

Alaska Scientific Crime Detection Laboratory

Controlled Substances Estimate of the Uncertainty of Measurement

Issued: 12/18/2013

Mettler Toledo MS16001L balances

The Controlled Substances discipline weighed check standards on all Mettler Toledo MS16001L model balances utilized in casework. This process occurred from October 15, 2013 through November 1, 2013.

The ASCLD/LAB-*International* Guidance on Estimation of Measurement Uncertainty – ANNEX B (AL-PD-3063 Ver 1.0) was used as a template when writing this measurement uncertainty report.

Test Method Information

- All analysts performing casework participated utilizing the Mettler Toledo MS16001L model balances. In addition three other laboratory members (Chemistry supervisor, Chemistry Forensic Technician, another analyst that currently performs blood alcohol analysis) participated in the test method.
- Gross weights were measured using various types of weighing containers available in the laboratory.
- Both dynamic and static weighing methods (as defined by SWGDRUG) were allowed.

Each person obtained weights of four check standards during various times of the day for the study period. This information was recorded in a document titled "Check Standard Calculations." The data is also included at the end of this report.

Note: Regardless of the number of digits that are shown in a cell, Excel carries the maximum number of digits in the background and will use the entire number for further calculations. All calculations shown in this report are taken from calculations made in Excel.

Measurement Traceability

The traceability for this measurement process is established through the calibration of the measuring equipment, the balance, and through the mass reference standards used to confirm the continued calibration status of the balance.

- The external calibration of all balances is performed by a calibration laboratory (Alaska Metrology and Calibration Services) that meets Section 3.2.3 of the ASCLD/LAB Policy on Measurement Traceability
- The mass reference standards are calibrated by external calibration laboratories (Quality Control Services and/or Troemner) that meet Section 3.2.3 of the ASCLD/LAB Policy on Measurement Traceability.

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Measurement Assurance

- The laboratory performs intermediate checks to maintain confidence in the calibration status of the balances during the interval between external calibrations. These checks are carried out according to a defined schedule and procedure listed in the Controlled Substances Analysis Manual.
 - o The calibration status checks are performed using calibrated mass reference standards
- Data is available from both an initial study and ongoing quality control that evaluates the variation in the measurement process using a check standard surrogate. All case working analysts participate. All Mettler Toledo MS16001L balances are used as are all methods of weighing allowed by the test method procedure. Check standards initially tested were powder, plant material, tablets, and liquid all packaged for stability. Upon review of the initial data, it was decided that powder was to be used as the check standard for ongoing quality control.

NIST 8-Step Process for Estimating and Reporting Measurement Uncertainty

Step 1: Specify the measurement process

The procedure for this measurement process is described in the Controlled Substances Analysis Manual in the Quantity Determination section.

Weight Determination

- The Mettler Toledo MS16001L balances have a readability of 0.1 gram
- The allowable range of measurement for the Mettler Toledo MS16001L balances is defined by the laboratory in the Controlled Substances Analysis Manual in the Quantity Determination section.

A single measurement is made.

The measurement of weight is not made directly. Weight is determined through a functional relationship based on the amount of force on the balance. The functional relationship can be expressed by the mathematical equation:

$$y = mx + b \pm U$$

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Where,

y = the measurement result

m = slope or sensitivity of the measurement instrument linearity

x = the indication

b = bias

U = expanded uncertainty

Step 2: Identify uncertainty components

List of uncertainty components considered:

- Measuring Equipment – Mettler Toledo MS16001L Balance
 - o Display resolution – impact of rounding at zero and at load on the value displayed
 - o Multiple equipment of the same model
 - o Balance calibration uncertainty
 - o Balance linearity
 - o Balance bias
 - Calibrated mass reference standards used for this evaluation
 - o Temperature coefficient of sensitivity
- Staff
 - o Multiple Analysts
 - o Training
 - o Experience
- Test Method
 - o Differences in centering of measurand on the balance
 - o The buoyant effect of weighing the measurand in air
- Facility
 - o Temperature variation of laboratory and difference from the temperature during calibration
 - o Drafts – air flow in the laboratory are of the balance
 - o Location of balances in the laboratory building
 - o Vibration
 - o Humidity
 - o Static electricity

Note: Residual sample not transferred to the weighing vessel during the performance of the test method to obtain a weight is not included as a component of uncertainty in the measurement.

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Step 3: Quantify uncertainty components

The laboratory has existing data from the measurement process. A check standard surrogate has been measured by all analysts using all Mettler Toledo MS16001L balances and various weighing methods. Measurements were made at differing times of the work day on every work day for approximately three weeks before statistics were calculated. This process continues on an ongoing basis to monitor measurement uncertainty.

The table below lists each uncertainty component considered and how it will be evaluated.

Uncertainty Component	Method of Evaluation
Measuring Equipment - balance	
Display Resolution - impact of rounding at zero and at load on the value displayed	Type B Evaluation
Multiple equipment of the same model	Type A - Check standard reproducibility data
Balance calibration uncertainty	Type B Evaluation
Balance linearity	Type B Evaluation
Temperature coefficient of sensitivity	Type B Evaluation
Balance Bias	Calibrated reference standards used to evaluate bias
Staff	
Multiple analysts	Type A - Check standard reproducibility data
Training	Type A - Check standard reproducibility data
Experience	Type A - Check standard reproducibility data
Test Method	
Differences in centering of measurand on the balance	Type A - Check standard reproducibility data
The buoyant effect of weighing the measurand in air	Type B Evaluation

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Facility	
Location	The location of the equipment has not been altered since the external calibration; covered by the calibration uncertainty
Temperature variation	Type A - Check standard reproducibility data
Air flow	Type A - Check standard reproducibility data
Vibration	Type A - Check standard reproducibility data
Humidity	Type A - Check standard reproducibility data
Static Electricity	Type A - Check standard reproducibility data

Type A – Check standard reproducibility data

An initial study involving the measurement of check standards once a day every work day by each analyst on either of the two Mettler Toledo MS16001L balances for three weeks was conducted. Various weighing vessels were used. Both taring methods (tare/remove vessel and tare/don't remove vessel) were used. The powder check standard reproducibility data was chosen to be used for Type A evaluation of uncertainty. The standard deviation of 91 measurements of the powder check standard was:

$$SD = 0.10 \text{ g}$$

Calculations performed:

Standard deviation of tablet check standard data:

$$SD = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n - 1}}$$

Type B – Display resolution – rounding at zero and at load

The display resolution of the large balances is 0.1 g at both zero and load. Because rounding automatically occurs at both zero (taring) and at load, two components will be included. Each is equal to one half of the display resolution.

