



**DEPARTMENT OF COMMERCE**  
**WEIGHTS & MEASURES DIVISION**

14305 Southcross Drive #150  
Burnsville, MN 55306-7008  
mn.gov/commerce/  
651.539.1555 FAX 952.435.4040  
An equal opportunity employer

Receipt Date: January 19, 2018  
Cal. Date: February 14, 2018  
Report Date: February 14, 2018

Report No.: 338797  
Set Serial No.: 2J9S  
Barcode: 202094

**Calibration Certificate**

**NORTH COUNTRY BUSINESS PRODUCTS**  
2127 S MINNESOTA AVE #205  
SIOUX FALLS, SD 57105  
Contact: TERI KAVA  
Phone: 701-277-3231  
PO Number: None  
Procedure: NIST SOP 8  
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.5 °C  
Pressure: 732.3 mmHg  
Relative Humidity: 50.9 %



Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
10 lb	A	144	144	F	F	2.03	11
10 lb	B	176	176	F	F	2.03	11
5 lb		76.2	76.2	F	F	2.03	5.7
1 lb		21.0	21.0	F	F	2.03	1.2
1 lb	.	22.6	22.6	F	F	2.03	1.2
1 lb	B	20.4	20.4	F	F	2.03	1.2
1 lb	D	27.2	27.2	F	F	2.03	1.2
1 lb	E	28.1	28.1	F	F	2.03	1.2
4 oz	A	7.55	7.55	F	F	2.00	0.33
4 oz	B	5.70	5.70	F	F	2.00	0.33
4 oz	C	8.62	8.62	F	F	2.00	0.33
1 oz	A	0.09	0.09	F	F	2.00	0.11
1 oz	B	1.30	1.30	F	F	2.00	0.11
1 oz	C	1.30	1.30	F	F	2.00	0.11
1/2 oz		1.013	1.013	F	F	2.00	0.082
1/2 oz		1.238	1.238	F	F	2.00	0.082
1/4 oz		0.778	0.778	F	F	2.00	0.051
1/4 oz		1.054	1.054	F	F	2.00	0.051

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 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 items identified in this report only.

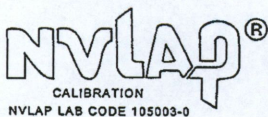
Erik Alfvin

Metrologist

Reviewed by:

Heidi Jones

Laboratory Administrator



Accredited by the National Voluntary Laboratory under lab code 105003-0. This report may not be reproduced by any government agency, and may not be reproduced

4 WM-17-427 Filed: 3/21/2018 Pages: 4  
Calibration Report

Receipt Date: February 1, 2018  
Cal. Date: February 28, 2018  
Report Date: February 28, 2018

Report No.: 338886  
Set Serial No.: NONE  
Barcode: 201574

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
4624 AMBER VALLEY PKWY S  
FARGO, ND 58104  
Contact: TERI KAVA  
Phone: 701-277-3231  
PO Number: NONE  
Procedure: NIST SOP 8  
Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals & ounces  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.8 °C  
Pressure: 734.6 mmHg  
Relative Humidity: 44.2 %



Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb	A	27.2	27.2	F	F	2.03	5.7
5 lb	B	47.2	47.2	F	F	2.03	5.7
5 lb	C	50.2	50.2	F	F	2.03	5.7
5 lb	D	56.2	56.2	F	F	2.03	5.7
5 lb	E	41.2	41.2	F	F	2.03	5.7
1 lb	A	26.0	26.0	F	F	2.03	1.2
1 lb	B	15.4	15.4	F	F	2.03	1.2
1 lb	C	16.8	16.8	F	F	2.03	1.2
1 lb	D	12.3	12.3	F	F	2.03	1.2
1 lb	E	13.0	13.0	F	F	2.03	1.2
0.2 lb		6.79	6.79	F	F	2.03	0.22
0.2 lb		7.08	7.08	F	F	2.03	0.22
0.1 lb		1.81	1.81	F	F	2.03	0.14
0.05 lb		0.33	0.33	F	F	2.03	0.10
0.02 lb		0.282	0.282	F	F	2.03	0.056
0.02 lb		0.300	0.300	F	F	2.03	0.056
0.01 lb		0.591	0.591	F	F	2.03	0.043
0.005 lb		0.579	0.579	F	F	2.03	0.041
0.002 lb		0.204	0.204	F	F	2.03	0.030
0.002 lb		0.557	0.557	F	F	2.03	0.030
0.001 lb		0.250	0.250	F	F	2.03	0.025



