



**Wyoming Department of Agriculture
Weights and Measures Laboratory
6607 Campstool Road
Cheyenne, WY 82002
(307)777-7556**



Calibration Certificate

For

Three-5 gallon Provers,
Two-5 gallon Test Measures,
Two-100 gal Provers,
and
One-500 gallon Prover

REC'D AUG - 8 2017

Manufacturer: Listed on Following Table
Serial No.: Listed on Following Table

Submitted by
T&T Measurements Inc.
Travis Thompson
10671 23rd St Northwest
Newtown, ND 58763
(701)421-1352

Manufacturer	Model Number	Serial Number	Nominal (gal)	Prover Volume (gal)	Prover Error (gal)	Expanded Uncertainty (gal)
Gas Service and Supply	GSB5	1427	5	4.9997*	-0.0003	0.0012
Gas Service and Supply	GSB5	1428	5	4.9998*	-0.0002	0.0012
Gas Service and Supply	GSB5	1429	5	4.9999*	-0.0001	0.0012
Seraphin	E3	11-88455	5	4.9999**	-0.0001	0.0012
Ellisco	FS282-5D	16970	5	5.0000**	0.0000	0.0012
Gas Service and Supply	GSB100	1425	100	100.0063*	0.0063	0.0053
Brownie Tank Manufacturing	100USG	12872105-2	100	100.0083*	0.0083	0.0053
Gas Service and Supply	GSB500	1430	500	499.962*	-0.038	0.042

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

* Prover Volume is Volume to Deliver after the cessation of flow and 30 second drain time at a reference temperature of 60° F.

** Prover Volume is Volume to Deliver after a 30 second pour and 10 second drain time at a reference temperature of 60° F.

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standard and the standard uncertainty for the measurement process. The combined standard uncertainty is multiplied by a coverage factor of 2.02 (5 gal), 2.05 (100 gal) and 2.25 (500 gal) to give an expanded uncertainty, which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the 1993 ISO Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability Statement:

Standards used for comparison are traceable to United States national standards at NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and traceability reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only. Traceability to the SI is maintained using the conversion factor: 1 gallon = 231 in³ = 3.785412 L = 0.003785412 m³.

Supplemental Information

Description of artifacts submitted for testing:

Three-5 gallon stainless steel provers, one-5 gallon stainless steel test measure, one-5 gallon carbon steel test measure, one-100 gallon stainless steel prover, one-100 gallon carbon steel prover and one-500 gallon stainless steel prover; Cubical Coefficient of Thermal Expansion 0.0000265/°F for stainless steel artifacts and 0.0000186/°F for carbon steel artifacts.

Conditions of artifacts submitted for testing:

Artifacts were in good condition and for the type and class; no adjustments were made.

Treatment of artifacts prior to testing:

Artifacts were degreased and thoroughly rinsed prior to calibration.

Equipment and Standards:

Standard	Range
NBS4214	5 gallons
SP100	100 gallons

Procedure used:

Volume Transfer Method (NISTIR 7383, SOP 19)

Environmental conditions are maintained within the following parameters:

Temperature	Relative Humidity
18 °C to 27 °C	40.0% to 60%

Date Artifacts Received: July 31, 2017 to August 2, 2017

Date of test: July 31, 2017 and August 3, 2017

Test performed by:



Date of Report Preparation: August 3, 2017

Robert Weidler
WDA State Metrologist

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REC'D AUG - 8 2017



Wyoming Department of Agriculture
Weights and Measures Laboratory
6607 Campstool Rd
Cheyenne, WY 82002
(307)777-7556



REPORT OF CALIBRATION

Issued To:

T&T Measurements Inc.
10671 23rd St Northwest
Newtown, ND 58723

Point of Contact:

Travis Thompson
Ph. (701)421-1352

Purchase Order Number:

N/A

Report Number:

17057

Calibration Date: August 2, 2017

This is to certify that the information contained in this report is true and correct as of the date of calibration.

A handwritten signature in black ink, appearing to read "Robert Weidler".