$$\text{Read}_{\text{zero}} = \text{Read}_{\text{load}} = 0.05 \text{ g}$$

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Type B – Balance Calibration Uncertainty

A review of the accredited external calibration laboratory's scope of accreditation document indicates that their analytical balance calibration uncertainty is 0.7 mg.

$$\text{Cal} = 0.0007 \text{ g}$$

Type B – Balance Linearity

The laboratory's performance criteria when evaluating the continued calibration status of each balance is a reading of $\pm 0.2 \text{ g}$ of the calibrated mass reference standard used.

$$\text{Lin} = 0.2 \text{ g}$$

Type B – Temperature coefficient of sensitivity

The balances automatically perform internal calibrations that assist in keeping the balance performing accurately in a changing environment. The laboratory also evaluates the calibration status of each balance to ensure performance criteria are met. Any variation due to environmental conditions that are within the balances' performance criteria will be included in the Type A check standard reproducibility data.

Type B – The buoyant effect of weighing the measurand in air

The SWGDRUG Supplemental Document SD-3 for Part IVC – Quality Assurance/Uncertainty Measurement Uncertainty for Weight Determinations in Seized Drug Analysis states,

“Buoyancy is difficult to account for in seized drug cases because the density of the material being weighed must be known. However, for material that has a lower density than the steel calibration weights (8.0 g/cm^3) the bias imparted is always negative and the weight displayed by the balance will be less than the true weight of the material. Ignoring buoyancy contributes a small systematic error that represents no more than 0.1% bias to the weight. Therefore, buoyancy corrections are not made in any uncertainty computations shown in this document (SD-3).”

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Step 4: Convert quantities to standard uncertainties

Type A – Check standard reproducibility data

The standard deviation of the reproducibility data will be used without further calculations.

$$SD = 0.10 \text{ g}$$

Type B – Display resolution – rounding at zero and at load

This component is treated as a rectangular distribution

$$\text{Read}_{\text{zero}} = \text{Read}_{\text{load}} = \frac{0.05 \text{ g}}{\sqrt{3}} = 0.03 \text{ g}$$

Type B – Balance Calibration Uncertainty

The balance calibration uncertainty is already reported as a standard uncertainty. No conversions are needed.

$$\text{Cal} = 0.0007 \text{ g}$$

Type B – Balance Linearity

This component is treated as a rectangular distribution

$$\text{Lin} = \frac{0.2 \text{ g}}{\sqrt{3}} = 0.12 \text{ g}$$

Step 5: Calculate the combined standard uncertainty

The Root Sum of the Squares formula will be used to calculate the combined uncertainty.

$$\text{Combined Std. Uncertainty} = \sqrt{SD^2 + \text{Read}_{\text{zero}}^2 + \text{Read}_{\text{load}}^2 + \text{Cal}^2 + \text{Lin}^2}$$

$$\text{Combined Standard Uncertainty} = \pm 0.158 \text{ g}$$

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Step 5: Calculate the combined uncertainty continued – evaluation of bias

Calibrated mass reference standards at the lower and upper limits of the balance's measuring range were measured five times per day for five days on each bench balance by each analyst. Bias will be evaluated by comparing the calculated bias from these measurements to the expanded combined standard uncertainty ($k=2$). Any observed bias will be viewed as insignificant by the laboratory if:

$$\text{bias} < 2 \times \text{Combined Standard Uncertainty}$$

where,

$$\text{bias} = \bar{x}_{\text{lab}} - \bar{x}_{\text{ref}}$$

The results of these bias calculations for each reference standard were:

$$\text{Bias (10.0 g)} = 0.0 \text{ g}$$

$$\text{Bias (20.0 g)} = 0.0 \text{ g}$$

$$\text{Bias (50.0 g)} = 0.0 \text{ g}$$

$$\text{Bias (6000.0 g)} = 0.0 \text{ g}$$

$$\text{Bias (7000.0 g)} = 0.0 \text{ g}$$

$$\text{Bias (8000.0 g)} = 0.0 \text{ g}$$

Compared to the expanded combined standard uncertainty of:

$$\text{Expanded Combined Standard Uncertainty} = \pm 0.316 \text{ g}$$

these biases are considered insignificant. However, the uncertainty in the reference values of these standards will be added to the combined standard uncertainty. The largest calibration expanded uncertainty reported for the reference values used was $\pm 2.5 \text{ mg}$ ($k=2$) for the 5000.0 g standard. This will be converted to standard uncertainty by dividing by the coverage factor:

$$\text{Ref} = \frac{0.0025 \text{ g}}{2} = 0.00125 \text{ g}$$

$$\text{Combined Std. Uncertainty} = \sqrt{SD^2 + \text{Read}_{\text{zero}}^2 + \text{Read}_{\text{load}}^2 + \text{Cal}^2 + \text{Lin}^2 + \text{Ref}^2}$$

$$\text{Combined Standard Uncertainty} = \pm 0.158 \text{ g}$$

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Step 6: Expand the combined standard uncertainty by coverage factor (k)

The combined standard uncertainty will be expanded to a 95% coverage probability (coverage factor $k = 2$):

$$\text{Expanded Combined Standard Uncertainty (k=2)} = \pm 0.316 \text{ g}$$

Step 7: Evaluate the expanded uncertainty

The distribution of data from the check standards and calibrated mass reference standards confirm that the mean ± 0.3 g covers approximately 95% of measurements made.

The root sum of squares formula will be used to determine the uncertainty of a combined net weight calculation where N items are weighed and their sum is reported.

$$\text{Combined Net Wt. Uncertainty} = \sqrt{u_1^2 + u_2^2 + \dots + u_N^2}$$

Given that the individual measurements are all made on the same balance, each of their uncertainties will be equal.

$$\text{Combined Net Wt. Uncertainty} = \sqrt{N \times u^2}$$

$$\text{Combined Net Wt. Uncertainty} = u \times \sqrt{N}$$

This will be applied when weight by difference or weight by summation is performed. If the value obtained from the \sqrt{N} is greater than the readability of the balance utilized, the value will be rounded to the readability of the balance. The value will be rounded up at a 5 or higher and rounded down at a 4 or lower.

Step 8: Report the uncertainty

The expanded combined standard uncertainty rounded to 1 significant figure is:

$$\text{Expanded Combined Standard Uncertainty} = \pm 0.3 \text{ g}$$

The measurement result and the expanded uncertainty will be reported in the same units. The laboratory will report the weight with the expanded uncertainty in the following format.

