

South Dakota Department of Public Safety  
Office of Weights and Measures  
Metrology Lab

Lab: 1500 N Garfield - E. Truck Bypass Phone: 605-773-3170  
Office: 118 West Capitol Avenue Phone: 605-773-3697  
Pierre SD 57501



## REPORT OF CALIBRATION

LAB TEST NUMBER: MP3454  
DATE OF REPORT: 08/16/2016  
DATE RECEIVED: 08/15/2016  
DATE OF TEST: 08/15-16/2016

**Submitted By:** Capital Scale Company  
**Contact:** Travis Will  
**Mailing Address:** 3021 Valley Forge Dr  
**City, State, Zip:** Bismarck, ND 58503  
**Phone:** 701-255-1556  
**S/A Number:** 61

**Standards Submitted:**

16 - 1000 lb test weights  
2 - 2000 lb weight carts

**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  $k$  to provide 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 1995 ISO/IEC 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.

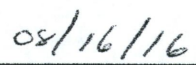
**Traceability statement:**

The Standards of the SD Metrology Laboratory used for comparison are traceable to the International System of Units (SI) through the National Institute of Standards and Technology. 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.

This document does not represent or imply endorsement by NIST Office of Weights and Measures or any agency of the State and/or national governments. The reported test values relate only to the observations made at the time and conditions of the test. This report may not be reproduced, except in full without the written approval of this laboratory. The client must not use this document to claim product endorsement by this laboratory.

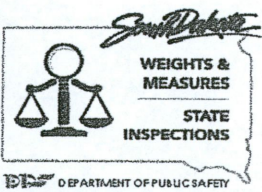
  
**Ron Peterson, Metrologist**



  
**Date**

4 **WM-15-764** Filed: 8/29/2016 Pages: 6  
Calibration reports

Capital Scale



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|                          |   |                           |               |
|--------------------------|---|---------------------------|---------------|
| <b>Submitted by:</b>     | Capital Scale Company                         | <b>Report Number:</b>     | MP3454        |
| <b>Mailing Address:</b>  | 3021 Valley Forge Dr                          | <b>Date Received:</b>     | 08/15/16      |
| <b>City, State, Zip:</b> | Bismarck, ND 58503                            | <b>Date tested:</b>       | 08/15-16/2016 |
| <b>Manufacturer:</b>     | Unknown                                       | <b>Condition of Cart:</b> | NEW           |
| <b>Serial Number:</b>    | 2016-1  | <b>Temperature (c):</b>   | 24.0          |
| <b>Test Method Used:</b> | SOP 33 Calibrations of Weight Carts, Sep 2014 | <b>Humidity:</b>          | 59.0%         |
| <b>Nominal (lb):</b>     | 2000  | <b>Pressure (mm/Hg):</b>  | 715.0         |
| <b>Tolerance (lb):</b>   | 0.50  |                           |               |

*The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory.*


Note: Cart platform weight is 240 lbs.

| As Found (lb) | As Left (lb) | Uncertainty-lb. (K=2) |
|---------------|--------------|-----------------------|
| -0.79         | -0.06        | 0.12                  |

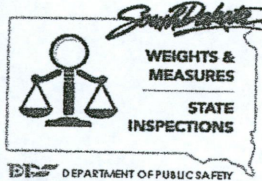
The weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels must be maintained as close to reference levels as possible during use. Any maintenance, repairs or damage to weight cart or its components will likely result in an out-of-tolerance condition; therefore, maintenance or replacement of components such as batteries, tires, filters, etc. will require calibration of the weight cart prior to subsequent use.

Test equipment used include recently calibrated weights and a Sartorius PR 6246/33 load cell.

*The above weight cart was compared with standards of the State of South Dakota, which are traceable the National Institute of Standards and Technology(NIST) Weights and Measures Division. The assigned test number provides documented evidence for measurement traceability.*

  
 Ron Peterson, Metrologist

08/16/2016  
 Date of Report



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| <b>Mailing Address:</b>  | 3021 Valley Forge Dr                          | <b>Date Received:</b>     | 08/15/16      |
| <b>City, State, Zip:</b> | Bismarck, ND 58503                            | <b>Date tested:</b>       | 08/15-16/2016 |
| <b>Manufacturer:</b>     | Unknown                                       | <b>Condition of Cart:</b> | NEW           |
| <b>Serial Number:</b>    | 2016-2  | <b>Temperature (c):</b>   | 24.0          |
| <b>Test Method Used:</b> | SOP 33 Calibrations of Weight Carts, Sep 2014 | <b>Humidity:</b>          | 59.0%         |
| <b>Nominal (lb):</b>     | 2000  | <b>Pressure (mm/Hg):</b>  | 715.0         |
| <b>Tolerance (lb):</b>   | 0.50  |                           |               |

*The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory.*

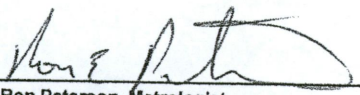
Note: Cart platform weight is 231 lbs.

| As Found (lb) | As Left (lb) | Uncertainty-lb. (K=2) |
|---------------|--------------|-----------------------|
| 0.00          | 0.00         | 0.12                  |

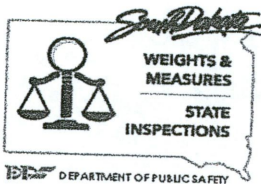
The weight cart was allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels must be maintained as close to reference levels as possible during use. Any maintenance, repairs or damage to weight cart or its components will likely result in an out-of-tolerance condition; therefore, maintenance or replacement of full, components such as batteries, tires, filters, etc. will require calibration of the weight cart prior to subsequent use.

