

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: MP3850
DATE OF REPORT: 01/23/2019
DATE RECEIVED: 01/17/2019
DATE OF TEST: 01/22-23/2019

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:

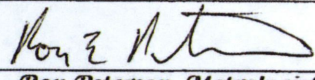
20 - 1000 lb weights	3 - Avoirdupois weight kits
60 - 50 lb weights	1 - Metric weight kit
2 - 2000 lb weight carts	

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.

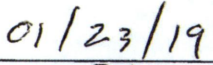
Traceability statement:

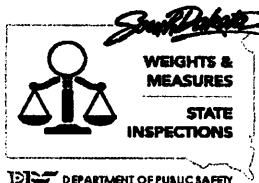
The Standards of the SD Metrology Laboratory used for comparison are traceable to the International System of Units (SI) through the National Institute of Standards and Technology. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability 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



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Pierre SD 57501

Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Manufacturer:	Unknown	Condition of Cart:	GOOD
Serial Number:	SN 541094	Temperature (c):	21.9
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	Humidity:	14.5%
Nominal (lb):	2000	Pressure (mm/Hg):	711.1
Tolerance (lb):	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.

As Found (lb)	As Left (lb)	Uncertainty-lb. (k= 2.06)
0.07	0.07	0.16

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.

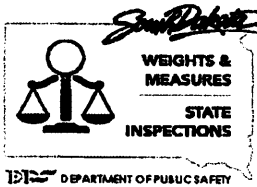
Test equipment used include recently calibrated weights and a Sartorius PR 6246/33 load cell.

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.

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01/23/2019

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Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Manufacturer:	Unknown	Condition of Cart:	GOOD
Serial Number:	Unknown	Temperature (c):	21.9
Test Method Used:	SOP 33 Calibrations of Weight Carts, Jan 2016	Humidity:	14.5%
Nominal (lb):	2000	Pressure (mm/Hg):	711.1
Tolerance (lb):	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.

As Found (lb)	As Left (lb)	Uncertainty-lb. ($k=2.06$)
-1.15	-0.01	0.16

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.

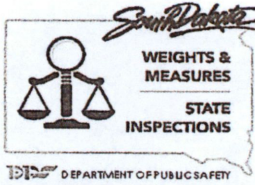
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Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22/19
Artifacts Submitted	1000 Lb weights	Condition of Weights:	GOOD
		Temperature (c):	21.8
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.3
Equipment Used:	Russell Balance/ Vaisala PTU301	Pressure (mm/Hg):	717.7

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	13.10	0.029 lb	13.0 g	0.029 lb	13.0 g	45 g	6.1 g	2.03
1000 lb	13.11	-0.011 lb	-5.1 g	-0.011 lb	-5.1 g	45 g	6.1 g	2.03
1000 lb	13.12	0.000 lb	-0.1 g	0.000 lb	-0.1 g	45 g	6.1 g	2.03
1000 lb	13.13	0.007 lb	3.2 g	0.007 lb	3.2 g	45 g	6.1 g	2.03
1000 lb	13.14	-0.029 lb	-13.0 g	-0.029 lb	-13.0 g	45 g	6.1 g	2.03
1000 lb	13.15	-0.018 lb	-8.2 g	-0.018 lb	-8.2 g	45 g	6.1 g	2.03
1000 lb	13.16	-0.012 lb	-5.6 g	-0.012 lb	-5.6 g	45 g	6.1 g	2.03
1000 lb	13.17	-0.012 lb	-5.3 g	-0.012 lb	-5.3 g	45 g	6.1 g	2.03
1000 lb	13.18	-0.029 lb	-13.2 g	-0.029 lb	-13.2 g	45 g	6.1 g	2.03
500 lb	13.19	0.005 lb	2.2 g	0.005 lb	2.2 g	23 g	3.1 g	2.05
1000 lb	13.20	0.000 lb	0.0 g	0.000 lb	0.0 g	45 g	6.1 g	2.03
1000 lb	13.21	-0.003 lb	-1.3 g	-0.003 lb	-1.3 g	45 g	6.1 g	2.03
1000 lb	13.22	-0.019 lb	-8.6 g	-0.019 lb	-8.6 g	45 g	6.1 g	2.03
1000 lb	13.23	-0.025 lb	-11.5 g	-0.025 lb	-11.5 g	45 g	6.1 g	2.03
1000 lb	13.24	-0.017 lb	-7.9 g	-0.017 lb	-7.9 g	45 g	6.1 g	2.03
1000 lb	13.25	0.010 lb	4.4 g	0.010 lb	4.4 g	45 g	6.1 g	2.03
1000 lb	13.26	-0.034 lb	-15.4 g	-0.034 lb	-15.4 g	45 g	6.1 g	2.03
1000 lb	13.27	-0.016 lb	-7.4 g	-0.016 lb	-7.4 g	45 g	6.1 g	2.03
1000 lb	13.28	-0.009 lb	-4.2 g	-0.009 lb	-4.2 g	45 g	6.1 g	2.03
1000 lb	13.29	-0.003 lb	-1.1 g	-0.003 lb	-1.1 g	45 g	6.1 g	2.03

