos TX, under the scope of their A2LA² accredited calibration service for calibration of pressure gages. The artifact was sent from QPTS to the participant, and the artifact was immediately returned to QPTS upon completion of measurement by the participant. Upon completion of participant measurements, the artifact was returned to Mensor Corporation for closing measurements. The deviations measured by the Mensor Corporation in before/after measurements are considered to be a measurement of stability of the artifact, and the uncertainty due to stability is included in the uncertainty of the reference value³.

The artifact used in the proficiency test was a Mensor Corporation model 2101 digital pressure gage, serial number 530028.

The results of the participant's measurements are summarized below. The acceptable range of results are values that result in an E_n ¹ number value of -1 to $+1$. Graphs are included to communicate the relation of the participant uncertainty to the expanded uncertainty of the proficiency test.

¹Definitions of Proficiency Testing Terminology are available at www.quametec-pt.com

²Mensor Corporation A2LA accredited certificate number 2066.01

³Details of development of proficiency test and technical protocol are controlled as quality records. Contact QPTS for release of additional design information.

Proficiency Test Data

250 PSIG increasing pressure

Reference Value of Artifact	250.0275 PSIG
Participant Measured Value	250.1 PSIG
Deviation between Reference and Participant	0.0725 PSI
Proficiency Test Expanded Uncertainty	0.013 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.04 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

500 PSIG increasing pressure

Reference Value of Artifact	500.0585 PSIG
Participant Measured Value	500.5 PSIG
Deviation between Reference and Participant	0.442 PSI
Proficiency Test Expanded Uncertainty	0.013 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.22 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

750 PSIG increasing pressure

Reference Value of Artifact	750.101 PSIG
Participant Measured Value	750.8 PSIG
Deviation between Reference and Participant	0.699 PSI
Proficiency Test Expanded Uncertainty	0.021 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.35 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

1000 PSIG increasing pressure

Reference Value of Artifact	1000.112 PSIG
Participant Measured Value	1001.0 PSIG
Deviation between Reference and Participant	0.888 PSI
Proficiency Test Expanded Uncertainty	0.023 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.45 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

750 PSIG decreasing pressure

Reference Value of Artifact	750.091 PSIG
Participant Measured Value	750.8 PSIG
Deviation between Reference and Participant	0.709 PSI
Proficiency Test Expanded Uncertainty	0.016 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.36 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