Cocaine, net weight 0.5 gram \pm 0.3 gram.

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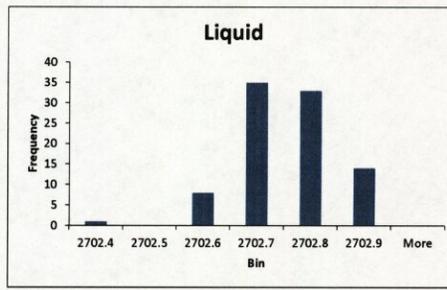
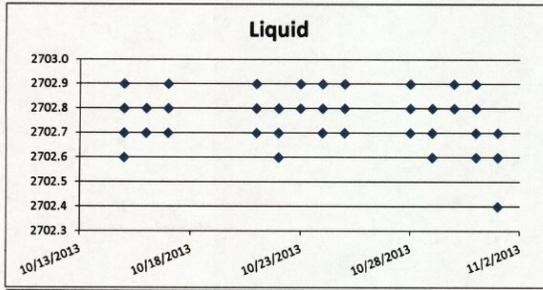
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The coverage probability used to expand the uncertainty will also be reported on the bottom of each report in the following format.

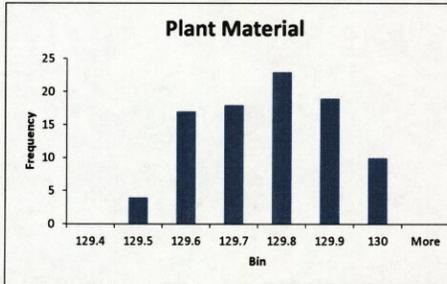
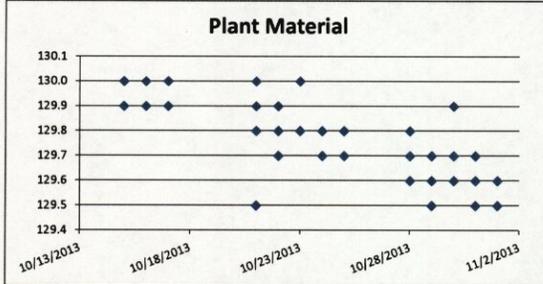
The weight(s) listed above include the estimated measurement uncertainty at an expanded coverage probability of 95%.

Check Standard Calculations

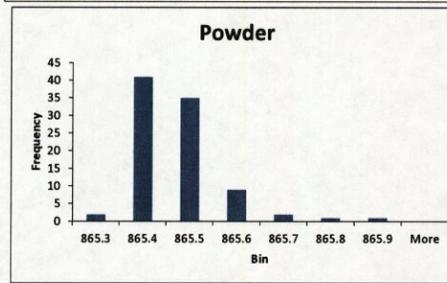
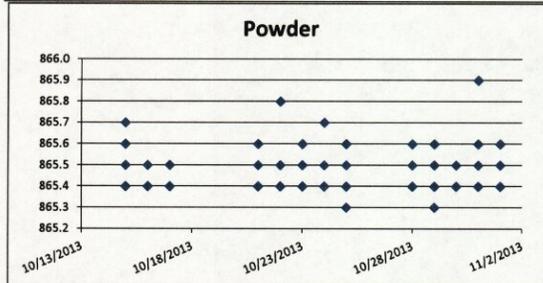
Material	N	Mean	SD
Liquid	91	2702.8	0.09
Plant Material	91	129.8	0.14
Powder	91	865.5	0.10
Tablets	91	1402.9	0.13



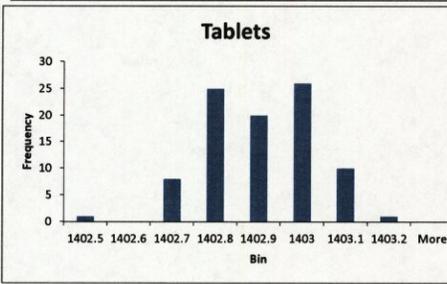
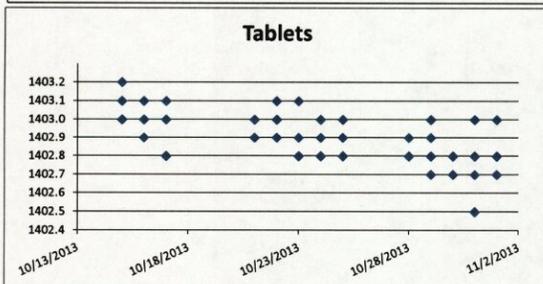
Bin	Frequency	%
2702.4	1	1.1
2702.5	0	0.0
2702.6	8	8.8
2702.7	35	38.5
2702.8	33	36.3
2702.9	14	15.4
More	0	0.0



Bin	Frequency	%
129.4	0	0.0
129.5	4	4.4
129.6	17	18.7
129.7	18	19.8
129.8	23	25.3
129.9	19	20.9
130	10	11.0
More	0	0.0



Bin	Frequency	%
865.3	2	2.2
865.4	41	45.1
865.5	35	38.5
865.6	9	9.9
865.7	2	2.2
865.8	1	1.1
865.9	1	1.1
More	0	0.0



Bin	Frequency	%
1402.5	1	1.1
1402.6	0	0.0
1402.7	8	8.8
1402.8	25	27.5
1402.9	20	22.0
1403	26	28.6
1403.1	10	11.0
1403.2	1	1.1
More	0	0.0

