DEPARTMENT OF COMMERCE
WEIGHTS & MEASURES DIVISION

14305 Southcross Drive #15
Burnsville, MN 55306-700
mn.gov/commerce
651.539.1555 FAX 952.435.404
An equal opportunity employe

Receipt Date:	June 10, 2019	Report No.:	341200
Cal. Date:	June 10, 2019	Serial No.:	00-50785
Report Date:	June 10, 2019	Barcode:	202324

Calibration Certificate

JL INSPECTIONS, LLC
1004 5TH AVE NW
MANDAN, ND 58554

Contact:	JOSH LEVI
Phone:	701-391-2355
PO Number:	NONE
Procedure:	NIST SOP 19
Technician ID:	11

Item(s) Submitted:	5 Gallon Measure
Manufacturer:	Seraphin
Material:	Mild Steel
Type:	Measure
Condition:	Good
Temperature:	21.9 °C
Pressure:	742.1 mmHg
Relative Humidity:	50.8 %
Standard H_2O Temp.:	22.5 °C
Artifact H_2O Temp.:	22.4 °C

Nominal Volume (gal)		Calibrated Volume (gal)	Error (in^3)	k	U (in^3)	CCE ($/^oF$)
5	As Found	5.0006	0.14	2.04	0.33	0.0000186
	As Left	5.0006	0.14			

Neck Calibration: No neck calibration was performed at this time.

This measure has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds followed by a drain time of 10 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.
Conversion to SI unit: 1 gallon = 231 in^3 = 0.00378541 m^3.

Pete Whebbe
Metrologist

Reviewed by:
Anna Pierce
Metrologist

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Receipt Date:	June 10, 2019	Report No.:	341199
Cal. Date:	June 10, 2019	Serial No.:	2999731-04
Report Date:	June 10, 2019	Barcode:	202325

Calibration Certificate

JL INSPECTIONS, LLC
1004 5TH AVE NW
MANDAN, ND 58554
Contact: JOSH LEVI
Phone: 701-391-2355
PO Number: NONE
Procedure: NIST SOP 19
Technician ID: 20

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan
Material: Stainless Steel
Type: No Bottom Zero
Condition: Good**
Temperature: 21.5 °C
Pressure: 742.2 mmHg
Relative Humidity: 48.3 %
Standard H_2O Temp.: 13.5 °C
Artifact H_2O Temp.: 13.7 °C

Nominal Volume (gal)		Calibrated Volume (gal)	Error (in^3)	k	U (in^3)	CCE (/°F)
100	As Found	99.995	-1.3	2.01	2.4	0.0000265
	As Left	99.995	-1.3			

**** The prover shall be level to the neck. Replace levels by next calibration per NIST Handbook 105-3 4.5.23.1**
Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

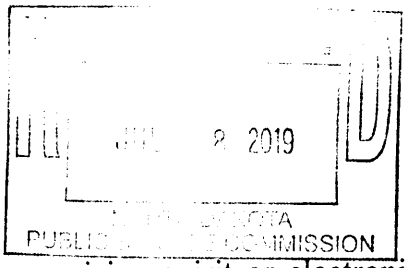
The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.
Conversion to SI unit: 1 gallon = 231 in^3 = 0.00378541 m^3.

Anna Pierce
Metrologist

Reviewed by:
Pete Whebbe
Metrologist



4.5.22 **Volumetric Field Standard Leveling**

4.5.22.1 Establishment of level condition

A volumetric field standard shall be leveled by placing a precision spirit or electronic dig level vertically against the neck on at least two locations, 90 degrees apart around circumference of the neck and adjusting the orientation of the standard until the neck is as cl to vertical (plumb or perpendicular to the horizontal plane) as possible.

This method of determining the level condition (*plumbing the neck*) shall be used for replacement and adjustment of levels on all mounted volumetric field standards.

NOTE: Due to the variability in the mounting of the glass level vials, spirit levels are not alw accurate. A simple test for a vertical (plumb) level is to place the level on a nearly vert surface, note the reading of the bubble in relation to the lines on the vial and then flip the le around 180 degrees (left to right) on the same surface. The position of the bubble in relatio the lines on the vial (the reading) should be the same. The same test can be applied for horizontal level by placing it on a nearly level horizontal surface and turning it 180 degrees (to right). In either case, if the positions of the spirit level bubble relative to the lines on the do not agree, the level should be replaced.

4.5.22.2 Test measures

Hand held volumetric field standards (test measures) shall be level within applicable toleran whether leveled at the neck, suspended by the bail handle, or placed on a level surface determined by a precision spirit or electronic digital level.

4.5.22.3 Provers

All mounted volumetric field standards (provers), including those permanently mounted, s have adequate provision for leveling. A truck or trailer on which a prover is mounted shall equipped with at least three leveling jacks to maintain a level and stable condition when un full liquid load.

4.5.22.4 Leveling jacks

All leveling jacks shall operate freely and be stable under load. The load rating for level jacks should be determined on the basis of 125 % of the anticipated maximum load including heaviest product to be tested.

4.5.23 **Levels**

4.5.23.1 Position

All mounted bottom-drain volumetric field standards (provers) shall be equipped with t non-spring loaded, adjustable spirit levels mounted horizontally at right angles to each other, approximately parallel to the surface of the scale plate, on the upper cone or where best vis from a standing position. Each level shall be mounted on a sturdy shelf and be equipped wi protective cover. The adjusting and mounting screws shall have provisions for sealing.