Robert Weidler, State Metrologist

8-3-17

Date of Issue

WDA Weights and Measures Metrology Laboratory

Report Number: 17057

Calibration Date: August 2, 2017

Artifact(s) Description

Test Item:	25 gal LPG Prover	Date Received:	July 31, 2017
Serial Number:	2105	Manufacture:	Gas Service and Supply
Material:	Steel, Pressure Vessel, Low Carbon	Material CCE:	0.000016 / °F
Condition:	Good	Specification:	NIST HB 105-4

Calibration Information

Job Order #:	N/A	Temperature:	21.0 °C
Metrologist:	Robert Weidler	Humidity:	53.6 % RH
Procedure:	NISTIR 7383, SOP 21	Water Temperature:	19.8 °C

Laboratory Reference Standards Used

Description	Serial Number	Cert. Number	Cal Date	Cal Due
25 gallon Slicker Plate	14-56567	NC1410-039-GV	10/16/2014	10/16/2024

Traceability Statement

The artifact(s) described in this report have been compared to the Standards of the State of Wyoming. The Standards of the State of Wyoming are traceable to 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 International System of Units (SI) for volume is the cubic meter (m³) (see Conversion Factors on page 3). The report number for this report is the only unique report 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 other uncertainties associated with the particular artifact (i.e., material cubical coefficient of expansion, reading meniscus, etc.). The combined standard uncertainty is multiplied by *k*, a coverage factor of 2, to give the expanded uncertainty (which defines an interval with an approximate 95 percent level of confidence). The expanded uncertainty presented in this report is consistent with NIST Technical Note 1297.

WDA Weights and Measures Metrology Laboratory

Report Number: 17057

Calibration Date: August 2, 2017

Pertinent Information

- In accordance with ISO/IEC FDIS 17025, General Requirements for the Competence of Testing and Calibration Laboratories, paragraph 5.10.4.4 'A calibration certificate (or calibration label) shall not contain any recommendation on the calibration interval except where this has been agreed with the client. This requirement may be superseded by legal regulations.'
- The artifact is considered in-tolerance when the error is equal to or less than the specified tolerance minus the measurement uncertainty. RED print indicates an out-of-tolerance reading.
- The LPG Prover 'As Left' volume is 'In-Tolerance', the LPG Prover may be used in meter testing without a correction.
- Enter the Pressure Correction from Table 1 that corresponds with the pressure being tested on your LPG Meter Test form.
- The calibration item was calibrated in a "wet down" condition using water. The calibration data above applies when the prover is drained for a 30 (\pm 5) second period after cessation of the main flow.
- The results listed in this report relate only to the artifacts described and extent of calibrations performed.

Conversion FactorsFrom NIST Special Publication 811, *Guide for the Use of the International System of Units (SI)*

Factors in boldface are exact

To convert from	to	multiply by
gallon (U.S.) (gal)	to cubic meter (m ³)	3.875 412 E-03
cubic inch (in ³)	to cubic meter (m ³)	1.638 706 4 E-05
liter (L)	to cubic meter (m ³)	1.0 E-03

WDA Weights and Measures Metrology Laboratory

Report Number: 17057

Calibration Date: August 2, 2017

Calibration Results

Nominal Volume (at zero mark on gauge)	Prover Volume As Found @ 60 °F and 100 psig (gal)	Prover Volume As Left @ 60 °F and 100 psig (gal)	NIST HB 105-4 Specification Tolerance ± (gal)	Uncertainty k=2 ± (gal)
25 gal	24.9984	24.9984	0.0500	0.0098

Table 1 - LPG Prover Corrections @ 60 °F

psig	Prover Scale Reading (gal)	Pressure Correction (Pcorr) (gal) ²	Prover Error (gal)	Prover Volume (gal)
0	0.035	-0.028549071	-0.030174519	24.96982548
10	0.031	-0.025194164	-0.026819612	24.97318039
20	0.027	-0.021839257	-0.023464705	24.9765353
30	0.023	-0.01848435	-0.020109798	24.9798902
40	0.019	-0.015129443	-0.016754891	24.98324511
50	0.015	-0.011774535	-0.013399984	24.98660002
60	0.012	-0.009419628	-0.011045076	24.98895492
70	0.009	-0.007064721	-0.008690169	24.99130983
80	0.006	-0.004709814	-0.006335262	24.99366474
90	0.003	-0.002354907	-0.003980355	24.99601964
100	0	0	-0.001625448	24.99837455
110	-0.002	0.001354907	-0.000270541	24.99972946
120	-0.004	0.002709814	0.001084366	25.00108437
130	-0.006	0.004064721	0.002439273	25.00243927
140	-0.008	0.005419628	0.00379418	25.00379418
150	-0.01	0.006774535	0.005149087	25.00514909
160	-0.012	0.008129443	0.006503994	25.00650399
170	-0.014	0.00948435	0.007858902	25.0078589
180	-0.016	0.010839257	0.009213809	25.00921381
190	-0.018	0.012194164	0.010568716	25.01056872
200	-0.02	0.013549071	0.011923623	25.01192362