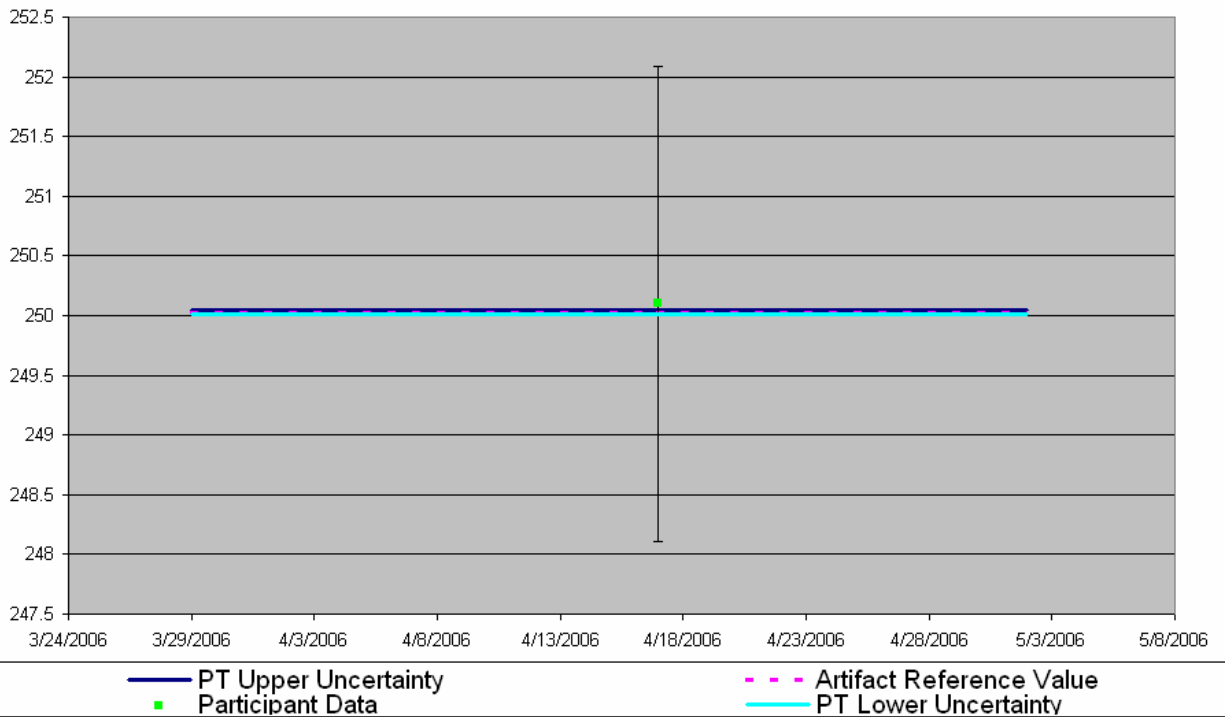
500 PSIG decreasing pressure

Reference Value of Artifact	500.246 PSIG
Participant Measured Value	500.5 PSIG
Deviation between Reference and Participant	0.254 PSI
Proficiency Test Expanded Uncertainty	0.221 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.13 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

