



Analyte PT For All Labs

## Magruder Fertilizer Proficiency Testing Program

# Analytes: 26

Sample # 250111

Regular PT Scheme

# Labs Reporting: 47

11-55-0 MAP

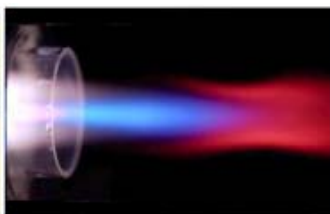
Statistical Summary

Issue Date : 02/28/2025

| Analyte Code | Analyte<br>Sample # 250111    | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Analyte<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Analyte IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|--------------|-------------------------------|----------------------|-----------------------------------|----------|--------|-------------------------------|------------------------|-----------|---------------------------|--------------|------------------|--------------------------|--------------|
| 001          | Ammoniacal N (%)              | 6                    | 6                                 | 11.33    | 0.2439 | 11.33                         |                        | 0.2766    | 0.1411                    | 2.44%        |                  | 0.2089                   | 2.78%        |
| 010          | Total N (11%)                 | 40                   | 39                                | 11.43    | 0.2440 | 11.43                         | 0.6015                 | 0.2311    | 0.0463                    | 2.02%        | 0.90             | 0.1012                   | 2.77%        |
| 020          | Total P2O5 (%)                | 28                   | 26                                | 53.65    | 6.458  | 54.66                         |                        | 1.709     | 0.4189                    | 3.13%        |                  | 0.4159                   | 1.35%        |
| 030          | Citrate Insoluble P2O5 (%)    | 1                    |                                   | 0.0950   |        |                               |                        |           |                           |              |                  |                          |              |
| 040          | Indirect Available P2O5 (55%) | 3                    | 3                                 | 53.70    | 2.271  | 53.70                         | 1.1254                 | 2.271     | 1.639                     | 4.23%        | 4.70             | 0.3967                   | 1.36%        |
| 041          | Direct Available P2O5 (55%)   | 24                   | 23                                | 53.62    | 4.698  | 54.62                         | 1.1424                 | 1.110     | 0.2893                    | 2.03%        | 2.26             | 0.3425                   | 1.35%        |
| 048          | Water Soluble P2O5 (%)        | 3                    | 3                                 | 49.74    | 1.980  | 49.74                         |                        | 1.980     | 1.429                     | 3.98%        |                  | 0.1267                   | 1.42%        |
| 050          | Soluble K2O (%)               | 9                    | 6                                 | 0.5677   | 0.6873 | 0.2887                        | 0.4100                 | 0.0708    | 0.0361                    | 24.52%       | 0.40             | 0.0071                   | 4.82%        |
| 101          | Acid Soluble Ca (%)           | 8                    | 6                                 | 0.2420   | 0.4543 | 0.0969                        | 0.2048                 | 0.1110    | 0.0567                    | 114.64%      | 1.26             | 0.0042                   | 5.68%        |
| 121          | Acid Soluble Mg (%)           | 11                   | 11                                | 0.7847   | 0.1618 | 0.7673                        | 0.2384                 | 0.1187    | 0.0447                    | 15.47%       | 1.16             | 0.0221                   | 4.16%        |
| 148          | Total S (%)                   | 7                    | 5                                 | 1.272    | 0.5889 | 1.384                         | 0.2692                 | 0.2605    | 0.1456                    | 18.82%       | 2.25             | 0.0146                   | 3.81%        |
| 151          | Acid Soluble As (ppm)         | 11                   | 7                                 | 1.685    | 2.243  | 1.013                         |                        | 0.3394    | 0.1604                    | 33.50%       |                  | 0.0967                   | 15.97%       |