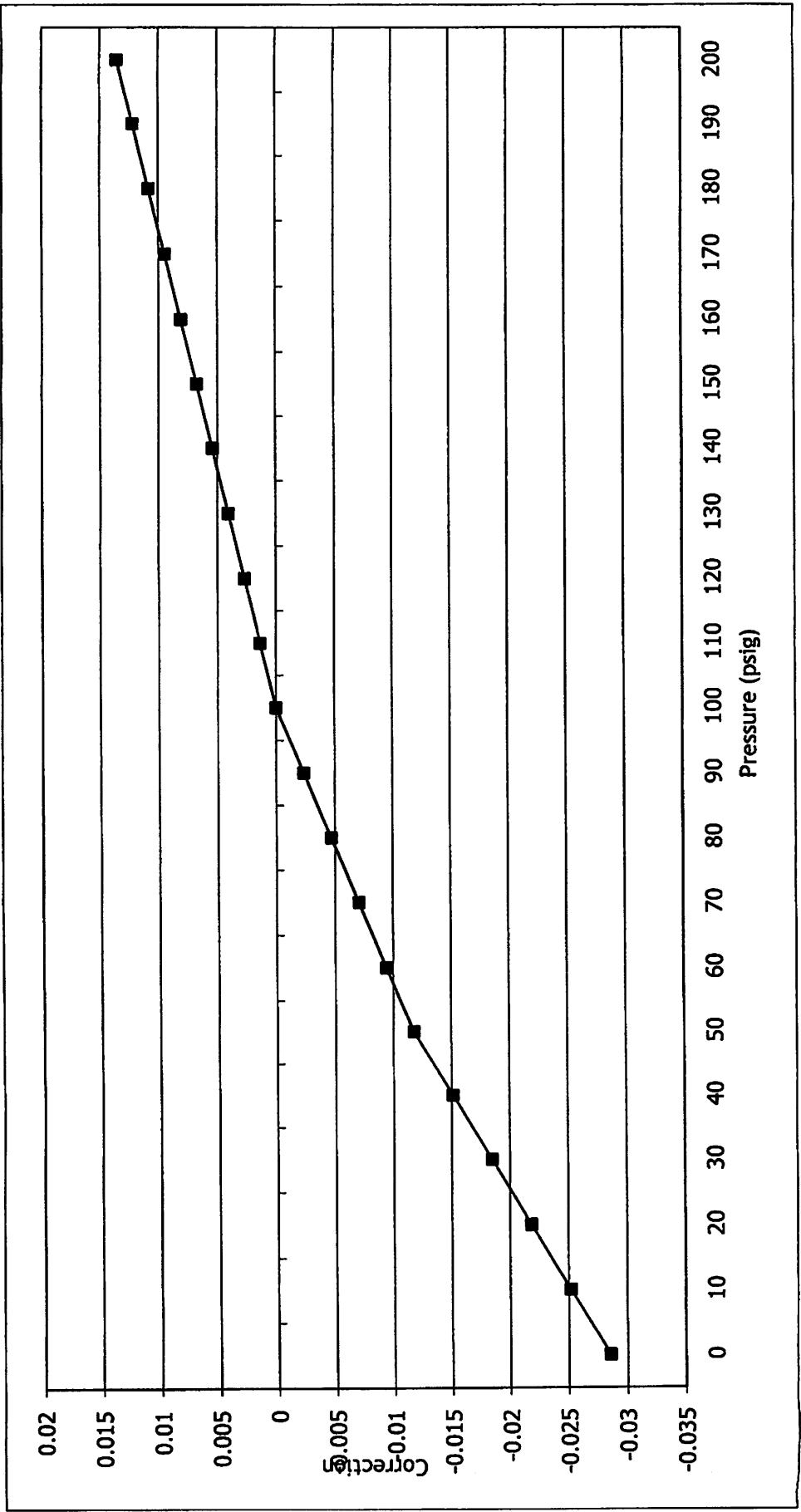
¹Gauge scale was adjusted for nominal volume at 100 psig.²Gauge scale could not be adjusted or did not need to be adjusted.

