

Calibration Date: 11/1/2021

**Certificate of Calibration
of Volume Transfer**

Certificate Number: 2021-153-1

Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	50 gal	Seraphin	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 (1/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
50 gal	21-65370-11	304 SS	0.0000288	50.0024 gal	50.0024 gal	0.0061 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-03 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:

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Condition of Item(s) Submitted for Calibration:

New

Laboratory Reference Standard Used:

50 gal NE 19571

Treatment of Item(s) before Calibration:

Tested as Found

Procedure Used:

NISTIR 7383, SOP 19 (2019)

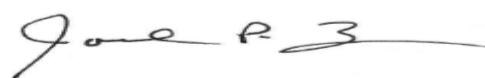
Environmental conditions at time of calibration:

Temp °C	19.5	Humidity %	49.8
Pressure mmHg	741.43		

Water temperature at time of calibration:

64.56 °F

Date Submitted: 11/1/2021



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11/12/2021

Joel P. Lavicky, Metrologist

Issue Date:

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Calibration Date: 11/10/2021

**Certificate of Calibration
of Volume Transfer**

Certificate Number: 2021-153-2

Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	5 gal	Seraphin	"Special" J 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 (1/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
5 gal	04-20943-2	SS	0.0000265	4.99635 gal	5.00047 gal	0.00095 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-03 m³

Traceability Statement:

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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:

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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)

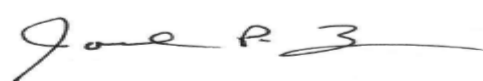
Environmental conditions at time of calibration:

Temp °C	19.3	Humidity %	51.3
Pressure mmHg	738.63		

Water temperature at time of calibration:

68.79 °F

Date Submitted: 11/2/2021



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11/12/2021

Joel P. Lavicky, Metrologist

Issue Date:

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Calibration Date: 11/10/2021

**Certificate of Calibration
of Volume Transfer**

Certificate Number: 2021-153-3

Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	5 gal	Seraphin	"Special" J 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 (1/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
5 gal	21-65370-11	304 SS	0.0000288	4.99733 gal	4.99951 gal	0.00074 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-03 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:

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Condition of Item(s) Submitted for Calibration:

New

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)

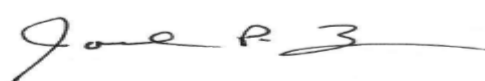
Environmental conditions at time of calibration:

Temp °C	19.3	Humidity %	51.3
Pressure mmHg	738.63		

Water temperature at time of calibration:

69.06 °F

Date Submitted: 11/2/2021



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11/12/2021

Joel P. Lavicky, Metrologist

Issue Date:

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Calibration Date: 12/15/2021	Certificate of Calibration of Volume Transfer	Certificate Number: 2021-176-1
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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 (1/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	(k)
50 gal	1892483	SS	0.0000265	49.9976 gal	49.9976 gal	0.0069 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.

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Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used:

50 gal NE 19571

Treatment of Item(s) before Calibration:

Cleaned before Calibration

Procedure Used:

NISTIR 7383, SOP 19 (2019)

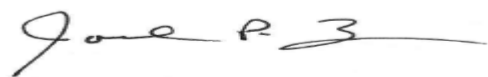
Environmental conditions at time of calibration:

Temp °C	19.4	Humidity %	51.8
Pressure mmHg	714.50		

Water temperature at time of calibration:

57.20 °F

Date Submitted: 12/15/2021



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Joel P. Lavicky, Metrologist

12/23/2021

Issue Date:

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Calibration Date: 12/23/2021	Certificate of Calibration of Volume Transfer	Certificate Number: 2021-176-2
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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	4.99831 gal	4.99831 gal	0.00100 gal	2.04

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.

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Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used:

5 gal SP NE 1586

Treatment of Item(s) before Calibration:

Cleaned before Calibration

Procedure Used:

NISTIR 7383, SOP 19 (2019)

Environmental conditions at time of calibration:

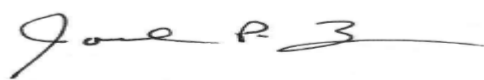
Temp °C	19.4	Humidity %	51.8
Pressure mmHg	714.50		

Water temperature at time of calibration:

66.18 °F

Date Submitted: 12/15/2021

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Joel P. Lavicky, Metrologist

12/23/2021

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Calibration Date: 12/23/2021	Certificate of Calibration of Volume Transfer	Certificate Number: 2021-176-3
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Items Submitted:

Quantity	Nominal Volume	Manufacturer	Type
1	5 gal	SMI	"Special" J 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)
5 gal	04-20943-1	SS	0.0000265	4.99963 gal	4.99963 gal	0.00100 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:

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Condition of Item(s) Submitted for Calibration:

Good

Laboratory Reference Standard Used:

5 gal SP NE 1586

Treatment of Item(s) before Calibration:

Cleaned before Calibration

Procedure Used:

NISTIR 7383, SOP 19 (2019)

Environmental conditions at time of calibration:

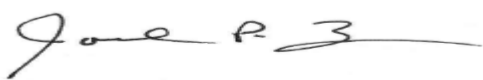
Temp °C	19.4	Humidity %	51.8
Pressure mmHg	714.50		

Water temperature at time of calibration:

67.21 °F

Date Submitted: 12/15/2021

E-signature is copy only



Joel P. Lavicky, Metrologist

12/23/2021

Issue Date:

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