| 165          | Acid Soluble B (%)            | 7                    | 5                                 | 0.0076   | 0.0037 | 0.0092                        | 0.0044                 | 0.0017    | 0.0009                    | 18.04%       | 0.88             | 0.0001                   | 8.11%        |
| 181          | Acid Soluble Cd (ppm)         | 13                   | 12                                | 9.107    | 2.358  | 9.118                         |                        | 0.9410    | 0.3396                    | 10.32%       |                  | 0.6083                   | 11.47%       |
| 191          | Acid Soluble Cr (ppm)         | 13                   | 12                                | 210.2    | 55.23  | 215.8                         |                        | 42.82     | 15.45                     | 19.84%       |                  | 3.791                    | 7.12%        |
| 202          | Acid Soluble Co (ppm)         | 10                   | 5                                 | 8.029    | 21.80  | 15.38                         | 5.6148                 | 30.54     | 17.07                     | 198.52%      | 12.67            | 8.312                    | 10.60%       |
| 221          | Acid Soluble Cu (%)           | 13                   | 4                                 | 0.3844   | 1.299  | 1.240                         | 0.1290                 | 2.310     | 1.444                     | 186.23%      | 41.71            | 0.0668                   | 3.87%        |
| 241          | Acid Soluble Fe (%)           | 11                   | 11                                | 0.5291   | 0.1181 | 0.5129                        | 0.0563                 | 0.0631    | 0.0238                    | 12.30%       | 2.61             | 0.0243                   | 4.42%        |
| 251          | Acid Soluble Pb (ppm)         | 10                   | 1                                 | 0.9416   | 1.393  | 0.5129                        |                        | 0.0631    | 0.0788                    | 12.30%       |                  | 0.0000                   | 17.69%       |
| 261          | Acid Soluble Mn (%)           | 9                    | 9                                 | 0.0358   | 0.0712 | 0.0121                        | 0.0062                 | 0.0051    | 0.0021                    | 41.68%       | 1.90             | 0.0053                   | 7.77%        |
| 281          | Acid Soluble Hg (ppm)         | 6                    | 0                                 | 0.4367   | 0.7894 | 0.0121                        |                        | 0.0051    |                           | 41.68%       |                  | 0.0000                   | 22.00%       |
| 289          | Acid Soluble Mo (ppm)         | 10                   | 10                                | 3.665    | 2.154  | 3.324                         | 1.9971                 | 1.506     | 0.5954                    | 45.31%       | 1.76             | 0.6479                   | 13.35%       |
| 291          | Acid Soluble Ni (ppm)         | 12                   | 11                                | 18.32    | 38.89  | 7.247                         |                        | 2.111     | 0.7956                    | 29.13%       |                  | 0.4789                   | 11.87%       |
| 301          | Acid Soluble Se (ppm)         | 9                    | 2                                 | 2.616    | 4.284  | 5.867                         |                        | 6.216     | 5.494                     | 105.96%      |                  | 1.424                    | 12.26%       |
| 311          | Sodium (%)                    | 5                    | 5                                 | 0.3172   | 0.0609 | 0.3172                        | 0.0367                 | 0.0609    | 0.0340                    | 19.19%       | 3.86             | 0.0057                   | 4.75%        |
| 321          | Acid Soluble Zn (%)           | 20                   | 19                                | 30.20    | 134.5  | 0.0479                        | 0.0098                 | 0.0051    | 0.0015                    | 10.61%       | 1.21             | 0.0029                   | 6.32%        |