4.5.23.2 Level sensitivity

Spirit levels must have adequate sensitivity such that the level bubble will move by at least 0. when the prover is out of level in the orientation of the vertical plane passing through the ce of the sight glass and the center of the neck cylinder (i.e., commonly referred to as "fron

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Receipt Date:	June 10, 2019	Report No.:	341198
Cal. Date:	June 11, 2019	Serial No.:	8861610
Report Date:	June 11, 2019	Barcode:	202326

Calibration Certificate

JL INSPECTIONS, LLC
1004 5TH AVE NW
MANDAN, ND 58554
Contact: JOSH LEVI
Phone: 701-391-2355
PO Number: NONE
Procedure: NIST SOP 21
Technician ID: 20

Item(s) Submitted: 100 Gallon LPG Prover
Manufacturer: Wheeler / Brownie
Material: Mild Steel
Description: Zero Bottom
Condition: Good
Temperature: 22.2 °C
Pressure: 739.9 mmHg
Relative Humidity: 48.9 %
Standard H_2O Temp. 13.9 °C
Artifact H_2O Temp.: 14.2 °C

Nominal Volume (gal)		Calibrated Volume (gal)	Error (in^3)	k	U (in^3)	CCE (/°F)
100	As Found (at 100 psig)	100.020	4.7	2.03	5.1	0.0000186
	As Left (at 100 psig)	100.020	4.7			

Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after reaching bottom neck. The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-4 (2016). Uncertainty calculations contain the components in NIST SOP 21 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.
Conversion to SI unit: 1 gallon = 231 in^3 = 0.00378541 m^3.

Anna Pierce
Metrologist

Reviewed by:
Erik Alfvin
Technical Manager

DEPARTMENT OF COMMERCE
WEIGHTS & MEASURES DIVISION

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Receipt Date: June 10, 2019
Cal. Date: June 11, 2019
Report Date: June 11, 2019

Report No.: 341198
Serial No.: 8861610
Barcode: 202326

Pressure Correction Chart

JL INSPECTIONS, LLC
1004 5TH AVE NW
MANDAN, ND 58554
Contact: JOSH LEVI
Phone: 701-391-2355
PO Number: NONE
SOP: NIST SOP 21
Technician ID: 20

Item(s) Submitted: 100 Gallon LPG Prover
Manufacturer: Wheeler / Brownie
Material: Mild Steel
Description: Zero Bottom
Condition: Good
Temperature: 22.2 °C
Pressure: 739.9 mmHg
Relative Humidity: 48.9 %

Pressure Gauge Reading (psig)	Corrected Volume (gal)
0	99.890
10	99.904
20	99.918
30	99.932
40	99.946
50	99.960
60	99.972
70	99.984
80	99.996
90	100.008
100	100.020
110	100.028
120	100.036
130	100.044
140	100.052
150	100.060
160	100.068
170	100.076
180	100.084
190	100.092
200	100.100

Anna Pierce
Metrologist

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Receipt Date: June 10, 2019
Cal. Date: June 11, 2019
Report Date: June 11, 2019

Report No.: 341201
Serial No.: 1101-1
Barcode: 202343

Calibration Certificate

JL INSPECTIONS, LLC
1004 5TH AVE NW
MANDAN, ND 58554
Contact: JOSH LEVI
Phone: 701-391-2355
PO Number: NONE
Procedure: NIST SOP 19
Technician ID: 20

Item(s) Submitted: 500 Gallon Prover
Manufacturer: Warner Lewis
Material: Mild Steel
Type: Bottom Zero
Condition: Good
Temperature: 22.0 °C
Pressure: 739.1 mmHg
Relative Humidity: 53.8 %
Standard H_2O Temp.: 13.6 °C
Artifact H_2O Temp.: 13.6 °C

Nominal Volume (gal)		Calibrated Volume (gal)	Error (in^3)	k	U (in^3)	CCE (/°F)
500	As Found	499.842	-37	2.01	12	0.0000195
	As Left	499.842	-37			

Neck Calibration: No neck calibration was performed at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow.

The vessel listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

All tolerances and specifications were evaluated according to NIST Handbook 105-3 (2010). Uncertainty calculations contain the components in NIST SOP 19 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to item identified in this report only.

CCE is the cubical coefficient of thermal expansion, and the reference temperature is 60 °F.
Conversion to SI unit: 1 gallon = 231 in^3 = 0.00378541 m^3.

Anna Pierce
Metrologist

Reviewed by:
Pete Whebbe
Metrologist

United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

2019

Scope

Mass Echelon I
20 kg to 1 mg

Mass Echelon II
5 kg to 1 mg
1000 lb to 250 lb
50 lb to 0.001 lb

Mass Echelon III
50 kg to 1 mg
5000 lb to 0.001 lb
4 oz to 0.03125 oz

Weight Carts
5 000 lb to 2000 lb

Wheel Load Weighers
12 000 lb to 2000 lb

Railroad Test Cars/Carts
110 000 lb to 80 000 lb
10 000 lb to 8 000 lb

Volume Gravimetric, I
20 L to 10 mL
100 gal to 0.25 gal

Volume Transfer, II
1500 gal to 5 gal

Volume Transfer, II LPG
200 gal to 25 gal

Douglas A. Olson, Chief
NIST Office of Weights and Measures

Effective Dates: 2019-01-01 to 2020-02-01

(Rev.: March 2013)