WDA Weights and Measures Metrology Laboratory

Report Number: 17057

Calibration Date: August 2, 2017

Chart 1 - LPG Pressure Corrections (gal) @ 60 °F



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Wyoming Department of Agriculture
Weights and Measures Laboratory
6607 Campstool Rd
Cheyenne, WY 82002
(307)777-7556



REPORT OF CALIBRATION

Issued To:

T&T Measurements Inc.
10671 23rd St Northwest
Newtown, ND 58763

Point of Contact:

Travis Thompson
Ph. (701)421-1352

Purchase Order Number:

N/A

Report Number:

17058

Calibration Date: August 1, 2017

This is to certify that the information contained in this report is true and correct as of the date of calibration.

A handwritten signature in cursive script, appearing to read "Robert Weidler".

Robert Weidler, State Metrologist

8-3-17

Date of Issue

WDA Weights and Measures Metrology Laboratory

Report Number: 17058

Calibration Date: August 1, 2017

Artifact(s) Description

Test Item:	100 gal LPG Prover	Date Received:	July 31, 2017
Serial Number:	2096	Manufacture:	Gas Service and Supply
Material:	Steel, Pressure Vessel, Low Carbon	Material CCE:	0.000016 / °F
Condition:	Good	Specification:	NIST HB 105-4

Calibration Information

Job Order #:	N/A	Temperature:	20.6 °C
Metrologist:	Robert Weidler	Humidity:	49.7 % RH
Procedure:	NISTIR 7383, SOP 21	Water Temperature:	20.1 °C

Laboratory Reference Standards Used

Description	Serial Number	Cert. Number	Cal Date	Cal Due
100 gallon Slicker Plate	11-53192	NC1203-117-GV	3/23/2012	3/23/2022

Traceability Statement

The artifact(s) described in this report have been compared to the Standards of the State of Wyoming. The Standards of the State of Wyoming are traceable to 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 International System of Units (SI) for volume is the cubic meter (m³) (see Conversion Factors on page 3). The report number for this report is the only unique report 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 other uncertainties associated with the particular artifact (i.e., material cubical coefficient of expansion, reading meniscus, etc.). The combined standard uncertainty is multiplied by k, a coverage factor of 2, to give the expanded uncertainty (which defines an interval with an approximate 95 percent level of confidence). The expanded uncertainty presented in this report is consistent with NIST Technical Note 1297.

WDA Weights and Measures Metrology Laboratory

Report Number: 17058

Calibration Date: August 1, 2017

Pertinent Information

- In accordance with ISO/IEC FDIS 17025, General Requirements for the Competence of Testing and Calibration Laboratories, paragraph 5.10.4.4 'A calibration certificate (or calibration label) shall not contain any recommendation on the calibration interval except where this has been agreed with the client. This requirement may be superseded by legal regulations.'
- The artifact is considered in-tolerance when the error is equal to or less than the specified tolerance minus the measurement uncertainty. RED print indicates an out-of-tolerance reading.
- The LPG Prover 'As Left' volume is 'In-Tolerance', the LPG Prover may be used in meter testing without a correction.
- Enter the Pressure Correction from Table 1 that corresponds with the pressure being tested on your LPG Meter Test form.
- The calibration item was calibrated in a "wet down" condition using water. The calibration data above applies when the prover is drained for a 30 (\pm 5) second period after cessation of the main flow.
- The results listed in this report relate only to the artifacts described and extent of calibrations performed.

Conversion FactorsFrom NIST Special Publication 811, *Guide for the Use of the International System of Units (SI)*

Factors in boldface are exact

To convert from	to	multiply by
gallon (U.S.) (gal)	to cubic meter (m ³)	3.875 412 E-03
cubic inch (in ³)	to cubic meter (m ³)	1.638 706 4 E-05
liter (L)	to cubic meter (m ³)	1.0 E-03

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WDA Weights and Measures Metrology Laboratory

Report Number: 17058

Calibration Date: August 1, 2017

Calibration Results

Nominal Volume (at zero mark on gauge)	Prover Volume As Found @ 60 °F and 100 psig (gal)	Prover Volume As Left @ 60 °F and 100 psig (gal)	NIST HB 105-4 Specification Tolerance ± (gal)	Uncertainty k=2 ± (gal)
100 gal	100.001	100.001	0.200	0.022