The Analyte IA Ratio = 2.33 \* Robust SD / IA at the Analyte Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.

|                                   |
|-----------------------------------|
| Horwitz %RSD                      |
| Average Range<br>(R-bar)          |
| Analyte IA Ratio                  |
| Robust % RSD                      |
| Robust<br>Uncertainty (U)         |
| Robust sd                         |
| IA at Analyte<br>Value            |
| Assigned Value<br>Robust Mean     |
| Raw SD                            |
| Raw Mean                          |
| # Tests in Robust<br>Calculations |
| # Tests<br>Submitted              |
| Analyte<br>Sample # 250111        |
| Analyte Code                      |



Analyte PT For All Labs

## Magruder Fertilizer Proficiency Testing Program

# Analytes: 26

Sample # 250111

Regular PT Scheme

# Labs Reporting: 47

11-55-0 MAP

Lab Values

Issue Date : 02/28/2025

| Analyte Group | Analyte (Units)  | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                  |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 001           | Ammoniacal N (%) | 0647     | 11.07    | 0.0286 | 11.33                 | 0.2766 | 0.2089    | 6       | -0.84               | 001.99      | 0    |
| 001           | Ammoniacal N (%) | 0553     | 11.18    | 0.5400 | 11.33                 | 0.2766 | 0.2089    | 6       | -0.48               | 001.99      | 0    |
| 001           | Ammoniacal N (%) | 0220     | 11.19    | 0.0900 | 11.33                 | 0.2766 | 0.2089    | 6       | -0.47               | 001.99      | 0    |
| 001           | Ammoniacal N (%) | 0498     | 11.35    | 0.1000 | 11.33                 | 0.2766 | 0.2089    | 6       | 0.06                | 001.10      | 0    |
| 001           | Ammoniacal N (%) | 0231     | 11.46    | 0.0300 | 11.33                 | 0.2766 | 0.2089    | 6       | 0.40                | 001.10      | 0    |
| 001           | Ammoniacal N (%) | 0027     | 11.74    | 0.4650 | 11.33                 | 0.2766 | 0.2089    | 6       | 1.33                | 001.99      | 0    |
| 010           | Total N (11%)    | 0521     | 10.94    | 0.0000 | 11.43                 | 0.2311 | 0.1012    | 39      | -2.12               | 010.60      | 0    |
| 010           | Total N (11%)    | 0354     | 11.05    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.65               | 010.60      | 0    |
| 010           | Total N (11%)    | 0102     | 11.07    | 0.0300 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.58               | 010.60      | 0    |
| 010           | Total N (11%)    | 0423     | 11.14    | 0.1400 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.26               | 010.60      | 0    |
| 010           | Total N (11%)    | 0324     | 11.15    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.21               | 010.60      | 0    |
| 010           | Total N (11%)    | 0600     | 11.18    | 0.1500 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.11               | 010.99      | 0    |
| 010           | Total N (11%)    | 0653     | 11.19    | 0.0100 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.06               | 010.99      | 0    |
| 010           | Total N (11%)    | 0234     | 11.19    | 0.0900 | 11.43                 | 0.2311 | 0.1012    | 39      | -1.06               | 010.60      | 0    |
| 010           | Total N (11%)    | 0035     | 11.25    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.78               | 010.60      | 0    |
| 010           | Total N (11%)    | 0527     | 11.26    | 0.0010 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.75               | 010.60      | 0    |
| 010           | Total N (11%)    | 0422     | 11.31    | 0.0000 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.52               | 010.60      | 0    |
| 010           | Total N (11%)    | 0452     | 11.35    | 0.0700 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.37               | 010.60      | 0    |
| 010           | Total N (11%)    | 0095     | 11.35    | 0.0200 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.35               | 010.60      | 0    |
| 010           | Total N (11%)    | 0494     | 11.35    | 0.3000 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.35               | 010.60      | 0    |
| 010           | Total N (11%)    | 0029     | 11.36    | 0.2900 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.33               | 010.60      | 0    |
| 010           | Total N (11%)    | 0291     | 11.38    | 0.0100 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.24               | 010.60      | 0    |
| 010           | Total N (11%)    | 0360     | 11.38    | 0.1100 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.24               | 010.60      | 0    |
| 010           | Total N (11%)    | 0542     | 11.38    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.22               | 010.60      | 0    |
| 010           | Total N (11%)    | 0177     | 11.42    | 0.0440 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.07               | 010.60      | 0    |
| 010           | Total N (11%)    | 0481     | 11.43    | 0.2600 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.00                | 010.60      | 0    |
| 010           | Total N (11%)    | 0389     | 11.44    | 0.0800 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.04                | 010.60      | 0    |
| 010           | Total N (11%)    | 0451     | 11.45    | 0.2600 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.08                | 010.60      | 0    |
| 010           | Total N (11%)    | 0572     | 11.51    | 0.0400 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.34                | 010.60      | 0    |
| 010           | Total N (11%)    | 0055     | 11.52    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.39                | 010.60      | 0    |
| 010           | Total N (11%)    | 0231     | 11.55    | 0.0400 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.52                | 010.60      | 0    |