**DEPARTMENT OF COMMERCE**  
**WEIGHTS & MEASURES DIVISION**

14305 Southcross Drive #150  
Burnsville, MN 55306-7008  
mn.gov/commerce/  
651.539.1555 FAX 952.435.4040  
An equal opportunity employer

Receipt Date: February 1, 2018  
Cal. Date: February 28, 2018  
Report Date: February 28, 2018

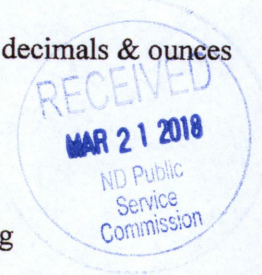
Report No.: 338886  
Set Serial No.: NONE  
Barcode: 201574

Continued,

**Calibration Certificate**

NORTH COUNTRY BUSINESS PRODUCTS  
4624 AMBER VALLEY PKWY S  
FARGO, ND 58104  
Contact: TERI KAVA  
Phone: 701-277-3231  
PO Number: NONE  
Procedure: NIST SOP 8  
Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals & ounces  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.8 °C  
Pressure: 734.6 mmHg  
Relative Humidity: 44.2 %

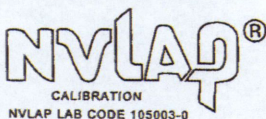


Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
8 oz		6.30	6.30	F	F	2.03	0.69
4 oz		3.79	3.79	F	F	2.00	0.33
2 oz		2.81	2.81	F	F	2.00	0.16
1 oz		2.22	2.22	F	F	2.00	0.11
1/2 oz		0.910	0.910	F	F	2.00	0.082
1/4 oz		0.479	0.479	F	F	2.00	0.051
1/8 oz		0.364	0.364	F	F	2.00	0.038
1/16 oz		0.436	0.436	F	F	2.00	0.032
1/32 oz		0.303	0.303	F	F	2.00	0.021
1/32 . oz		0.282	0.282	F	F	2.00	0.021

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 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 items identified in this report only.

Heidi Jones  
*Heidi Jones*  
Laboratory Administrator

Reviewed by:  
Pete Whebbe  
*Pete Whebbe*  
Metrologist



Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under lab code 105003-0. This report may not be used to claim product endorsement by NVLAP or any other government agency, and may not be reproduced, except in full, without written approval from the laboratory.

# 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.

### Scope

<b>Mass Echelon I</b>	<b>Mass Echelon III</b>	<b>Volume Gravimetric, I</b>
20 kg to 1 mg	50 kg to 1 mg	20 L to 10 ml
50 lb to 0.001 lb	5000 lb to 0.001 lb	100 gal to 0.25 gal
<b>Mass Echelon II</b>	4 oz to 0.03125 oz	<b>Volume Transfer, II</b>
20 kg to 1 mg	<b>Weight Carts</b>	1500 gal to 5 gal
1000 lb to 500 lb	10 000 lb to 2000 lb	200 gal to 25 gal LPG
50 lb to 0.001 lb	<b>Wheel Load Weighers</b>	
4 oz to 0.03125 oz	20 000 lb to 2000 lb	
	<b>Railroad Test Cars</b>	
	110 000 lb to 80 000 lb	

2018 to 2019



*Douglas A. Olson*

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

Effective Dates: 2018-01-01 to 2019-12-31