Table 1 - LPG Prover Corrections @ 60 °F

psig	Prover Scale Reading (gal)	Pressure Correction (Pcorr) (gal) ²	Prover Error (gal)	Prover Volume (gal)
0	0.15	-0.114196283	-0.112740125	99.88725988
10	0.135	-0.101776655	-0.100320497	99.8996795
20	0.12	-0.089357027	-0.087900868	99.91209913
30	0.105	-0.076937398	-0.07548124	99.92451876
40	0.09	-0.06451777	-0.063061612	99.93693839
50	0.075	-0.052098142	-0.050641983	99.94935802
60	0.062	-0.041678513	-0.040222355	99.95977765
70	0.049	-0.031258885	-0.029802726	99.97019727
80	0.036	-0.020839257	-0.019383098	99.9806169
90	0.023	-0.010419628	-0.00896347	99.99103653
100	0.01	0	0.001456159	100.0014562
110	0	0.007419628	0.008875787	100.0088758
120	-0.01	0.014839257	0.016295415	100.0162954
130	-0.02	0.022258885	0.023715044	100.023715
140	-0.03	0.029678513	0.031134672	100.0311347
150	-0.04	0.037098142	0.0385543	100.0385543
160	-0.047	0.04151777	0.042973929	100.0429739
170	-0.054	0.045937398	0.047393557	100.0473936
180	-0.061	0.050357027	0.051813185	100.0518132
190	-0.068	0.054776655	0.056232814	100.0562328
200	-0.075	0.059196283	0.060652442	100.0606524

¹Gauge scale was adjusted for nominal volume at 100 psig.

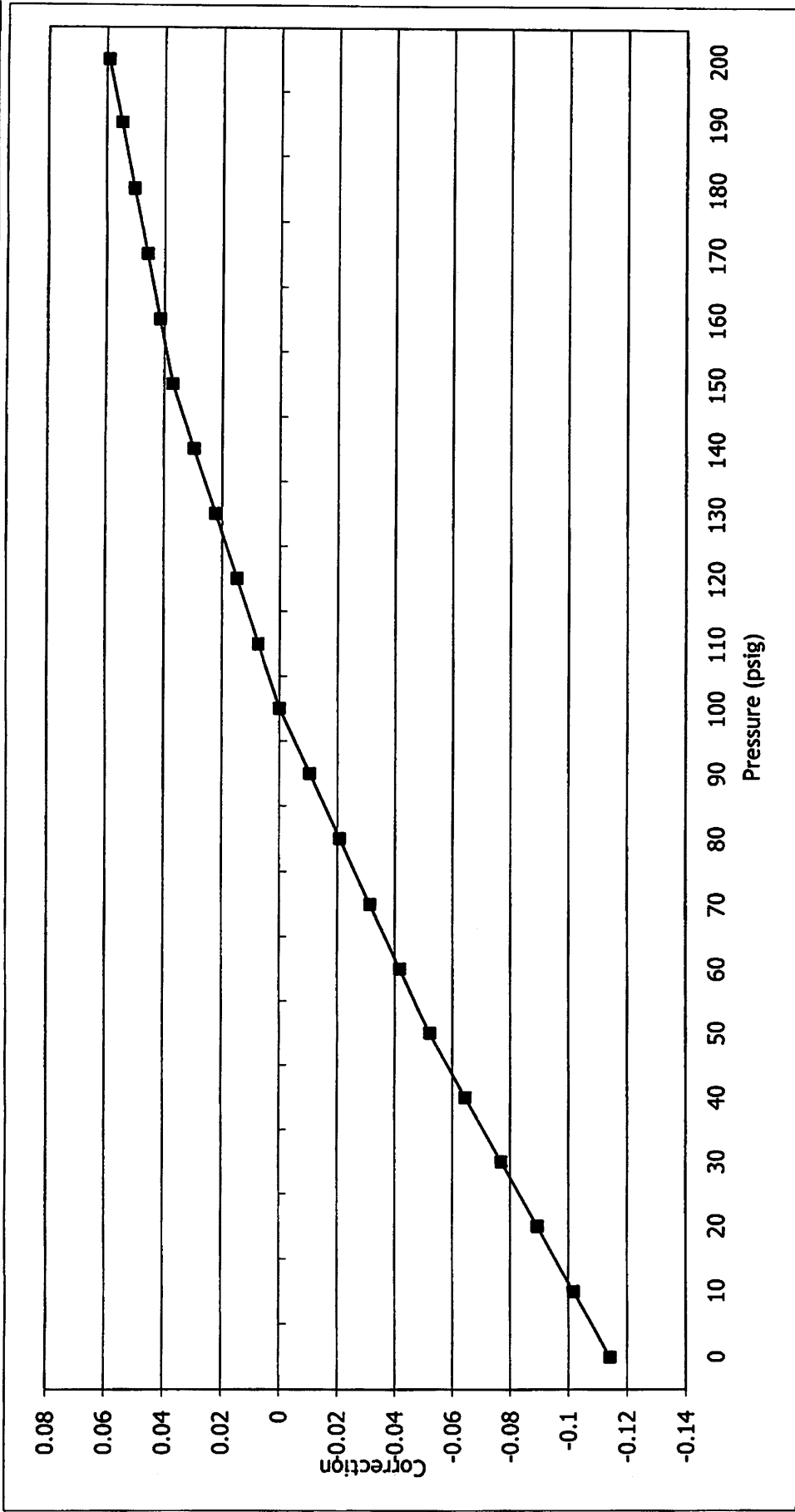
²Gauge scale could not be adjusted or did not need to be adjusted.