See attached - Amended Report ←


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Pierre SD 57501



Submitted by:	Capital Scale Company	Report Number:	MP3850 Amended
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22/19
Artifacts Submitted	1000 Lb weights	Condition of Weights:	GOOD
		Temperature (c):	21.8
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.3
Equipment Used:	Russell Balance/ Vaisala PTU301	Pressure (mm/Hg):	717.7

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

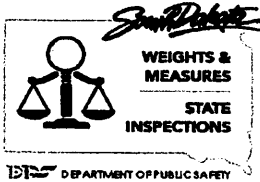
Standards Used: SD Lab 1000 lb and/or 500 lb Working Standards.

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Nominal	Serial Number	Correction As Found		Correction As Left		Tolerance	Uncertainty	k
1000 lb	13.10	0.029 lb	13.0 g	0.029 lb	13.0 g	45 g	6.1 g	2.03
1000 lb	13.11	-0.011 lb	-5.1 g	-0.011 lb	-5.1 g	45 g	6.1 g	2.03
1000 lb	13.12	0.000 lb	-0.1 g	0.000 lb	-0.1 g	45 g	6.1 g	2.03
1000 lb	13.13	0.007 lb	3.2 g	0.007 lb	3.2 g	45 g	6.1 g	2.03
1000 lb	13.14	-0.029 lb	-13.0 g	-0.029 lb	-13.0 g	45 g	6.1 g	2.03
1000 lb	13.15	-0.018 lb	-8.2 g	-0.018 lb	-8.2 g	45 g	6.1 g	2.03
1000 lb	13.16	-0.012 lb	-5.6 g	-0.012 lb	-5.6 g	45 g	6.1 g	2.03
1000 lb	13.17	-0.012 lb	-5.3 g	-0.012 lb	-5.3 g	45 g	6.1 g	2.03
1000 lb	13.18	-0.029 lb	-13.2 g	-0.029 lb	-13.2 g	45 g	6.1 g	2.03
1000 lb	13.19	0.005 lb	2.2 g	0.005 lb	2.2 g	45 g	6.1 g	2.03
1000 lb	13.20	0.000 lb	0.0 g	0.000 lb	0.0 g	45 g	6.1 g	2.03
1000 lb	13.21	-0.003 lb	-1.3 g	-0.003 lb	-1.3 g	45 g	6.1 g	2.03
1000 lb	13.22	-0.019 lb	-8.6 g	-0.019 lb	-8.6 g	45 g	6.1 g	2.03
1000 lb	13.23	-0.025 lb	-11.5 g	-0.025 lb	-11.5 g	45 g	6.1 g	2.03
1000 lb	13.24	-0.017 lb	-7.9 g	-0.017 lb	-7.9 g	45 g	6.1 g	2.03
1000 lb	13.25	0.010 lb	4.4 g	0.010 lb	4.4 g	45 g	6.1 g	2.03
1000 lb	13.26	-0.034 lb	-15.4 g	-0.034 lb	-15.4 g	45 g	6.1 g	2.03
1000 lb	13.27	-0.016 lb	-7.4 g	-0.016 lb	-7.4 g	45 g	6.1 g	2.03
1000 lb	13.28	-0.009 lb	-4.2 g	-0.009 lb	-4.2 g	45 g	6.1 g	2.03
1000 lb	13.29	-0.003 lb	-1.1 g	-0.003 lb	-1.1 g	45 g	6.1 g	2.03