Check Standard Calculations

<u>Analyst</u>	<u>Date</u>	<u>Time of Day</u>	<u>Balance ID</u>	<u>Material</u>	<u>Weigh Container</u>	<u>Weigh Method</u>	<u>Weight (grams)</u>
Jack	10/15/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.9
Jack	10/15/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
Nikki	10/15/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
Nita	10/15/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.8
Chuck	10/15/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.7
Sam	10/15/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.6
Brandi	10/15/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/15/2013	Afternoon	Styx	Liquid	None	Tare, don't remove	2702.6
Ashley	10/15/2013	Afternoon	Greed	Liquid	None	Tare, don't remove	2702.9
Brandi	10/16/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
John	10/16/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
Jack	10/16/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Sam	10/16/2013	Morning	Styx	Liquid	Metal Bowl (large)	Tare, don't remove	2702.7
Chuck	10/16/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Jack	10/16/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Ashley	10/16/2013	Mid-Day	Greed	Liquid	Metal Bowl (large)	Tare, remove	2702.7
Nikki	10/16/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Nita	10/16/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Brandi	10/17/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Ashley	10/17/2013	Morning	Styx	Liquid	Pie Tin (large)	Tare, don't remove	2702.8
John	10/17/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.9
Nikki	10/17/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Chuck	10/17/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, don't remove	2702.8
Sam	10/17/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, remove	2702.9
Jack	10/21/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
Nikki	10/21/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Brandi	10/21/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Nita	10/21/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/21/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Sam	10/21/2013	Afternoon	Styx	Liquid	Pie Tin (large)	Tare, remove	2702.7
Chuck	10/21/2013	Afternoon	Styx	Liquid	None	Tare, don't remove	2702.8
Ashley	10/21/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, don't remove	2702.8
Sam	10/22/2013	Morning	Styx	Liquid	Metal Bowl (large)	Tare, don't remove	2702.7
Jack	10/22/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
Nikki	10/22/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
John	10/22/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.7
Brandi	10/22/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Ashley	10/22/2013	Mid-Day	Styx	Liquid	Metal Bowl (large)	Tare, remove	2702.6
Nita	10/22/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Chuck	10/22/2013	Afternoon	Greed	Liquid	None	Tare, don't remove	2702.7
Jack	10/23/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/23/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.8
Chuck	10/23/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.9
Brandi	10/23/2013	Afternoon	Styx	Liquid	None	Tare, don't remove	2702.8
Sam	10/24/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Jack	10/24/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
Brandi	10/24/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
John	10/24/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.7
Ashley	10/24/2013	Mid-Day	Styx	Liquid	Pie Tin (large)	Tare, don't remove	2702.8
Chuck	10/24/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, remove	2702.8
Sam	10/25/2013	Morning	Styx	Liquid	Metal Bowl (large)	Tare, remove	2702.7
Ashley	10/25/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
Nita	10/25/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/25/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Nikki	10/25/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Sam	10/25/2013	Afternoon	Styx	Liquid	Pie Tin (large)	Tare, don't remove	2702.8
John	10/28/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.8
Sam	10/28/2013	Morning	Styx	Liquid	Pie Tin (large)	Tare, remove	2702.7
Nikki	10/28/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.9
Colleen	10/28/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.9
Brandi	10/28/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.8
Ashley	10/28/2013	Afternoon	Greed	Liquid	Metal Bowl (large)	Tare, don't remove	2702.8
Brandi	10/29/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Jack	10/29/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
Jack	10/29/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
Nikki	10/29/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/28/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
Colleen	10/29/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.7
Chuck	10/29/2013	Afternoon	Greed	Liquid	Metal Bowl (large)	Tare, don't remove	2702.6

Check Standard Calculations

Ashley	10/29/2013	Afternoon	Styx	Liquid	Pie Tin (large)	Tare, remove	2702.7
Sam	10/29/2013	Afternoon	Greed	Liquid	None	Tare, don't remove	2702.7
Colleen	10/30/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
Jack	10/30/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.8
John	10/30/2013	Mid-Day	Styx	Liquid	None	Tare, don't remove	2702.8
Nikki	10/30/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Chuck	10/30/2013	Afternoon	Styx	Liquid	Pie Tin (large)	Tare, don't remove	2702.9
Ashley	10/30/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, remove	2702.8
Brandi	10/31/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.6
Jack	10/31/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.7
Sam	10/31/2013	Morning	Styx	Liquid	Metal Bowl (large)	Tare, don't remove	2702.8
John	10/31/2013	Mid-Day	Greed	Liquid	None	Tare, don't remove	2702.8
Sam	10/31/2013	Afternoon	Styx	Liquid	None	Tare, don't remove	2702.7
Ashley	10/31/2013	Afternoon	Greed	Liquid	Pie Tin (large)	Tare, remove	2702.9
Colleen	10/31/2013	Afternoon	Greed	Liquid	None	Tare, don't remove	2702.7
Nikki	11/1/2013	Morning	Greed	Liquid	Pie Tin (large)	Tare, don't remove	2702.6
Brandi	11/1/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Brandi	11/1/2013	Morning	Styx	Liquid	None	Tare, don't remove	2702.4
John	11/1/2013	Morning	Greed	Liquid	None	Tare, don't remove	2702.7
Sam	11/1/2013	Mid-Day	Styx	Liquid	Metal Bowl (large)	Tare, don't remove	2702.6
Chuck	11/1/2013	Afternoon	Greed	Liquid	None	Tare, don't remove	2702.6
Ashley	11/1/2013	Afternoon	Styx	Liquid	Pie Tin (large)	Tare, remove	2702.7
Jack	10/15/2013	Morning	Styx	Plant Material	None	Tare, don't remove	130.0
Jack	10/15/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.9
Nikki	10/15/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.9
Nita	10/15/2013	Morning	Styx	Plant Material	Metal Bowl (large)	Tare, don't remove	130.0
Chuck	10/15/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.9
Sam	10/15/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	130.0
Brandi	10/15/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.9
John	10/15/2013	Afternoon	Styx	Plant Material	None	Tare, don't remove	129.9
Ashley	10/15/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.9
Brandi	10/16/2013	Morning	Styx	Plant Material	None	Tare, don't remove	130.0
John	10/16/2013	Morning	Greed	Plant Material	None	Tare, don't remove	130.0
Jack	10/16/2013	Morning	Greed	Plant Material	None	Tare, don't remove	130.0
Sam	10/16/2013	Morning	Styx	Plant Material	Metal Bowl (large)	Tare, don't remove	129.9
Chuck	10/16/2013	Mid-Day	Styx	Plant Material	Metal Bowl (large)	Tare, remove	130.0
Jack	10/16/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.9
Ashley	10/16/2013	Mid-Day	Greed	Plant Material	Metal Bowl (large)	Tare, remove	129.9
Nikki	10/16/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.9
Nita	10/16/2013	Mid-Day	Greed	Plant Material	Metal Bowl (large)	Tare, don't remove	129.9
Brandi	10/17/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.9
Ashley	10/17/2013	Morning	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.9
John	10/17/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	130.0
Nikki	10/17/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.9
Chuck	10/17/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.9
Sam	10/17/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.9
Jack	10/21/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.9
Nikki	10/21/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.8
Brandi	10/21/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.5
Nita	10/21/2013	Mid-Day	Greed	Plant Material	Metal Bowl (large)	Tare, don't remove	129.8
John	10/21/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.8
Sam	10/21/2013	Afternoon	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.8
Chuck	10/21/2013	Afternoon	Styx	Plant Material	None	Tare, don't remove	129.8
Ashley	10/21/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	130.0
Sam	10/22/2013	Morning	Styx	Plant Material	Metal Bowl (large)	Tare, don't remove	129.8
Jack	10/22/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.8
Nikki	10/22/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.8
John	10/22/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.7
Brandi	10/22/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.8
Ashley	10/22/2013	Mid-Day	Styx	Plant Material	Metal Bowl (large)	Tare, remove	129.8
Nita	10/22/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.8
Chuck	10/22/2013	Afternoon	Greed	Plant Material	Metal Bowl (large)	Tare, remove	129.9
Jack	10/23/2013	Morning	Greed	Plant Material	None	Tare, don't remove	130.0
John	10/23/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.8
Chuck	10/23/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.8
Brandi	10/23/2013	Afternoon	Styx	Plant Material	None	Tare, don't remove	129.8
Sam	10/24/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.8
Jack	10/24/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.8
Brandi	10/24/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.8
John	10/24/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.8
Ashley	10/24/2013	Mid-Day	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.7