WDA Weights and Measures Metrology Laboratory

Report Number: 17058

Calibration Date: August 1, 2017

Chart 1 - LPG Pressure Corrections (gal) @ 60 °F



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Wyoming Department of Agriculture
Weights and Measures Laboratory
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Cheyenne, WY 82002
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REPORT OF CALIBRATION

Issued To:

T&T Measurements Inc.
10671 23rd St Northwest
Newtown, ND 58763

Point of Contact:

Travis Thompson
Ph. 701-421-1352

Purchase Order Number:

N/A

Report Number:

17059

Calibration Date: August 2, 2017

This is to certify that the information contained in this report is true and correct as of the date of calibration.

A handwritten signature in black ink, appearing to read "Robert Weidler".

Robert Weidler, State Metrologist

8-3-17

Date of Issue

WDA Weights and Measures Metrology Laboratory

Report Number: 17059

Calibration Date: August 2, 2017

Artifact(s) Description

Test Item:	100 gal LPG Prover	Date Received:	August 1, 2017
Serial Number:	2075	Manufacture:	Gas Service and Supply
Material:	Steel, Pressure Vessel, Low Carbon	Material CCE:	0.000016 / °F
Condition:	Good	Specification:	NIST HB 105-4

Calibration Information

Job Order #:	N/A	Temperature:	20.5 °C
Metrologist:	Robert Weidler	Humidity:	54.5 % RH
Procedure:	NISTIR 7383, SOP 21	Water Temperature:	20.0 °C

Laboratory Reference Standards Used

Description	Serial Number	Cert. Number	Cal Date	Cal Due
100 gallon Slicker Plate	11-53192	NC1203-117-GV	3/23/2012	3/23/2022

Traceability Statement

The artifact(s) described in this report have been compared to the Standards of the State of Wyoming. The Standards of the State of Wyoming are traceable to 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 International System of Units (SI) for volume is the cubic meter (m³) (see Conversion Factors on page 3). The report number for this report is the only unique report 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 other uncertainties associated with the particular artifact (i.e., material cubical coefficient of expansion, reading meniscus, etc.). The combined standard uncertainty is multiplied by k, a coverage factor of 2, to give the expanded uncertainty (which defines an interval with an approximate 95 percent level of confidence). The expanded uncertainty presented in this report is consistent with NIST Technical Note 1297.

WDA Weights and Measures Metrology Laboratory

Report Number: 17059

Calibration Date: August 2, 2017

Pertinent Information

- In-accordance-with ISO/IEC FDIS 17025, General Requirements for the Competence of Testing and Calibration Laboratories, paragraph 5.10.4.4 'A calibration certificate (or calibration label) shall not contain any recommendation on the calibration interval except where this has been agreed with the client. This requirement may be superseded by legal regulations.'
- The artifact is considered in-tolerance when the error is equal to or less than the specified tolerance minus the measurement uncertainty. RED print indicates an out-of-tolerance reading.
- The LPG Prover 'As Left' volume is 'In-Tolerance', the LPG Prover may be used in meter testing without a correction.
- Enter the Pressure Correction from Table 1 that corresponds with the pressure being tested on your LPG Meter Test form.
- The calibration item was calibrated in a "wet down" condition using water. The calibration data above applies when the prover is drained for a 30 (\pm 5) second period after cessation of the main flow.
- The results listed in this report relate only to the artifacts described and extent of calibrations performed.