| Analyte Group | Analyte (Units) | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-----------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                 |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 010           | Total N (11%)   | 0472     | 11.55    | 0.2200 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.52                | 010.60      | 0    |
| 010           | Total N (11%)   | 0220     | 11.56    | 0.0500 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.54                | 010.60      | 0    |
| 010           | Total N (11%)   | 0049     | 11.58    | 0.0100 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.62                | 010.60      | 0    |
| 010           | Total N (11%)   | 0547     | 11.58    | 0.1600 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.65                | 010.60      | 0    |
| 010           | Total N (11%)   | 0157     | 11.60    | 0.0000 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.73                | 010.60      | 0    |
| 010           | Total N (11%)   | 0481     | 11.62    | 0.1200 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.82                | 010.12      | 0    |
| 010           | Total N (11%)   | 0027     | 11.65    | 0.0700 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.93                | 010.60      | 0    |
| 010           | Total N (11%)   | 0169     | 11.65    | 0.0500 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.93                | 010.60      | 0    |
| 010           | Total N (11%)   | 0405     | 11.65    | 0.0300 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.93                | 010.60      | 0    |
| 010           | Total N (11%)   | 0040     | 11.65    | 0.1000 | 11.43                 | 0.2311 | 0.1012    | 39      | 0.95                | 010.60      | 0    |
| 010           | Total N (11%)   | 0572     | 11.68    | 0.3400 | 11.43                 | 0.2311 | 0.1012    | 39      | 1.08                | 010.12      | 0    |
| 010           | Total N (11%)   | 0136     | 11.75    | 0.3000 | 11.43                 | 0.2311 | 0.1012    | 39      | 1.38                | 010.60      | 0    |
| 010           | Total N (11%)   | 0034     | 11.78    | 0.0010 | 11.43                 | 0.2311 | 0.1012    | 39      | 1.53                | 010.60      | 0    |
| 010           | Total N (11%)   | 0255     | 12.26†   | 0.1120 | 11.43                 | 0.2311 | 0.1012    | 39      | 3.57                | 010.60      | 0    |
| 010           | Total N (11%)   | 0307     | 11.30    | 0.6000 | 11.43                 | 0.2311 | 0.1012    | 39      | -0.57               | 010.60      | 1    |
| 020           | Total P2O5 (%)  | 0389     | 46.95    | 0.5000 | 54.66                 | 1.709  | 0.4159    | 26      | -4.51               | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0572     | 51.19    | 0.9800 | 54.66                 | 1.709  | 0.4159    | 26      | -2.03               | 020.99      | 0    |
| 020           | Total P2O5 (%)  | 0433     | 51.73    | 0.3400 | 54.66                 | 1.709  | 0.4159    | 26      | -1.71               | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0042     | 52.53    | 1.050  | 54.66                 | 1.709  | 0.4159    | 26      | -1.25               | 020.40      | 0    |
| 020           | Total P2O5 (%)  | 0498     | 52.55    | 1.100  | 54.66                 | 1.709  | 0.4159    | 26      | -1.23               | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0422     | 52.60    | 0.5270 | 54.66                 | 1.709  | 0.4159    | 26      | -1.20               | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0515     | 53.45    | 1.030  | 54.66                 | 1.709  | 0.4159    | 26      | -0.71               | 020.99      | 0    |
| 020           | Total P2O5 (%)  | 0423     | 54.32    | 0.1900 | 54.66                 | 1.709  | 0.4159    | 26      | -0.20               | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0324     | 54.55    | 0.1000 | 54.66                 | 1.709  | 0.4159    | 26      | -0.06               | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0255     | 54.87    | 0.5040 | 54.66                 | 1.709  | 0.4159    | 26      | 0.12                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0405     | 55.01    | 0.0500 | 54.66                 | 1.709  | 0.4159    | 26      | 0.20                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0481     | 55.08    | 0.8600 | 54.66                 | 1.709  | 0.4159    | 26      | 0.25                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0472     | 55.08    | 0.2600 | 54.66                 | 1.709  | 0.4159    | 26      | 0.25                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0600     | 55.15    | 0.1000 | 54.66                 | 1.709  | 0.4159    | 26      | 0.29                | 020.99      | 0    |
| 020           | Total P2O5 (%)  | 0451     | 55.25    | 0.1900 | 54.66                 | 1.709  | 0.4159    | 26      | 0.35                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0035     | 55.25    | 0.3000 | 54.66                 | 1.709  | 0.4159    | 26      | 0.35                | 020.40      | 0    |
| 020           | Total P2O5 (%)  | 0527     | 55.29    | 0.2124 | 54.66                 | 1.709  | 0.4159    | 26      | 0.37                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0220     | 55.34    | 0.4400 | 54.66                 | 1.709  | 0.4159    | 26      | 0.40                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0231     | 55.36    | 0.0300 | 54.66                 | 1.709  | 0.4159    | 26      | 0.41                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0291     | 55.41    | 0.0100 | 54.66                 | 1.709  | 0.4159    | 26      | 0.44                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0169     | 55.43    | 0.0500 | 54.66                 | 1.709  | 0.4159    | 26      | 0.45                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0647     | 55.49    | 0.1200 | 54.66                 | 1.709  | 0.4159    | 26      | 0.49                | 020.99      | 0    |
| 020           | Total P2O5 (%)  | 0547     | 55.95    | 0.7000 | 54.66                 | 1.709  | 0.4159    | 26      | 0.76                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0234     | 56.73    | 0.0400 | 54.66                 | 1.709  | 0.4159    | 26      | 1.21                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0455     | 56.90    | 0.2000 | 54.66                 | 1.709  | 0.4159    | 26      | 1.31                | 020.20      | 0    |
| 020           | Total P2O5 (%)  | 0307     | 57.70    | 1.000  | 54.66                 | 1.709  | 0.4159    | 26      | 1.78                | 020.50      | 0    |
| 020           | Total P2O5 (%)  | 0542     | 63.48    | 2.247  | 54.66                 | 1.709  | 0.4159    | 26      | 5.16                | 020.50      | 1    |
| 020           | Total P2O5 (%)  | 0552     | 23.73    | 1.590  | 54.66                 | 1.709  | 0.4159    | 26      | -18.10              | 020.50      | 2    |