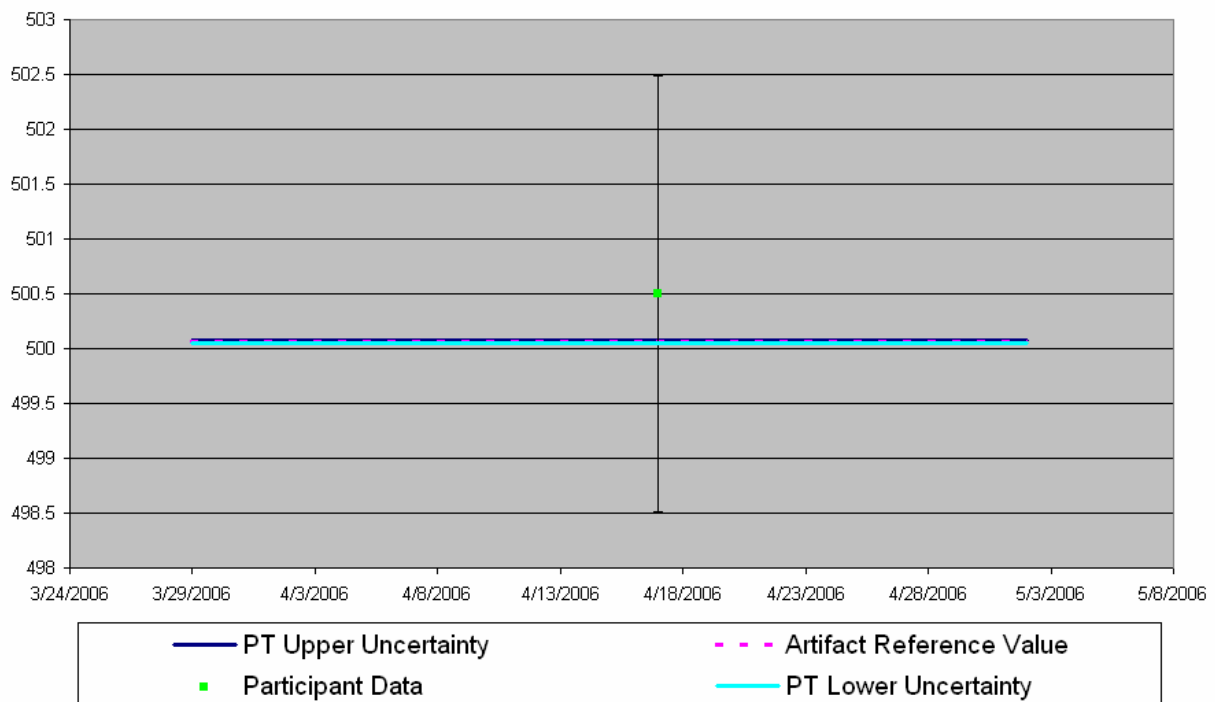
250 PSIG decreasing pressure

Reference Value of Artifact	250.0225 PSIG
Participant Measured Value	250.2 PSIG
Deviation between Reference and Participant	0.178 PSI
Proficiency Test Expanded Uncertainty	0.008 PSI
Uncertainty Reported by Participant	1.9904 PSI
E_n	0.09 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory

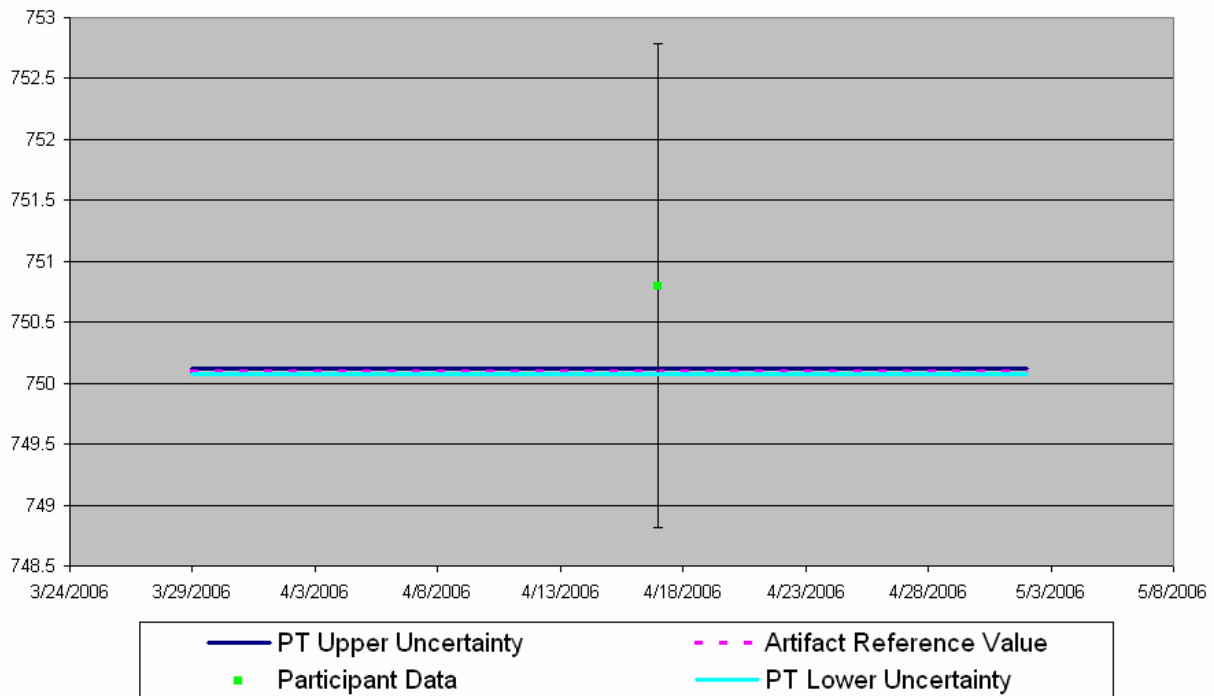
Participant Data 250 psig, increasing pressure



