

# Certificate of Mass Calibration

Metrology Laboratory  
 Bureau of Weights and Measures  
 2801 North Cooke Street  
 Helena, MT 59601  
 Phone: (406) 449-2582



**Company Name and Address**

Todd Rather  
 Rocky Mountain Scale Works  
 2935 Stockyard Road, Suite M3  
 Missoula, MT 59808  
 (406) 543-5181

**Test Number**

**2017-090**

Artifacts Arrived: 7/10/2017  
 Test Date: 7/10/2017  
 Expiration Date: 7/10/2019

**Environmental Conditions at Time of Test:**

Temperature °C		Pressure mmHg	Relative Humidity %	
Start	End	Duration of Test	Start	End
22.3	23.4	664.0	41.2	42.5

**Standards and Procedures used for testing:**

The Standards used for this comparison are continuously monitored by a measurement control program for ensuring continued accuracy and traceability within the level of uncertainty reported. These standards were calibrated by a nationally accredited laboratory on 10/2009 (Reports on File) and are traceable to the SI. The test number listed above is traceable to National Standards through an unbroken chain of comparison each having stated uncertainties. This information is on file and available upon request.

**Uncertainty Statement:**

The combined standard uncertainty includes the uncertainty reported for the standard(s), the uncertainty associated with the measurement process, the uncertainty associated with the allowable sensitivity error, the uncertainty associated with the allowable drift error, the uncertainty associated with drift of the standard over time, and the uncertainty associated with the uncorrected magnitude of air buoyancy. No other uncertainty components were included. The combined standard uncertainty is multiplied by a coverage factor (k) to yield 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 JCGM 100:2008 Guide to the Expression of Uncertainty in Measurement (GUM) and follows NISTIR 6969, SOP29, 2014. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

**Evidence of Metrological Traceability:**

The measurements used for determining the results appearing in this report have metrological traceability to the National Institute of Standards and Technology (NIST), as supported by calibration data on file. Further, the measurements were found to be in control as evidenced by the data collected during the measurement assurance process established for this procedure. This process is part of a comprehensive measurement assurance program for ensuring continued accuracy and metrological traceability within the level of uncertainty reported by this laboratory.

**Note:**

Conversion factors for metrological traceability to the International System of Units (SI) are from NIST Special Publication 811: 2008 Edition "Guide for the Use of the International System of Units (SI)".

<b>To Convert From:</b>	<b>To:</b>	<b>Multiply By:</b>
Pound (avoirdupois) (lb)	Kilogram (kg)	4.535924 E-01



**General Conditions/Notes:**

- ① The State of Montana Metrology Laboratory complies with the requirements of NIST Handbook 143, April 2007 for Echelon III Mass testing.
- ② The laboratory is maintained with-in established limits for the Standard Operating Procedure (SOP) specified on this report. Tests are not conducted when conditions deviate from those specified.
- ③ The data in this report only applies to the items specifically listed on this report.
- ④ This report may not be reproduced, except in full, without the written approval of the State of Montana Metrology Laboratory.
- ⑤ This report may not be used to claim endorsement by NIST or any agency of the U.S. Government.
- ⑥ Any declaration of expiration is at the written request of the device owner.

*David Fraser*

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State Metrologist

7/10/2017

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Date

**END OF REPORT**

2017-090

# United States Department of Commerce

## National Institute of Standards and Technology

Certificate of Metrological Traceability For:

# Montana

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.

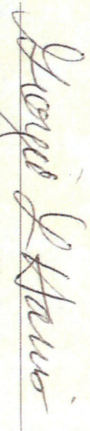
The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

### Scope

Mass Echelon III	Volume Transfer, II
30 kg to 1 mg	1500 gal to 5 gal
3000 lb to 0.001 lb	100 gal to 25 gal LPG
8 oz to 0.03125 oz	
Weight Carts	
5000 lb to 2000 lb	



2017

  
Georgia L. Harris, Acting Chief  
NIST Office of Weights and Measures

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