| Analyte Group | Analyte (Units)               | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                               |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 030           | Citrate Insoluble P2O5 (%)    | 0405     | 0.0950   | 0.0100 |                       |        |           | 1       |                     | 030.20      | 0    |
| 040           | Indirect Available P2O5 (55%) | 0572     | 51.08†   | 0.9500 | 53.70                 | 2.271  | 0.3967    | 3       | -1.15               | 040.99      | 0    |
| 040           | Indirect Available P2O5 (55%) | 0405     | 54.91‡   | 0.0400 | 53.70                 | 2.271  | 0.3967    | 3       | 0.54                | 040.99      | 0    |
| 040           | Indirect Available P2O5 (55%) | 0547     | 55.10‡   | 0.2000 | 53.70                 | 2.271  | 0.3967    | 3       | 0.62                | 040.50      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0095     | 51.73†   | 0.5800 | 54.62                 | 1.110  | 0.3425    | 23      | -2.60               | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0472     | 52.63†   | 0.7000 | 54.62                 | 1.110  | 0.3425    | 23      | -1.79               | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0177     | 52.87†   | 0.0571 | 54.62                 | 1.110  | 0.3425    | 23      | -1.58               | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0055     | 53.14†   | 0.4300 | 54.62                 | 1.110  | 0.3425    | 23      | -1.34               | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0521     | 53.68    | 0.0000 | 54.62                 | 1.110  | 0.3425    | 23      | -0.85               | 041.50      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0027     | 53.70    | 0.5700 | 54.62                 | 1.110  | 0.3425    | 23      | -0.83               | 041.20      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0049     | 53.92    | 0.3200 | 54.62                 | 1.110  | 0.3425    | 23      | -0.63               | 041.11      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0553     | 54.45    | 0.5100 | 54.62                 | 1.110  | 0.3425    | 23      | -0.16               | 041.20      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0055     | 54.55    | 1.050  | 54.62                 | 1.110  | 0.3425    | 23      | -0.07               | 041.11      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0354     | 54.75    | 0.1000 | 54.62                 | 1.110  | 0.3425    | 23      | 0.12                | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0600     | 54.80    | 0.2000 | 54.62                 | 1.110  | 0.3425    | 23      | 0.16                | 041.99      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0653     | 54.83    | 0.0100 | 54.62                 | 1.110  | 0.3425    | 23      | 0.19                | 041.99      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0231     | 54.90    | 0.0500 | 54.62                 | 1.110  | 0.3425    | 23      | 0.25                | 041.21      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0405     | 55.00    | 0.0100 | 54.62                 | 1.110  | 0.3425    | 23      | 0.34                | 041.11      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0040     | 55.15    | 0.3000 | 54.62                 | 1.110  | 0.3425    | 23      | 0.48                | 041.10      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0117     | 55.22    | 0.6800 | 54.62                 | 1.110  | 0.3425    | 23      | 0.54                | 041.51      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0177     | 55.31    | 0.0063 | 54.62                 | 1.110  | 0.3425    | 23      | 0.63                | 041.10      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0102     | 55.33    | 0.1500 | 54.62                 | 1.110  | 0.3425    | 23      | 0.64                | 041.10      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0136     | 55.50    | 0.6000 | 54.62                 | 1.110  | 0.3425    | 23      | 0.79                | 041.51      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0452     | 55.61    | 0.5600 | 54.62                 | 1.110  | 0.3425    | 23      | 0.89                | 041.20      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0220     | 55.81‡   | 0.0300 | 54.62                 | 1.110  | 0.3425    | 23      | 1.07                | 041.11      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0034     | 55.82‡   | 0.0621 | 54.62                 | 1.110  | 0.3425    | 23      | 1.09                | 041.40      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0029     | 55.94‡   | 0.7800 | 54.62                 | 1.110  | 0.3425    | 23      | 1.19                | 041.40      | 0    |
| 041           | Direct Available P2O5 (55%)   | 0360     | 32.18†   | 1.970  | 54.62                 | 1.110  | 0.3425    | 23      | -20.22              | 041.51      | 1    |
| 048           | Water Soluble P2O5 (%)        | 0572     | 47.46    | 0.0200 | 49.74                 | 1.980  | 0.1267    | 3       | -1.15               | 048.99      | 0    |
| 048           | Water Soluble P2O5 (%)        | 0220     | 50.73    | 0.3000 | 49.74                 | 1.980  | 0.1267    | 3       | 0.50                | 048.20      | 0    |
| 048           | Water Soluble P2O5 (%)        | 0472     | 51.03    | 0.0600 | 49.74                 | 1.980  | 0.1267    | 3       | 0.65                | 048.20      | 0    |
| 050           | Soluble K2O (%)               | 0572     | 0.2059   | 0.0012 | 0.2887                | 0.0708 | 0.0071    | 6       | -1.04               | 050.99      | 0    |
| 050           | Soluble K2O (%)               | 0354     | 0.2645   | 0.0030 | 0.2887                | 0.0708 | 0.0071    | 6       | -0.30               | 050.52      | 0    |
| 050           | Soluble K2O (%)               | 0422     | 0.2757   | 0.0063 | 0.2887                | 0.0708 | 0.0071    | 6       | -0.16               | 050.50      | 0    |
| 050           | Soluble K2O (%)               | 0472     | 0.2800   | 0.0800 | 0.2887                | 0.0708 | 0.0071    | 6       | -0.11               | 050.32      | 0    |
| 050           | Soluble K2O (%)               | 0527     | 0.3115   | 0.0057 | 0.2887                | 0.0708 | 0.0071    | 6       | 0.29                | 050.99      | 0    |
| 050           | Soluble K2O (%)               | 0307     | 0.5250   | 0.0100 | 0.2887                | 0.0708 | 0.0071    | 6       | 2.97                | 050.99      | 0    |
| 050           | Soluble K2O (%)               | 0552     | 2.245    | 0.7500 | 0.2887                | 0.0708 | 0.0071    | 6       | 24.61               | 050.99      | 1    |
| 050           | Soluble K2O (%)               | 0542     | < 0.0015 |        | 0.2887                | 0.0708 | 0.0071    | 6       |                     | 050.99      | 5    |
| 050           | Soluble K2O (%)               | 0034     | < 1      |        | 0.2887                | 0.0708 | 0.0071    | 6       |                     | 050.62      | 5    |
| 101           | Acid Soluble Ca (%)           | 0542     | 0.0286   | 0.0006 | 0.0969                | 0.1110 | 0.0042    | 6       | -0.55               | 101.99      | 0    |
| 101           | Acid Soluble Ca (%)           | 0572     | 0.0310   | 0.0002 | 0.0969                | 0.1110 | 0.0042    | 6       | -0.53               | 101.99      | 0    |
| 101           | Acid Soluble Ca (%)           | 0422     | 0.0320   | 0.0016 | 0.0969                | 0.1110 | 0.0042    | 6       | -0.52               | 101.30      | 0    |