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Office: 118 West Capitol Avenue Phone: 605-773-3697
Pierre SD 57501

Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	50 lb cast weights	Condition of Weights:	GOOD
		Temperature (c):	22.4
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.6%
Equipment Used:	Mettler KA-30/ Vaisala PTU301	Pressure (mm/Hg):	710.9

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

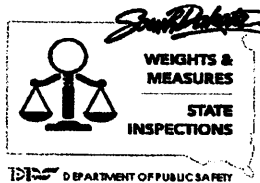
Standards Used: SD Lab Working Standards.

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Nominal	Serial Number	Correction As Found	Correction As Left	Tolerance	Uncertainty	k
50 lb	2	196 mg	196 mg	2300 mg	278 mg	2.03
50 lb	3	-364 mg	-364 mg	2300 mg	278 mg	2.03
50 lb	4	611 mg	611 mg	2300 mg	278 mg	2.03
50 lb	8	-524 mg	-524 mg	2300 mg	278 mg	2.03
50 lb	9	806 mg	806 mg	2300 mg	278 mg	2.03
50 lb	15	-384 mg	-384 mg	2300 mg	278 mg	2.03
50 lb	16	-1649 mg	116 mg	2300 mg	278 mg	2.03
50 lb	19	291 mg	291 mg	2300 mg	278 mg	2.03
50 lb	20	256 mg	256 mg	2300 mg	278 mg	2.03
50 lb	23	-549 mg	-549 mg	2300 mg	278 mg	2.03
50 lb	24	-504 mg	-504 mg	2300 mg	278 mg	2.03
50 lb	26	-129 mg	-129 mg	2300 mg	278 mg	2.03
50 lb	27	-774 mg	-774 mg	2300 mg	278 mg	2.03
50 lb	28	-379 mg	-379 mg	2300 mg	278 mg	2.03
50 lb	29	-964 mg	-964 mg	2300 mg	278 mg	2.03
50 lb	30	-374 mg	-374 mg	2300 mg	278 mg	2.03
50 lb	32	-469 mg	-469 mg	2300 mg	278 mg	2.03
50 lb	33	1076 mg	1076 mg	2300 mg	278 mg	2.03
50 lb	34	-674 mg	-674 mg	2300 mg	278 mg	2.03
50 lb	35	1041 mg	1041 mg	2300 mg	278 mg	2.03


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Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	50 lb cast weights	Condition of Weights:	GOOD
		Temperature (c):	22.4
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.6%
Equipment Used:	Mettler KA-30/ Vaisala PTU301	Pressure (mm/Hg):	710.9

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

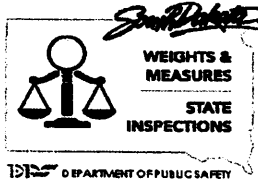
Standards Used: SD Lab Working Standards.