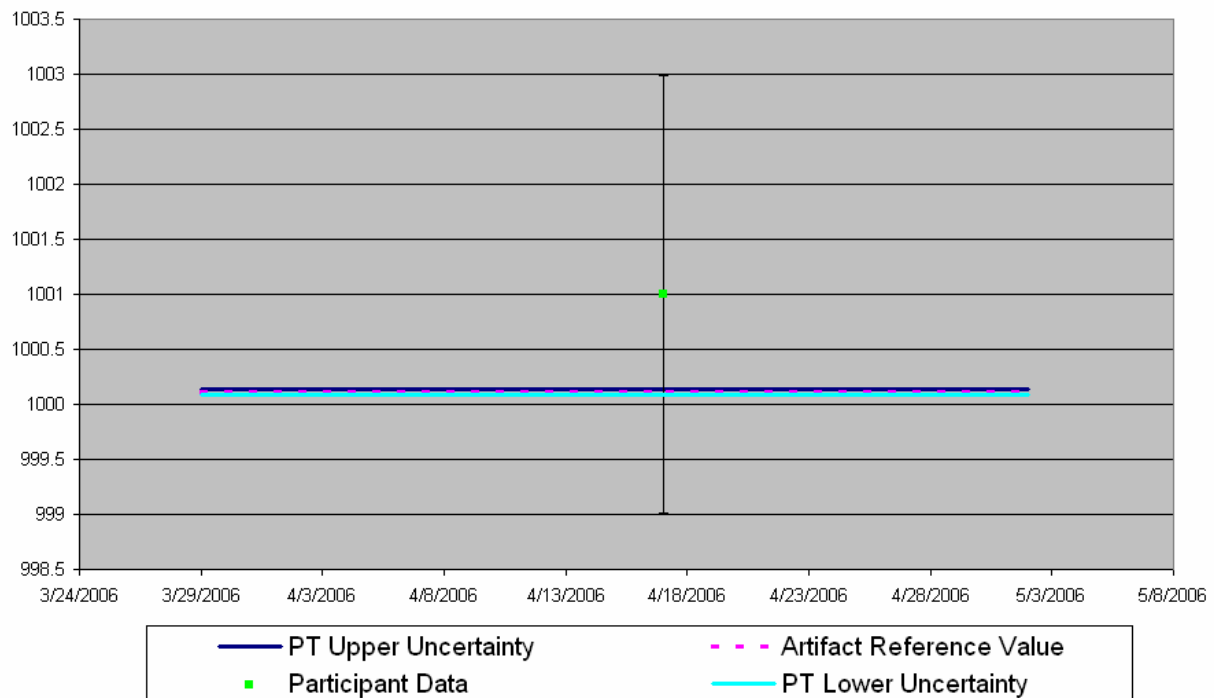
Participant Data 500 psig, increasing pressure