Conversion FactorsFrom NIST Special Publication 811, *Guide for the Use of the International System of Units (SI)*

Factors in boldface are exact

To convert from	to	multiply by
gallon (U.S.) (gal)	to cubic meter (m ³)	3.875 412 E-03
cubic inch (in ³)	to cubic meter (m ³)	1.638 706 4 E-05
liter (L)	to cubic meter (m ³)	1.0 E-03

REC'D AUG - 8 2017

WDA Weights and Measures Metrology Laboratory

Report Number: 17059

Calibration Date: August 2, 2017

Calibration Results

Nominal Volume (at zero mark on gauge)	Prover Volume As Found @ 60 °F and 100 psig (gal)	Prover Volume As Left @ 60 °F and 100 psig (gal)	NIST HB 105-4 Specification Tolerance ± (gal)	Uncertainty k=2 ± (gal)
100 gal	100.011	100.011	0.200	0.022

Table 1 - LPG Prover Corrections @ 60 °F

psig	Prover Scale Reading (gal)	Pressure Correction (Pcorr) (gal) ²	Prover Error (gal)	Prover Volume (gal)
0	0.125	-0.099196283	-0.087918058	99.91208194
10	0.11	-0.086776655	-0.07549843	99.92450157
20	0.095	-0.074357027	-0.063078802	99.9369212
30	0.08	-0.061937398	-0.050659173	99.94934083
40	0.065	-0.04951777	-0.038239545	99.96176045
50	0.05	-0.037098142	-0.025819917	99.97418008
60	0.04	-0.029678513	-0.018400288	99.98159971
70	0.03	-0.022258885	-0.01098066	99.98901934
80	0.02	-0.014839257	-0.003561032	99.99643897
90	0.01	-0.007419628	0.003858597	100.0038586
100	0	0	0.011278225	100.0112782
110	-0.01	0.007419628	0.018697853	100.0186979
120	-0.02	0.014839257	0.026117482	100.0261175
130	-0.03	0.022258885	0.03353711	100.0335371
140	-0.04	0.029678513	0.040956738	100.0409567
150	-0.05	0.037098142	0.048376367	100.0483764
160	-0.06	0.04451777	0.055795995	100.055796
170	-0.07	0.051937398	0.063215623	100.0632156
180	-0.08	0.059357027	0.070635252	100.0706353
190	-0.09	0.066776655	0.07805488	100.0780549
200	-0.1	0.074196283	0.085474508	100.0854745

¹Gauge scale was adjusted for nominal volume at 100 psig.

²Gauge scale could not be adjusted or did not need to be adjusted.