| Analyte Group | Analyte (Units)       | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-----------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                       |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 101           | Acid Soluble Ca (%)   | 0472     | 0.0450   | 0.0100 | 0.0969                | 0.1110 | 0.0042    | 6       | -0.42               | 101.33      | 0    |
| 101           | Acid Soluble Ca (%)   | 0354     | 0.2050   | 0.0100 | 0.0969                | 0.1110 | 0.0042    | 6       | 0.87                | 101.30      | 0    |
| 101           | Acid Soluble Ca (%)   | 0035     | 0.2395   | 0.0030 | 0.0969                | 0.1110 | 0.0042    | 6       | 1.14                | 101.30      | 0    |
| 101           | Acid Soluble Ca (%)   | 0552     | 1.345    | 0.2100 | 0.0969                | 0.1110 | 0.0042    | 6       | 10.01               | 101.99      | 1    |
| 101           | Acid Soluble Ca (%)   | 0527     | < 0.01   |        | 0.0969                | 0.1110 | 0.0042    | 6       |                     | 101.33      | 5    |
| 121           | Acid Soluble Mg (%)   | 0542     | 0.5465   | 0.0128 | 0.7673                | 0.1187 | 0.0221    | 11      | -1.74               | 121.99      | 0    |
| 121           | Acid Soluble Mg (%)   | 0572     | 0.5901   | 0.0094 | 0.7673                | 0.1187 | 0.0221    | 11      | -1.40               | 121.99      | 0    |
| 121           | Acid Soluble Mg (%)   | 0422     | 0.7174   | 0.0013 | 0.7673                | 0.1187 | 0.0221    | 11      | -0.39               | 121.30      | 0    |
| 121           | Acid Soluble Mg (%)   | 0472     | 0.7700   | 0.0000 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.02                | 121.33      | 0    |
| 121           | Acid Soluble Mg (%)   | 0515     | 0.7727   | 0.0884 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.04                | 121.99      | 0    |
| 121           | Acid Soluble Mg (%)   | 0515     | 0.7780   | 0.0778 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.08                | 121.33      | 0    |
| 121           | Acid Soluble Mg (%)   | 0035     | 0.8025   | 0.0210 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.28                | 121.30      | 0    |
| 121           | Acid Soluble Mg (%)   | 0494     | 0.8100   | 0.0144 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.34                | 121.33      | 0    |
| 121           | Acid Soluble Mg (%)   | 0354     | 0.8150   | 0.0300 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.38                | 121.30      | 0    |
| 121           | Acid Soluble Mg (%)   | 0527     | 0.8497   | 0.0046 | 0.7673                | 0.1187 | 0.0221    | 11      | 0.65                | 121.33      | 0    |
| 121           | Acid Soluble Mg (%)   | 0552     | 1.180    | 0.0200 | 0.7673                | 0.1187 | 0.0221    | 11      | 3.25                | 121.99      | 0    |
| 148           | Total S (%)           | 0572     | 1.022    | 0.0095 | 1.384                 | 0.2605 | 0.0146    | 5       | -1.21               | 148.99      | 0    |
| 148           | Total S (%)           | 0542     | 1.256    | 0.0360 | 1.384                 | 0.2605 | 0.0146    | 5       | -0.43               | 148.99      | 0    |
| 148           | Total S (%)           | 0422     | 1.389    | 0.0030 | 1.384                 | 0.2605 | 0.0146    | 5       | 0.01                | 148.99      | 0    |
| 148           | Total S (%)           | 0472     | 1.575    | 0.0100 | 1.384                 | 0.2605 | 0.0146    | 5       | 0.64                | 148.07      | 0    |
| 148           | Total S (%)           | 0354     | 1.680    | 0.0000 | 1.384                 | 0.2605 | 0.0146    | 5       | 0.99                | 148.99      | 0    |