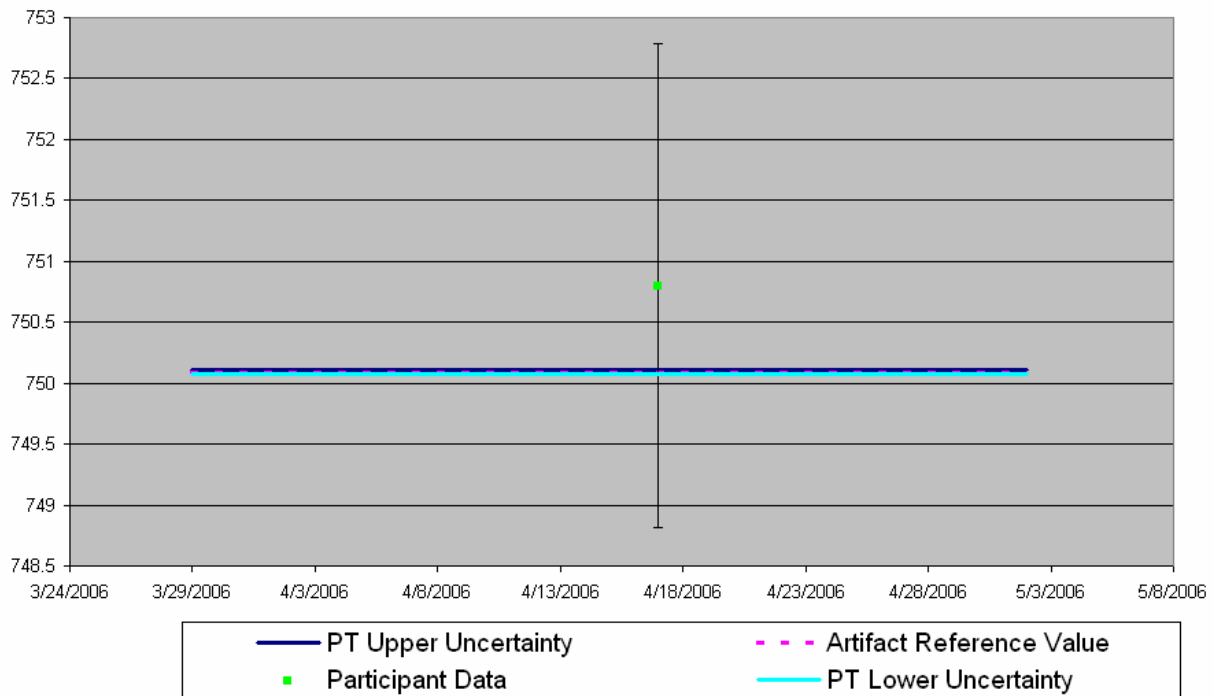
Participant Data 750 psig, increasing pressure



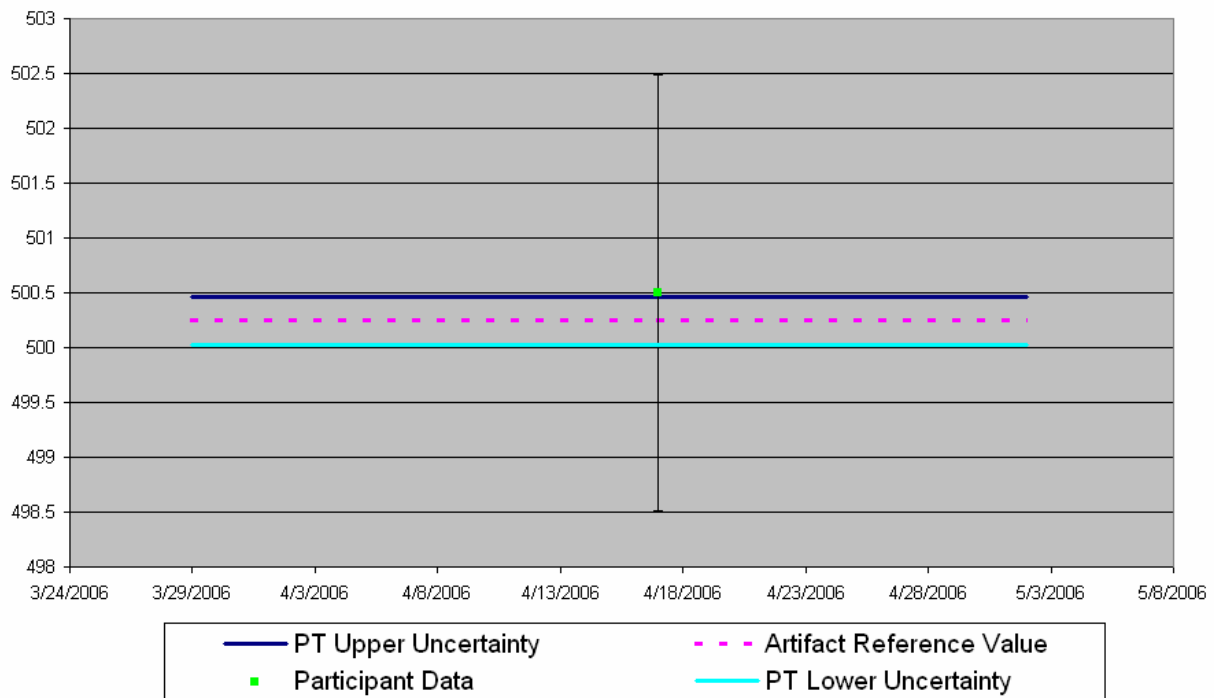
Participant Data 1000 psig, increasing pressure