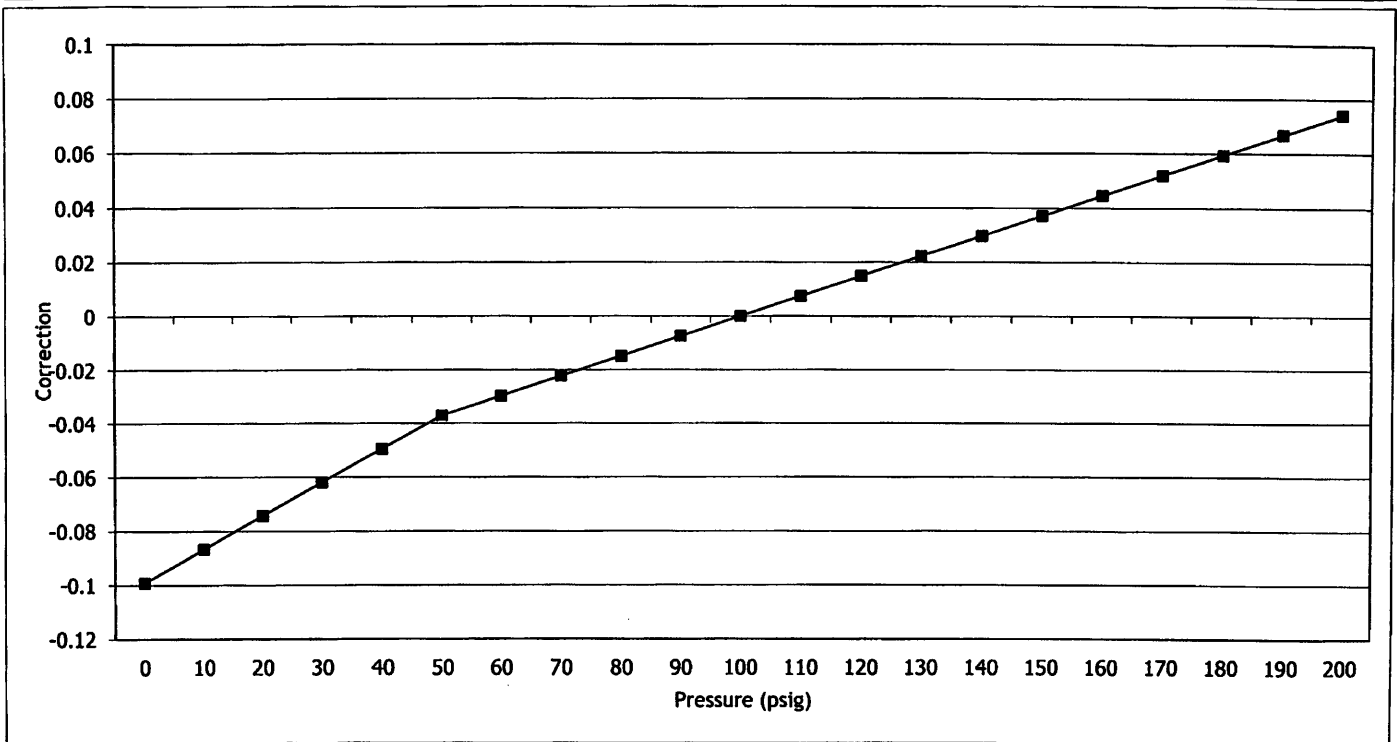
REC'D AUG - 8 2017

WDA Weights and Measures Metrology Laboratory

Report Number: 17059

Calibration Date: August 2, 2017

Chart 1 - LPG Pressure Corrections (gal) @ 60 °F





Wyoming Department of Agriculture
Weights and Measures Laboratory
6607 Campstool Rd
Cheyenne, WY 82002
(307)777-7556



Calibration Certificate
For

Twelve – 50 lb Class F Test Weights

Manufacturer: Various
Serial No.: Listed on Following Table

Submitted by
T&T Measurements Inc.
10671 23rd St Northwest
Newtown, ND 58763
(701)421-1352

Serial Number	Nominal (lb)	Conventional Mass Correction (mg)		Tolerance (g)	Expanded Uncertainty (g)
		As Found	As Left		
1	50	-7.25	0.21	2.3	0.20
2	50	-8.63	0.62	2.3	0.20
3	50	-4.90	0.25	2.3	0.20
4	50	-2.93	0.43	2.3	0.20
5	50	-1.25	-1.25	2.3	0.20
6	50	-3.02	0.36	2.3	0.20
6G9E	50	4.79	0.70	2.3	0.20
6G9F	50	1.62	0.88	2.3	0.20
6G9G	50	3.32	0.76	2.3	0.20
6G9H	50	23.85	0.84	2.3	0.20
6G9I	50	1.98	0.77	2.3	0.20
6G9J	50	1.01	1.01	2.3	0.20

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

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standard and the standard uncertainty for the measurement process. The combined standard uncertainty is multiplied by a coverage factor of 2.02 to give an expanded uncertainty, which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the 1993 ISO Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability Statement:

Standards used for comparison are traceable to United States national standards at NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and traceability reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only. Traceability is maintained to the SI using the following conversion: 1 lb = 0.45359237 kg.

Supplemental Information**Description of artifacts submitted for testing:**

Twelve-50 lb Class F Cast Iron Test Weights with an assumed density of 7.20 g/cm³.

Conditions of artifacts submitted for testing:

Artifacts 6G9E, 6G9G and 6G9H contained water in the adjusting cavity; all adjusting material was replaced prior to re-calibration. Remaining artifacts were in good condition for the type and class.

Treatment of artifacts prior to testing:

Artifacts were clean upon arrival with no further treatment needed.

Equipment and Standards:

<u>Balance</u>	<u>Range</u>	<u>Standards Used</u>
Mettler XP5003	0 kg – 32.1 kg	WY WS

Procedure used:

Single Substitution Method (NISTIR 6969, SOP 7)

Environmental conditions are maintained within the following parameters:

Temperature	Relative Humidity
18 °C to 27 °C	40.0% to 60%

Date Artifacts Received: July 31, 2017

Date of test: August 2, 2017

Test performed by: 

Date of Report Preparation: August 3, 2017

Robert Weidler
WDA State Metrologist

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United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Wyoming

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.

Scope

Mass Echelon III
3000 lb to 0.001 lb
8 oz to 0.03125 oz

Weight Carts
5000 lb to 2000 lb

Volume Transfer, II
1000 gal to 5 gal
100 gal to 25 gal LPG



2016 to 2017

A handwritten signature in black ink, appearing to read "Carol T. Hockerl".

Carol T. Hockerl, Chief
NIST Office of Weights and Measures

Effective Dates: 2016-01-01 to 2017-12-31