Check Standard Calculations

Chuck	10/24/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.7
Sam	10/25/2013	Morning	Styx	Plant Material	Metal Bowl (large)	Tare, remove	129.8
Ashley	10/25/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.8
Nita	10/25/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.8
John	10/25/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.7
Nikki	10/25/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.7
Sam	10/25/2013	Afternoon	Styx	Plant Material	Pie Tin (large)	Tare, don't remove	129.8
John	10/28/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.7
Sam	10/28/2013	Morning	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.7
Nikki	10/28/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.8
Colleen	10/28/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.7
Brandi	10/28/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.7
Ashley	10/28/2013	Afternoon	Greed	Plant Material	Metal Bowl (large)	Tare, remove	129.6
Brandi	10/29/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.6
Jack	10/29/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.6
Jack	10/29/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.6
Nikki	10/29/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.7
John	10/28/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.6
Colleen	10/29/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.7
Chuck	10/29/2013	Afternoon	Greed	Plant Material	Metal Bowl (large)	Tare, don't remove	129.6
Ashley	10/29/2013	Afternoon	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.5
Sam	10/29/2013	Afternoon	Greed	Plant Material	None	Tare, don't remove	129.6
Colleen	10/30/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.7
Jack	10/30/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.7
John	10/30/2013	Mid-Day	Styx	Plant Material	None	Tare, don't remove	129.7
Nikki	10/30/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.6
Chuck	10/30/2013	Afternoon	Styx	Plant Material	Pie Tin (large)	Tare, don't remove	129.7
Ashley	10/30/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.9
Brandi	10/31/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.5
Jack	10/31/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.6
Sam	10/31/2013	Morning	Styx	Plant Material	Metal Bowl (large)	Tare, don't remove	129.6
John	10/31/2013	Mid-Day	Greed	Plant Material	None	Tare, don't remove	129.7
Sam	10/31/2013	Afternoon	Styx	Plant Material	None	Tare, don't remove	129.7
Ashley	10/31/2013	Afternoon	Greed	Plant Material	Pie Tin (large)	Tare, remove	129.6
Colleen	10/31/2013	Afternoon	Greed	Plant Material	None	Tare, don't remove	129.7
Nikki	11/1/2013	Morning	Greed	Plant Material	Pie Tin (large)	Tare, don't remove	129.6
Brandi	11/1/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.6
Brandi	11/1/2013	Morning	Styx	Plant Material	None	Tare, don't remove	129.6
John	11/1/2013	Morning	Greed	Plant Material	None	Tare, don't remove	129.6
Sam	11/1/2013	Mid-Day	Styx	Plant Material	Metal Bowl (large)	Tare, don't remove	129.6
Chuck	11/1/2013	Afternoon	Greed	Plant Material	None	Tare, don't remove	129.5
Ashley	11/1/2013	Afternoon	Styx	Plant Material	Pie Tin (large)	Tare, remove	129.6
Jack	10/15/2013	Morning	Styx	Powder	None	Tare, don't remove	865.4
Jack	10/15/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Nikki	10/15/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Nita	10/15/2013	Morning	Styx	Powder	Metal Bowl (large)	Tare, don't remove	865.4
Chuck	10/15/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.7
Sam	10/15/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Brandi	10/15/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.6
John	10/15/2013	Afternoon	Styx	Powder	None	Tare, don't remove	865.5
Ashley	10/15/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.5
Brandi	10/16/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
John	10/16/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Jack	10/16/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Sam	10/16/2013	Morning	Styx	Powder	Metal Bowl (large)	Tare, don't remove	865.4
Chuck	10/16/2013	Mid-Day	Styx	Powder	Metal Bowl (large)	Tare, remove	865.5
Jack	10/16/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Ashley	10/16/2013	Mid-Day	Greed	Powder	Metal Bowl (large)	Tare, remove	865.4
Nikki	10/16/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.5
Nita	10/16/2013	Mid-Day	Greed	Powder	Metal Bowl (large)	Tare, don't remove	865.4
Brandi	10/17/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Ashley	10/17/2013	Morning	Styx	Powder	Pie Tin (large)	Tare, remove	865.5
John	10/17/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Nikki	10/17/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Chuck	10/17/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, don't remove	865.4
Sam	10/17/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.4
Jack	10/21/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Nikki	10/21/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Brandi	10/21/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Nita	10/21/2013	Mid-Day	Greed	Powder	Metal Bowl (large)	Tare, don't remove	865.4
John	10/21/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4

