

Calibration Date: 10/14/2020	Certificate of Calibration of Volume Transfer	Certificate Number: 2020-109-1
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Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	50 gal	Brownie	Bottom Drain Prover

Submitted By: Nebraska Standards Laboratory
3721 West Cuming St.
Lincoln, NE 68524

POC: Joel P. Lavicky
402-471-2087
joel.lavicky@nebraska.gov

Test Results

Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
50 gal	1892483	SS	0.0000265	49.9987 gal	49.9987 gal	0.0065 gal	2.02

The data in this report only applies to those items specifically listed on this report.

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

Conversion Factors:

1 gal = 231 in³
1 gal = 3.785 412 E-3 m³

Traceability Statement:

The artifact(s) described in this report have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The calibration number for this report is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this report.

Uncertainty Statement:

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage factor (*k*), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken.

Pertinent Information:

The artifact(s) listed above have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and uncertainty exceed 95% of the maximum permissible error. All of the tolerances and specifications were evaluated according to NIST HB 105-3 (2010).

Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used:

50 gal NE 19571

Treatment of Item(s) before Calibration:

Tested as Found

Procedure Used:

NISTIR 7383, SOP 19 (2019)

Environmental conditions at time of calibration:

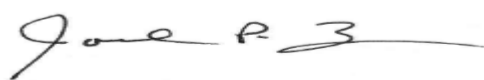
Temp °C	19.7	Humidity %	47.1
Pressure mmHg	723.14		

Water temperature at time of calibration:

65.44 °F

Date Submitted: 10/14/2020

E-signature is copy only



Joel P. Lavicky, Metrologist

10/30/2020

Issue Date:

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Calibration Date: 10/14/2020	Certificate of Calibration of Volume Transfer	Certificate Number: 2020-109-2
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Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	5 gal	SMI	Test Measure 2" Neck

Submitted By: Nebraska Standards Laboratory
3721 West Cuming St.
Lincoln, NE 68524

POC: Joel P. Lavicky
402-471-2087
joel.lavicky@nebraska.gov

Test Results

Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
5 gal	87276	SS	0.0000265	4.99773 gal	4.99773 gal	0.00100 gal	2.06

The data in this report only applies to those items specifically listed on this report.

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

Conversion Factors:

1 gal = 231 in³
1 gal = 3.785 412 E-3 m³

Traceability Statement:

The artifact(s) described in this report have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The calibration number for this report is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this report.

Uncertainty Statement:

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage factor (*k*), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken.

Pertinent Information:

The artifact(s) listed above have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and uncertainty exceed 95% of the maximum permissible error. All of the tolerances and specifications were evaluated according to NIST HB 105-3 (2010).

Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used:

5 gal SP NE 1586

Treatment of Item(s) before Calibration:

Tested as Found

Procedure Used:

NISTIR 7383, SOP 19 (2019)

Environmental conditions at time of calibration:

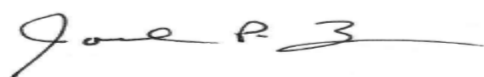
Temp °C	20.3	Humidity %	40.3
Pressure mmHg	723.14		

Water temperature at time of calibration:

68.56 °F

Date Submitted: 10/14/2020

E-signature is copy only



Joel P. Lavicky, Metrologist

10/30/2020

Issue Date:

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