Test equipment used include recently calibrated weights and a Sartorius PR 6246/33 load cell.

*The above weight cart was compared with standards of the State of South Dakota, which are traceable the National Institute of Standards and Technology(NIST) Weights and Measures Division. The assigned test number provides documented evidence for measurement traceability.*

  
 Ron Peterson, Metrologist

08/16/2016  
 Date of Report



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**Submitted by:** Capital Scale Company **Report Number:** MP3454  
**Mailing Address:** 3021 Valley Forge Dr **Date Received:** 08/15/16  
**City, State, Zip:** Bismarck, ND 58503 **Date tested:** 08/15/16  
**Artifacts Submitted:** 16- 1000 lb test weights **Condition of Weights:** GOOD  
**Test Method Used:** SOP 8/ MODIFIED SUB, Sep 2014 **Temperature (c):** 22  
**Equipment Used:** Russell Balance/ Vaisala PTU301 **Humidity:** 45.2  
**Pressure (mm/Hg):** 713.7

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.

Standards Used: SD Lab 1000 lb and/or 500 lb Working Standards.

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory. These weights were not screened for magnetism and effects of magnetism is not included in the uncertainties.

| Nominal | Serial Number | Correction As Found |        | Correction As Left |        | Tolerance | Uncertainty | K    |
|---------|---------------|---------------------|--------|--------------------|--------|-----------|-------------|------|
| 1000 lb | 13.1          | 0.077 lb            | 35.0 g | 0.003 lb           | 1.3 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.2          | 0.013 lb            | 5.8 g  | 0.013 lb           | 5.8 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.3          | 0.085 lb            | 38.4 g | 0.004 lb           | 1.9 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.4          | 0.077 lb            | 35.0 g | 0.004 lb           | 1.8 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.5          | 0.061 lb            | 27.6 g | 0.061 lb           | 27.6 g | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.6          | 0.007 lb            | 3.2 g  | 0.007 lb           | 3.2 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.7          | 0.062 lb            | 28.1 g | 0.062 lb           | 28.1 g | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.8          | 0.055 lb            | 24.9 g | 0.055 lb           | 24.9 g | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 13.9          | 0.049 lb            | 22.4 g | 0.049 lb           | 22.4 g | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.1          | -0.016 lb           | -7.1 g | -0.016 lb          | -7.1 g | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.2          | 0.020 lb            | 9.3 g  | 0.020 lb           | 9.3 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.3          | 0.019 lb            | 8.4 g  | 0.019 lb           | 8.4 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.4          | 0.011 lb            | 4.8 g  | 0.011 lb           | 4.8 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.5          | 0.015 lb            | 6.7 g  | 0.015 lb           | 6.7 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.6          | 0.015 lb            | 6.6 g  | 0.015 lb           | 6.6 g  | 45 g      | 6.8 g       | 2.03 |
| 1000 lb | 16.7          | 0.041 lb            | 18.4 g | 0.041 lb           | 18.4 g | 45 g      | 6.8 g       | 2.03 |

End of Report

Ron Peterson, Metrologist

08/16/2016  
 Date of Report

Office of Weights and Measures  
 118 W. Capitol Ave.  
 Pierre, SD 57501

Phone:605-773-3697  
 Fax:605-773-6631  
 www.dps.sd.gov

**Bauske, Shelly A.**

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**From:** Meghan Will <meghan.capscale@midconetwork.com>  
**Sent:** Monday, August 29, 2016 2:19 PM  
**To:** Bauske, Shelly A.  
**Subject:** Metrology Report for New Truck  
**Attachments:** MetrologyReportfor2011Freightliner.pdf

Shelly,

I have attached the recent Metrology Report for the test weights and carts for our new truck. Our plan is to get the most of our test weights certified in January as we have been doing, but keep this truck certification for the summer/early fall.

If you have any questions, feel free to contact me.

Sincerely,

*Meghan Will*

Capital Scale Co.  
3021 Valley Forge St.  
Bismarck, ND 58503  
Ph: 701-255-1556  
Fax: 701-255-3512

# United States Department of Commerce

## Rational Institute of Standards and Technology

Certificate of Metrological Traceability For:

# South Dakota

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**  
30 kg to 100 mg  
1000 lb to 0.001 lb  
8 oz to 0.03125 oz

**Weight Carts**  
4000 lb to 2000 lb

**Volume Transfer, II**  
5 gal



2016

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

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