Check Standard Calculations

Sam	10/21/2013	Afternoon	Styx	Powder	Pie Tin (large)	Tare, remove	865.5
Chuck	10/21/2013	Afternoon	Styx	Powder	None	Tare, don't remove	865.5
Ashley	10/21/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.6
Sam	10/22/2013	Morning	Styx	Powder	Metal Bowl (large)	Tare, don't remove	865.4
Jack	10/22/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
Nikki	10/22/2013	Morning	Styx	Powder	None	Tare, don't remove	865.4
John	10/22/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.8
Brandi	10/22/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Ashley	10/22/2013	Mid-Day	Styx	Powder	Metal Bowl (large)	Tare, remove	865.5
Nita	10/22/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Chuck	10/22/2013	Afternoon	Greed	Powder	Metal Bowl (large)	Tare, remove	865.5
Jack	10/23/2013	Morning	Greed	Powder	None	Tare, don't remove	865.6
John	10/23/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
Chuck	10/23/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.5
Brandi	10/23/2013	Afternoon	Styx	Powder	None	Tare, don't remove	865.4
Sam	10/24/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Jack	10/24/2013	Morning	Styx	Powder	None	Tare, don't remove	865.4
Brandi	10/24/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
John	10/24/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.5
Ashley	10/24/2013	Mid-Day	Styx	Powder	Pie Tin (large)	Tare, remove	865.5
Chuck	10/24/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.7
Sam	10/25/2013	Morning	Styx	Powder	Metal Bowl (large)	Tare, remove	865.4
Ashley	10/25/2013	Morning	Greed	Powder	None	Tare, don't remove	865.6
Nita	10/25/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.5
John	10/25/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.3
Nikki	10/25/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.5
Sam	10/25/2013	Afternoon	Styx	Powder	Pie Tin (large)	Tare, don't remove	865.5
John	10/28/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
Sam	10/28/2013	Morning	Styx	Powder	Pie Tin (large)	Tare, remove	865.4
Nikki	10/28/2013	Morning	Styx	Powder	None	Tare, don't remove	865.4
Colleen	10/28/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Brandi	10/28/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Ashley	10/28/2013	Afternoon	Greed	Powder	Metal Bowl (large)	Tare, remove	865.6
Brandi	10/29/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Jack	10/29/2013	Morning	Greed	Powder	None	Tare, don't remove	865.6
Jack	10/29/2013	Morning	Styx	Powder	None	Tare, don't remove	865.4
Nikki	10/29/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
John	10/28/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Colleen	10/29/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.5
Chuck	10/29/2013	Afternoon	Greed	Powder	Metal Bowl (large)	Tare, don't remove	865.6
Ashley	10/29/2013	Afternoon	Styx	Powder	Pie Tin (large)	Tare, remove	865.3
Sam	10/29/2013	Afternoon	Greed	Powder	None	Tare, don't remove	865.4
Colleen	10/30/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
Jack	10/30/2013	Morning	Greed	Powder	None	Tare, don't remove	865.5
John	10/30/2013	Mid-Day	Styx	Powder	None	Tare, don't remove	865.4
Nikki	10/30/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Chuck	10/30/2013	Afternoon	Styx	Powder	Pie Tin (large)	Tare, don't remove	865.4
Ashley	10/30/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.5
Brandi	10/31/2013	Morning	Styx	Powder	None	Tare, don't remove	865.9
Jack	10/31/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
Sam	10/31/2013	Morning	Styx	Powder	Metal Bowl (large)	Tare, don't remove	865.5
John	10/31/2013	Mid-Day	Greed	Powder	None	Tare, don't remove	865.4
Sam	10/31/2013	Afternoon	Styx	Powder	None	Tare, don't remove	865.6
Ashley	10/31/2013	Afternoon	Greed	Powder	Pie Tin (large)	Tare, remove	865.5
Colleen	10/31/2013	Afternoon	Greed	Powder	None	Tare, don't remove	865.4
Nikki	11/1/2013	Morning	Greed	Powder	Pie Tin (large)	Tare, don't remove	865.5
Brandi	11/1/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Brandi	11/1/2013	Morning	Styx	Powder	None	Tare, don't remove	865.5
John	11/1/2013	Morning	Greed	Powder	None	Tare, don't remove	865.4
Sam	11/1/2013	Mid-Day	Styx	Powder	Metal Bowl (large)	Tare, don't remove	865.4
Chuck	11/1/2013	Afternoon	Greed	Powder	None	Tare, don't remove	865.6
Ashley	11/1/2013	Afternoon	Styx	Powder	Pie Tin (large)	Tare, remove	865.5
Jack	10/15/2013	Morning	Styx	Tablets	None	Tare, don't remove	1403.0
Jack	10/15/2013	Morning	Greed	Tablets	None	Tare, don't remove	1403.0
Nikki	10/15/2013	Morning	Greed	Tablets	None	Tare, don't remove	1403.1
Nita	10/15/2013	Morning	Styx	Tablets	Pie Tin (large)	Tare, don't remove	1403.1
Chuck	10/15/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.1
Sam	10/15/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1403.2
Brandi	10/15/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
John	10/15/2013	Afternoon	Styx	Tablets	None	Tare, don't remove	1403.0
Ashley	10/15/2013	Afternoon	Greed	Tablets	Weigh Paper	Tare, don't remove	1403.1