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Nominal	Serial Number	Correction As Found	Correction As Left	Tolerance	Uncertainty	k
50 lb	36	-1824 mg	11 mg	2300 mg	278 mg	2.03
50 lb	39	-1349 mg	16 mg	2300 mg	278 mg	2.03
50 lb	40	1376 mg	1376 mg	2300 mg	278 mg	2.03
50 lb	41	781 mg	781 mg	2300 mg	278 mg	2.03
50 lb	43	-1259 mg	96 mg	2300 mg	278 mg	2.03
50 lb	44	-29 mg	-29 mg	2300 mg	278 mg	2.03
50 lb	45	1761 mg	-19 mg	2300 mg	278 mg	2.03
50 lb	46	741 mg	741 mg	2300 mg	278 mg	2.03
50 lb	50	-1789 mg	1 mg	2300 mg	278 mg	2.03
50 lb	51	-1669 mg	11 mg	2300 mg	278 mg	2.03
50 lb	52	1016 mg	1016 mg	2300 mg	278 mg	2.03
50 lb	54	1191 mg	-19 mg	2300 mg	278 mg	2.03
50 lb	55	-239 mg	-239 mg	2300 mg	278 mg	2.03
50 lb	60	1611 mg	61 mg	2300 mg	278 mg	2.03
50 lb	61	381 mg	381 mg	2300 mg	278 mg	2.03
50 lb	63	-1709 mg	-59 mg	2300 mg	278 mg	2.03
50 lb	64	-894 mg	-894 mg	2300 mg	278 mg	2.03
50 lb	65	366 mg	366 mg	2300 mg	278 mg	2.03
50 lb	66	-1344 mg	26 mg	2300 mg	278 mg	2.03
50 lb	69	101 mg	101 mg	2300 mg	278 mg	2.03


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City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	50 lb cast weights	Condition of Weights:	GOOD
		Temperature (c):	22.4
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.6%
Equipment Used:	Mettler KA-30/ Vaisala PTU301	Pressure (mm/Hg):	710.9

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

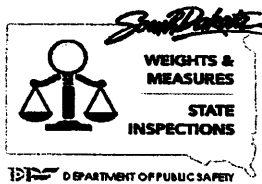
Standards Used: SD Lab Working Standards.

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50 lb	70	966 mg	966 mg	2300 mg	278 mg	2.03
50 lb	72	666 mg	666 mg	2300 mg	278 mg	2.03
50 lb	78	-114 mg	-114 mg	2300 mg	278 mg	2.03
50 lb	80	-489 mg	-489 mg	2300 mg	278 mg	2.03
50 lb	A	921 mg	921 mg	2300 mg	278 mg	2.03
50 lb	AA	-1714 mg	111 mg	2300 mg	278 mg	2.03
50 lb	AAA	-1434 mg	31 mg	2300 mg	278 mg	2.03
50 lb	B	-34 mg	-34 mg	2300 mg	278 mg	2.03
50 lb	BB	-324 mg	-324 mg	2300 mg	278 mg	2.03
50 lb	GG	-1519 mg	-19 mg	2300 mg	278 mg	2.03
50 lb	H	-124 mg	-124 mg	2300 mg	278 mg	2.03
50 lb	I	-1209 mg	-44 mg	2300 mg	278 mg	2.03
50 lb	L	-1054 mg	-1054 mg	2300 mg	278 mg	2.03
50 lb	R	316 mg	316 mg	2300 mg	278 mg	2.03
50 lb	S	1226 mg	-19 mg	2300 mg	278 mg	2.03
50 lb	U	231 mg	231 mg	2300 mg	278 mg	2.03
50 lb	W	-39 mg	-39 mg	2300 mg	278 mg	2.03
50 lb	X	-1939 mg	66 mg	2300 mg	278 mg	2.03
50 lb	Y	421 mg	421 mg	2300 mg	278 mg	2.03
50 lb	Z	-3609 mg	141 mg	2300 mg	278 mg	2.03


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Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/23/19
Artifacts Submitted	23 piece Avoirdupois kit SN 11905C	Condition of Weights:	FAIR
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Temperature (c):	22.1
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	Humidity:	47.4
		Pressure (mm/Hg):	710

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab Working Standards.