| 148           | Total S (%)           | 0515     | 1.883    | 0.1550 | 1.384                 | 0.2605 | 0.0146    | 5       | 1.67                | 148.07      | 1    |
| 148           | Total S (%)           | 0527     | < 0.1    |        | 1.384                 | 0.2605 | 0.0146    | 5       |                     | 148.07      | 5    |
| 151           | Acid Soluble As (ppm) | 0220     | 0.6500   | 0.1000 | 1.013                 | 0.3394 | 0.0967    | 7       | -0.97               | 151.32      | 0    |
| 151           | Acid Soluble As (ppm) | 0220     | 0.6500   | 0.1000 | 1.013                 | 0.3394 | 0.0967    | 7       | -0.97               | 151.99      | 0    |
| 151           | Acid Soluble As (ppm) | 0572     | 1.035    | 0.0700 | 1.013                 | 0.3394 | 0.0967    | 7       | 0.06                | 151.99      | 0    |
| 151           | Acid Soluble As (ppm) | 0136     | 1.050    | 0.1000 | 1.013                 | 0.3394 | 0.0967    | 7       | 0.10                | 151.33      | 0    |
| 151           | Acid Soluble As (ppm) | 0481     | 1.085    | 0.0500 | 1.013                 | 0.3394 | 0.0967    | 7       | 0.19                | 151.99      | 0    |
| 151           | Acid Soluble As (ppm) | 0498     | 1.100    | 0.0000 | 1.013                 | 0.3394 | 0.0967    | 7       | 0.23                | 151.00      | 0    |
| 151           | Acid Soluble As (ppm) | 0515     | 7.939    | 0.3000 | 1.013                 | 0.3394 | 0.0967    | 7       | 18.45               | 151.33      | 0    |
| 151           | Acid Soluble As (ppm) | 0515     | 2.030    | 0.6170 | 1.013                 | 0.3394 | 0.0967    | 7       | 2.71                | 151.34      | 1    |
| 151           | Acid Soluble As (ppm) | 0255     | 0.0000   | 0.0000 | 1.013                 | 0.3394 | 0.0967    | 7       |                     | 151.30      | 4    |
| 151           | Acid Soluble As (ppm) | 0527     | < 0.0001 |        | 1.013                 | 0.3394 | 0.0967    | 7       |                     | 151.33      | 5    |
| 151           | Acid Soluble As (ppm) | 0405     | < 3      |        | 1.013                 | 0.3394 | 0.0967    | 7       |                     | 151.32      | 5    |
| 165           | Acid Soluble B (%)    | 0542     | 0.0063   | 0.0001 | 0.0092                | 0.0017 | 0.0001    | 5       | -1.54               | 165.99      | 0    |
| 165           | Acid Soluble B (%)    | 0422     | 0.0094   | 0.0002 | 0.0092                | 0.0017 | 0.0001    | 5       | 0.13                | 165.30      | 0    |
| 165           | Acid Soluble B (%)    | 0354     | 0.0100   | 0.0000 | 0.0092                | 0.0017 | 0.0001    | 5       | 0.44                | 165.30      | 0    |
| 165           | Acid Soluble B (%)    | 0472     | 0.0100   | 0.0000 | 0.0092                | 0.0017 | 0.0001    | 5       | 0.44                | 165.99      | 0    |
| 165           | Acid Soluble B (%)    | 0527     | 0.0102   | 0.0001 | 0.0092                | 0.0017 | 0.0001    | 5       | 0.52                | 165.99      | 0    |
| 165           | Acid Soluble B (%)    | 0515     | 0.0077   | 0.0014 | 0.0092                | 0.0017 | 0.0001    | 5       | -0.77               | 165.99      | 1    |
| 165           | Acid Soluble B (%)    | 0552     | 0.0000   | 0.0000 | 0.0092                | 0.0017 | 0.0001    | 5       |                     | 165.99      | 4    |
| 181           | Acid Soluble Cd (ppm) | 0515     | 2.602    | 1.830  | 9.118                 | 0.9410 | 0.6083    | 12      | -6.92               | 181.34      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0481     | 7.790    | 0.2600 | 9.118                 | 0.9410 | 0.6083    | 12      | -1.41               | 181.99      | 0    |