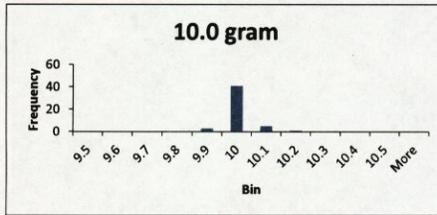
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Brandi	10/16/2013	Morning	Styx	Tablets	None	Tare, don't remove	1403.1
John	10/16/2013	Morning	Greed	Tablets	None	Tare, don't remove	1403.0
Jack	10/16/2013	Morning	Greed	Tablets	None	Tare, don't remove	1403.1
Sam	10/16/2013	Morning	Styx	Tablets	Metal Bowl (large)	Tare, don't remove	1403.0
Chuck	10/16/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1403.0
Jack	10/16/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.9
Ashley	10/16/2013	Mid-Day	Greed	Tablets	Metal Bowl (large)	Tare, remove	1402.9
Nikki	10/16/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1403.0
Nita	10/16/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.1
Brandi	10/17/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
Ashley	10/17/2013	Morning	Styx	Tablets	Pie Tin (large)	Tare, remove	1403.0
John	10/17/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.1
Nikki	10/17/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
Chuck	10/17/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, don't remove	1403.0
Sam	10/17/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, remove	1403.0
Jack	10/21/2013	Morning	Greed	Tablets	None	Tare, don't remove	1403.0
Nikki	10/21/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
Brandi	10/21/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.9
Nita	10/21/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
John	10/21/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1403.0
Sam	10/21/2013	Afternoon	Styx	Tablets	Pie Tin (large)	Tare, remove	1402.9
Chuck	10/21/2013	Afternoon	Styx	Tablets	None	Tare, don't remove	1402.9
Ashley	10/21/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, don't remove	1403.0
Sam	10/22/2013	Morning	Styx	Tablets	Metal Bowl (large)	Tare, don't remove	1402.9
Jack	10/22/2013	Morning	Styx	Tablets	None	Tare, don't remove	1403.0
Nikki	10/22/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.9
John	10/22/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.1
Brandi	10/22/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
Ashley	10/22/2013	Mid-Day	Styx	Tablets	Metal Bowl (large)	Tare, remove	1402.9
Nita	10/22/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.9
Chuck	10/22/2013	Afternoon	Greed	Tablets	Metal Bowl (large)	Tare, remove	1403.0
Jack	10/23/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.9
John	10/23/2013	Morning	Styx	Tablets	None	Tare, don't remove	1403.1
Chuck	10/23/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.8
Brandi	10/23/2013	Afternoon	Styx	Tablets	None	Tare, don't remove	1402.8
Sam	10/24/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.9
Jack	10/24/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.9
Brandi	10/24/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
John	10/24/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1403.0
Ashley	10/24/2013	Mid-Day	Styx	Tablets	Pie Tin (large)	Tare, remove	1402.9
Chuck	10/24/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, remove	1403.0
Sam	10/25/2013	Morning	Styx	Tablets	Metal Bowl (large)	Tare, remove	1403.0
Ashley	10/25/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.9
Nita	10/25/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1402.9
John	10/25/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.8
Nikki	10/25/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1402.9
Sam	10/25/2013	Afternoon	Styx	Tablets	Pie Tin (large)	Tare, don't remove	1402.9
John	10/28/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.8
Sam	10/28/2013	Morning	Styx	Tablets	Pie Tin (large)	Tare, remove	1402.8
Nikki	10/28/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.8
Colleen	10/28/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.9
Brandi	10/28/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.8
Ashley	10/28/2013	Afternoon	Greed	Tablets	Metal Bowl (large)	Tare, don't remove	1402.9
Brandi	10/29/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
Jack	10/29/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.9
Jack	10/29/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.8
Nikki	10/29/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
John	10/28/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
Colleen	10/29/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.7
Chuck	10/29/2013	Afternoon	Greed	Tablets	Metal Bowl (large)	Tare, don't remove	1403.0
Ashley	10/29/2013	Afternoon	Styx	Tablets	Pie Tin (large)	Tare, remove	1402.8
Sam	10/29/2013	Afternoon	Greed	Tablets	None	Tare, don't remove	1402.8
Colleen	10/30/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
Jack	10/30/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
John	10/30/2013	Mid-Day	Styx	Tablets	None	Tare, don't remove	1402.8
Nikki	10/30/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1402.8
Chuck	10/30/2013	Afternoon	Styx	Tablets	Pie Tin (large)	Tare, don't remove	1402.8
Ashley	10/30/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, remove	1402.7
Brandi	10/31/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.5
Jack	10/31/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.7
Sam	10/31/2013	Morning	Styx	Tablets	Metal Bowl (large)	Tare, don't remove	1402.8

Check Standard Calculations

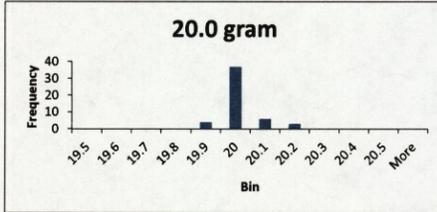
John	10/31/2013	Mid-Day	Greed	Tablets	None	Tare, don't remove	1402.7
Sam	10/31/2013	Afternoon	Styx	Tablets	None	Tare, don't remove	1402.8
Ashley	10/31/2013	Afternoon	Greed	Tablets	Pie Tin (large)	Tare, remove	1402.8
Colleen	10/31/2013	Afternoon	Greed	Tablets	None	Tare, don't remove	1403.0
Nikki	11/1/2013	Morning	Greed	Tablets	Pie Tin (large)	Tare, don't remove	1402.7
Brandi	11/1/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.8
Brandi	11/1/2013	Morning	Styx	Tablets	None	Tare, don't remove	1402.7
John	11/1/2013	Morning	Greed	Tablets	None	Tare, don't remove	1402.7
Sam	11/1/2013	Mid-Day	Styx	Tablets	Metal Bowl (large)	Tare, don't remove	1402.7
Chuck	11/1/2013	Afternoon	Greed	Tablets	None	Tare, don't remove	1403.0
Ashley	11/1/2013	Afternoon	Styx	Tablets	Pie Tin (large)	Tare, remove	1402.8

Bin	Frequency	%
9.5	0	0.0
9.6	0	0.0
9.7	0	0.0
9.8	0	0.0
9.9	3	6.0
10	41	82.0
10.1	5	10.0
10.2	1	2.0
10.3	0	0.0
10.4	0	0.0
10.5	0	0.0
More	0	0.0



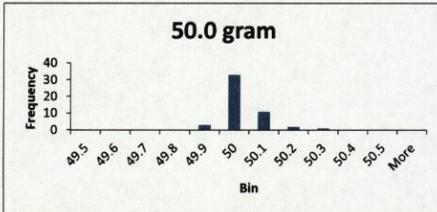
N	50
Mean	10.0
SD	0.05
Target ± 0.3 gram coverage (%):	100.0

Bin	Frequency	%
19.5	0	0.0
19.6	0	0.0
19.7	0	0.0
19.8	0	0.0
19.9	4	8.0
20	37	74.0
20.1	6	12.0
20.2	3	6.0
20.3	0	0.0
20.4	0	0.0
20.5	0	0.0
More	0	0.0



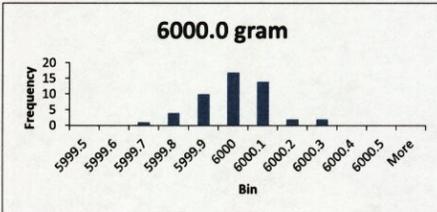
N	50
Mean	20.0
SD	0.07
Target ± 0.3 gram coverage (%):	100.0

Bin	Frequency	%
49.5	0	0.0
49.6	0	0.0
49.7	0	0.0
49.8	0	0.0
49.9	3	6.0
50	33	66.0
50.1	11	22.0
50.2	2	4.0
50.3	1	2.0
50.4	0	0.0
50.5	0	0.0
More	0	0.0



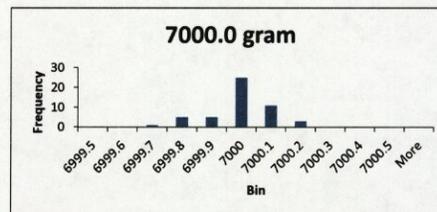
N	50
Mean	50.0
SD	0.07
Target ± 0.3 gram coverage (%):	100.0