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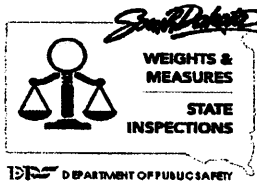
Nominal	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
5 lb	1	-20 mg	-20 mg	230 mg	28 mg	2.04
5 lb	2	18 mg	18 mg	230 mg	28 mg	2.04
5 lb	3	13 mg	13 mg	230 mg	28 mg	2.04
5 lb	4	62 mg	62 mg	230 mg	28 mg	2.04
5 lb	5	71 mg	71 mg	230 mg	28 mg	2.04
1 lb	1	-22.4 mg	-22.4 mg	70 mg	8.8 mg	2.09
1 lb	2	-12.4 mg	-12.4 mg	70 mg	8.8 mg	2.09
1 lb	3	-23.4 mg	-23.4 mg	70 mg	8.8 mg	2.09
1 lb	4	-13.4 mg	-13.4 mg	70 mg	8.8 mg	2.09
1 lb	5	-10.4 mg	-10.4 mg	70 mg	8.8 mg	2.09
8 oz		24.1 mg	24.1 mg	45 mg	5.5 mg	2.05
4 oz		3.5 mg	3.5 mg	23 mg	2.8 mg	2.05
2 oz		4.1 mg	4.1 mg	11 mg	1.3 mg	2.03
1 oz		3.90 mg	3.90 mg	5.4 mg	0.66 mg	2.05
1/2 oz		-0.89 mg	-0.89 mg	2.8 mg	0.34 mg	2.05
1/4 oz		0.31 mg	0.31 mg	1.7 mg	0.21 mg	2.03
1/8 oz		0.84 mg	0.84 mg	1.3 mg	0.16 mg	2.03
0.01 lb		0.11 mg	0.11 mg	1.5 mg	0.18 mg	2.05
0.05 lb		2.44 mg	2.44 mg	4.5 mg	0.56 mg	2.09
0.05 lb		1.60 mg	1.60 mg	4.5 mg	0.56 mg	2.09
0.02 lb		-0.18 mg	-0.18 mg	1.8 mg	0.22 mg	2.09
0.02 lb		-0.34 mg	-0.34 mg	1.8 mg	0.22 mg	2.09
0.01 lb		-0.86 mg	-0.86 mg	1.5 mg	0.18 mg	2.05

Ron Peterson, Metrologist

01/23/2019
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



**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

Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	12 piece Avoirdupois kit	Condition of Weights:	FAIR
	SN 11905A	Temperature (c):	22.1
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Humidity:	47.4
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	Pressure (mm/Hg):	710

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

Standards Used: SD Lab 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.

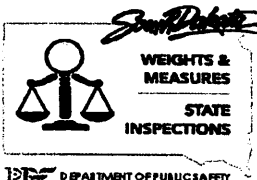
Nominal	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
10 lb		63 mg	63 mg	450 mg	54 mg	2.03
10 lb		94 mg	94 mg	450 mg	54 mg	2.03
5 lb		-89 mg	-89 mg	230 mg	28 mg	2.04
2 lb		-2 mg	-2 mg	91 mg	11 mg	2.03
2 lb		14 mg	14 mg	91 mg	11 mg	2.03
1 lb		-4.0 mg	-4.0 mg	70 mg	8.8 mg	2.09
8 oz		12.1 mg	12.1 mg	45 mg	5.5 mg	2.05
4 oz		-4.6 mg	-4.6 mg	23 mg	2.8 mg	2.05
1 oz		3.04 mg	3.04 mg	5.4 mg	0.66 mg	2.05
1 oz		3.10 mg	3.10 mg	5.4 mg	0.66 mg	2.05
1 oz		1.77 mg	1.77 mg	5.4 mg	0.66 mg	2.05
1/2 oz		1.38 mg	1.38 mg	2.8 mg	0.34 mg	2.05
1/4 oz		-0.97 mg	-0.97 mg	1.7 mg	0.21 mg	2.03


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

Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	16 piece Avoirdupois kit SN 11905B	Condition of Weights:	FAIR
Test Method Used:	SOP B/ MODIFIED SUB, 2018	Temperature (c):	22.1
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	Humidity:	47.4
		Pressure (mm/Hg):	710

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

Standards Used: SD Lab Working Standards.