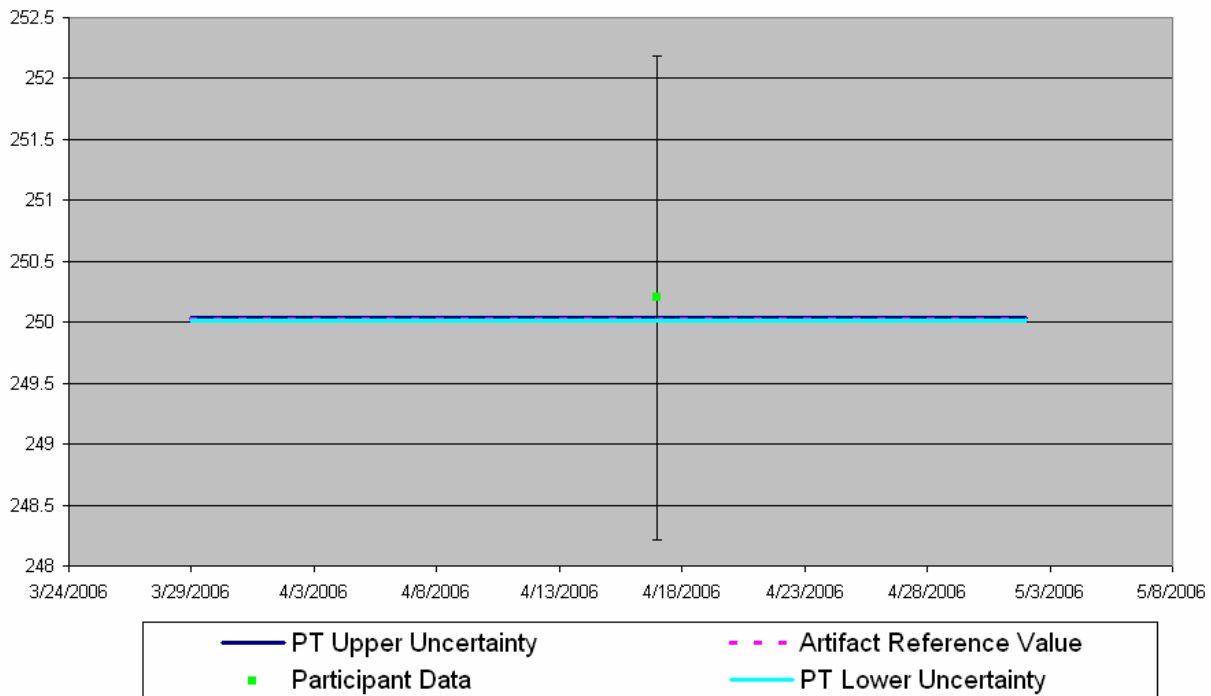
Participant Data 750 psig, decreasing pressure



Participant Data 500 psig, decreasing pressure



Participant Data
250 psig, decreasing pressure



Comments: Please note that none of these comments require a response to the proficiency test provider, but are intended to aid the participant in improving their measurement processes. It is understood that some of these suggestions may have already been considered by the laboratory.

The participant obtained satisfactory results for all test points. In general, all looks to be in order associated with this proficiency test. The participant agreed well with the artifact and the estimate of uncertainty seems somewhat conservative but appropriate for the equipment used.

My congratulations on a job well done!

Jeff C. Gust
Technical Manager