Bin	Frequency	%
5999.5	0	0.0
5999.6	0	0.0
5999.7	1	2.0
5999.8	4	8.0
5999.9	10	20.0
6000	17	34.0
6000.1	14	28.0
6000.2	2	4.0
6000.3	2	4.0
6000.4	0	0.0
6000.5	0	0.0
More	0	0.0



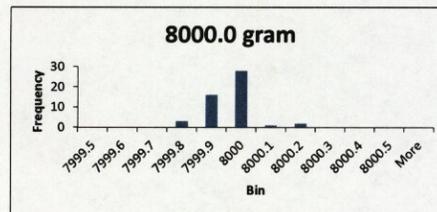
N	50
Mean	6000.0
SD	0.12
Target ± 0.3 gram coverage (%):	100.0

Bin	Frequency	%
6999.5	0	0.0
6999.6	0	0.0
6999.7	1	2.0
6999.8	5	10.0
6999.9	5	10.0
7000	25	50.0
7000.1	11	22.0
7000.2	3	6.0
7000.3	0	0.0
7000.4	0	0.0
7000.5	0	0.0
More	0	0.0



N	50
Mean	7000.0
SD	0.11
Target ± 0.3 gram coverage (%):	100.0

Bin	Frequency	%
7999.5	0	0.0
7999.6	0	0.0
7999.7	0	0.0
7999.8	3	6.0
7999.9	16	32.0
8000	28	56.0
8000.1	1	2.0
8000.2	2	4.0
8000.3	0	0.0
8000.4	0	0.0
8000.5	0	0.0
More	0	0.0



N	50
Mean	8000.0
SD	0.08
Target ± 0.3 gram coverage (%):	100.0

Limit Study Calculations

Balance	Date	Measurement (g)					
Greed	11/4/2013	10.0	20.0	50.0	6000.1	6999.9	7999.9
Greed	11/4/2013	10.0	20.0	50.0	6000.1	7000.0	7999.9
Greed	11/4/2013	10.0	20.0	50.0	6000.1	7000.0	8000.0
Greed	11/4/2013	10.0	20.0	50.0	5999.9	7000.0	8000.1
Greed	11/4/2013	10.0	20.0	50.1	6000.1	7000.0	8000.0
Greed	11/7/2013	10.0	20.0	49.9	5999.9	6999.9	7999.8
Greed	11/7/2013	10.0	20.0	50.0	6000.0	6999.9	7999.9
Greed	11/7/2013	10.0	20.0	50.0	5999.9	7000.0	8000.0
Greed	11/7/2013	10.0	20.0	50.0	5999.9	7000.0	7999.9
Greed	11/7/2013	10.0	20.0	50.0	6000.0	7000.0	7999.9
Greed	11/8/2013	10.0	20.0	50.0	5999.9	7000.0	7999.8
Greed	11/8/2013	10.0	20.0	50.1	5999.7	6999.9	8000.0
Greed	11/8/2013	10.0	20.1	50.1	5999.8	7000.0	8000.0
Greed	11/8/2013	10.0	20.0	50.0	5999.8	6999.8	7999.9
Greed	11/8/2013	9.9	19.9	50.0	6000.0	6999.8	8000.0
Greed	11/12/2013	10.1	19.9	50.0	5999.8	6999.8	8000.0
Greed	11/12/2013	10.0	20.0	50.0	6000.0	6999.7	7999.8
Greed	11/12/2013	10.0	20.0	50.0	6000.2	6999.9	8000.0
Greed	11/12/2013	10.0	20.0	50.0	5999.9	6999.8	8000.0
Greed	11/12/2013	10.0	20.0	50.0	5999.9	6999.8	8000.0
Greed	11/15/2013	10.0	20.1	49.9	6000.1	7000.0	7999.9
Greed	11/15/2013	10.0	20.0	50.0	6000.0	7000.0	8000.0
Greed	11/15/2013	9.9	20.0	50.0	5999.9	7000.0	7999.9
Greed	11/15/2013	10.0	20.0	49.9	6000.1	7000.0	7999.9
Greed	11/15/2013	10.0	20.0	50.0	6000.0	7000.1	7999.9
Styx	11/5/2013	10.0	20.0	50.1	6000.0	7000.0	7999.9
Styx	11/5/2013	10.0	20.0	50.1	6000.1	7000.1	8000.0
Styx	11/5/2013	9.9	20.1	50.2	5999.9	7000.1	8000.0
Styx	11/5/2013	10.0	20.2	50.0	6000.1	7000.0	7999.9
Styx	11/5/2013	10.0	20.0	50.1	6000.0	7000.0	8000.0
Styx	11/6/2013	10.0	20.1	50.2	6000.0	7000.1	8000.0
Styx	11/6/2013	10.0	20.0	50.1	5999.8	7000.2	8000.0
Styx	11/6/2013	10.1	20.0	50.1	6000.1	7000.1	8000.0
Styx	11/6/2013	10.0	20.0	50.0	6000.3	7000.1	8000.0
Styx	11/6/2013	10.0	20.0	50.0	6000.1	7000.0	8000.0
Styx	11/7/2013	10.0	20.1	50.0	6000.0	7000.0	7999.9
Styx	11/7/2013	10.2	20.0	50.1	6000.0	7000.0	8000.0
Styx	11/7/2013	10.1	20.0	50.0	6000.3	7000.1	8000.0
Styx	11/7/2013	10.1	20.2	50.3	6000.2	7000.0	8000.0
Styx	11/7/2013	10.0	20.0	50.1	6000.0	7000.1	8000.0
Styx	11/8/2013	10.0	19.9	50.0	5999.9	7000.0	8000.0
Styx	11/8/2013	10.1	19.9	50.0	6000.0	7000.0	7999.9
Styx	11/8/2013	10.0	20.0	50.0	6000.0	7000.1	8000.0
Styx	11/8/2013	10.0	20.0	50.0	6000.1	7000.0	7999.9
Styx	11/8/2013	10.0	20.0	50.0	6000.0	7000.2	8000.0
Styx	11/13/2013	10.0	20.0	50.0	6000.0	7000.0	8000.2
Styx	11/13/2013	10.0	20.1	50.1	6000.1	7000.1	8000.0
Styx	11/13/2013	10.0	20.2	50.0	6000.1	7000.2	7999.9
Styx	11/13/2013	10.0	20.0	50.0	6000.1	7000.1	8000.2
Styx	11/13/2013	10.0	20.0	50.0	6000.0	7000.0	8000.0