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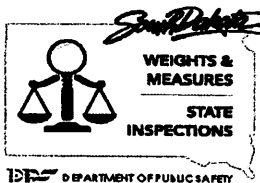
Nominal	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
2 lb	1	27 mg	27 mg	91 mg	11 mg	2.03
2 lb	2	13 mg	13 mg	91 mg	11 mg	2.03
2 lb	3	14 mg	14 mg	91 mg	11 mg	2.03
1 lb		19.6 mg	19.6 mg	70 mg	8.8 mg	2.09
8 oz		12.1 mg	12.1 mg	45 mg	5.5 mg	2.05
4 oz		-2.5 mg	-2.5 mg	23 mg	2.8 mg	2.05
2 oz		4.2 mg	4.2 mg	11 mg	1.3 mg	2.03
1 oz		0.55 mg	0.55 mg	5.4 mg	0.66 mg	2.05
1/2 oz		0.08 mg	0.08 mg	2.8 mg	0.34 mg	2.05
1/4 oz		0.34 mg	0.34 mg	1.7 mg	0.21 mg	2.03
0.3 lb		-0.7 mg	-0.7 mg	23 mg	4.9 mg	2.03
0.2 lb		0.9 mg	0.9 mg	18 mg	2.2 mg	2.03
0.1 lb		4.3 mg	4.3 mg	9.1 mg	1.1 mg	2.03
0.05 lb		0.38 mg	0.38 mg	4.5 mg	0.56 mg	2.09
0.03 lb		-1.44 mg	-1.44 mg	4.5 mg	0.56 mg	2.09
0.02 lb		0.05 mg	0.05 mg	1.8 mg	0.22 mg	2.09

Ron Peterson, Metrologist

01/23/2019
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Lab: 1500 N Garfield - E. Truck Bypass Phone: 605-773-3170
Office: 118 West Capitol Avenue Phone: 605-773-3697
Pierre SD 57501

Submitted by:	Capital Scale Company	Report Number:	MP3850
Mailing Address:	3021 Valley Forge Dr	Date Received:	01/17/19
City, State, Zip:	Bismarck, ND 58503	Date tested:	01/22-23/2019
Artifacts Submitted	16 piece Metric kit SN 11905B	Condition of Weights:	FAIR
Test Method Used:	SOP 8/ MODIFIED SUB, 2018	Temperature (c):	22.1
Equipment Used:	Mettler AX 205 DR/ Mettler PR503/ Vaisala PTU301	Humidity:	47.4
		Pressure (mm/Hg):	710

Treatment of artifacts prior to testing: Thermal equilibrium was obtained by placing the artifacts in the lab overnight.
Standards Used: SD Lab 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	Identifier	Correction As Found	Correction As Left	Tolerance Class F	Uncertainty	k
2 kg		47 mg	47 mg	200 mg	24 mg	2.03
1 kg		36 mg	36 mg	100 mg	12 mg	2.03
500 g		27.7 mg	27.7 mg	70 mg	8.5 mg	2.03
200 g		13.1 mg	13.1 mg	40 mg	4.9 mg	2.03
200 g		18.3 mg	18.3 mg	40 mg	4.9 mg	2.03
100 g		9.9 mg	9.9 mg	20 mg	2.4 mg	2.03
50 g		5.1 mg	5.1 mg	10 mg	1.2 mg	2.05
20 g		2.56 mg	2.56 mg	4 mg	0.48 mg	2.04
20 g		0.85 mg	0.85 mg	4 mg	0.48 mg	2.04
10 g		0.29 mg	0.29 mg	2 mg	0.24 mg	2.05
5 g		0.54 mg	0.54 mg	1.5 mg	0.18 mg	2.05
2 g		0.69 mg	0.69 mg	1.1 mg	0.14 mg	2.03
2 g		0.12 mg	0.12 mg	1.1 mg	0.14 mg	2.03
1 g		0.32 mg	0.32 mg	0.9 mg	0.12 mg	2.09

End of Report



Ron Peterson, Metrologist

01/23/2019
Date of Report

United States Department of Commerce
National 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 Echeleon III	Volume Transfer, II
30 kg to 1 mg	5 gal
1000 lb to 0.001 lb	
8 oz to 0.03125 oz	
Weight Carts	
4000 lb to 2000 lb	



2019

Douglas A. Olson

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

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

Note: Reissued certificate with extended date based on continued facility upgrade plans.