| Analyte Group | Analyte (Units)       | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-----------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                       |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 181           | Acid Soluble Cd (ppm) | 0220     | 8.650    | 0.7000 | 9.118                 | 0.9410 | 0.6083    | 12      | -0.50               | 181.32      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0572     | 8.730    | 0.3600 | 9.118                 | 0.9410 | 0.6083    | 12      | -0.41               | 181.99      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0136     | 9.050    | 0.3000 | 9.118                 | 0.9410 | 0.6083    | 12      | -0.07               | 181.33      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0035     | 9.105    | 1.030  | 9.118                 | 0.9410 | 0.6083    | 12      | -0.01               | 181.30      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0220     | 9.150    | 0.3000 | 9.118                 | 0.9410 | 0.6083    | 12      | 0.03                | 181.99      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0494     | 9.425    | 0.4700 | 9.118                 | 0.9410 | 0.6083    | 12      | 0.33                | 181.33      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0102     | 9.500    | 0.4000 | 9.118                 | 0.9410 | 0.6083    | 12      | 0.41                | 181.33      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0527     | 9.778    | 0.0945 | 9.118                 | 0.9410 | 0.6083    | 12      | 0.70                | 181.33      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0405     | 10.00    | 0.0000 | 9.118                 | 0.9410 | 0.6083    | 12      | 0.94                | 181.32      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0515     | 12.73    | 1.910  | 9.118                 | 0.9410 | 0.6083    | 12      | 3.83                | 181.33      | 0    |
| 181           | Acid Soluble Cd (ppm) | 0255     | 11.89    | 5.120  | 9.118                 | 0.9410 | 0.6083    | 12      | 2.95                | 181.30      | 1    |
| 191           | Acid Soluble Cr (ppm) | 0498     | 57.75    | 2.100  | 215.8                 | 42.82  | 3.791     | 12      | -3.69               | 191.00      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0220     | 170.5    | 1.000  | 215.8                 | 42.82  | 3.791     | 12      | -1.06               | 191.32      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0220     | 172.0    | 2.000  | 215.8                 | 42.82  | 3.791     | 12      | -1.02               | 191.99      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0572     | 179.2    | 0.8800 | 215.8                 | 42.82  | 3.791     | 12      | -0.85               | 191.99      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0027     | 211.6    | 6.256  | 215.8                 | 42.82  | 3.791     | 12      | -0.10               | 191.30      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0035     | 220.0    | 6.000  | 215.8                 | 42.82  | 3.791     | 12      | 0.10                | 191.30      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0494     | 238.0    | 14.00  | 215.8                 | 42.82  | 3.791     | 12      | 0.52                | 191.33      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0515     | 241.2    | 4.000  | 215.8                 | 42.82  | 3.791     | 12      | 0.59                | 191.34      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0527     | 248.0    | 4.175  | 215.8                 | 42.82  | 3.791     | 12      | 0.75                | 191.33      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0405     | 250.0    | 2.000  | 215.8                 | 42.82  | 3.791     | 12      | 0.80                | 191.32      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0481     | 251.4    | 7.800  | 215.8                 | 42.82  | 3.791     | 12      | 0.83                | 191.99      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0136     | 255.8    | 0.8000 | 215.8                 | 42.82  | 3.791     | 12      | 0.93                | 191.33      | 0    |
| 191           | Acid Soluble Cr (ppm) | 0515     | 237.6    | 25.30  | 215.8                 | 42.82  | 3.791     | 12      | 0.51                | 191.33      | 1    |
| 202           | Acid Soluble Co (ppm) | 0542     | 0.9620   | 0.0200 | 15.38                 | 30.54  | 8.312     | 5       | -0.41               | 202.30      | 0    |
| 202           | Acid Soluble Co (ppm) | 0035     | 1.024    | 0.0720 | 15.38                 | 30.54  | 8.312     | 5       | -0.41               | 202.30      | 0    |
| 202           | Acid Soluble Co (ppm) | 0405     | 1.500    | 1.000  | 15.38                 | 30.54  | 8.312     | 5       | -0.40               | 202.32      | 0    |
| 202           | Acid Soluble Co (ppm) | 0515     | 3.448    | 0.4680 | 15.38                 | 30.54  | 8.312     | 5       | -0.34               | 202.33      | 0    |
| 202           | Acid Soluble Co (ppm) | 0255     | 69.98    | 40.00  | 15.38                 | 30.54  | 8.312     | 5       | 1.56                | 202.99      | 0    |
| 202           | Acid Soluble Co (ppm) | 0527     | < 0.0001 |        | 15.38                 | 30.54  | 8.312     | 5       |                     | 202.33      | 5    |
| 202           | Acid Soluble Co (ppm) | 0220     | < 0.1    |        | 15.38                 | 30.54  | 8.312     | 5       |                     | 202.32      | 5    |
| 202           | Acid Soluble Co (ppm) | 0220     | < 0.1    |        | 15.38                 | 30.54  | 8.312     | 5       |                     | 202.99      | 5    |
| 202           | Acid Soluble Co (ppm) | 0572     | < 0.68   |        | 15.38                 | 30.54  | 8.312     | 5       |                     | 202.99      | 5    |
| 202           | Acid Soluble Co (ppm) | 0136     | < 2.5    |        | 15.38                 | 30.54  | 8.312     | 5       |                     | 202.33      | 5    |
| 221           | Acid Soluble Cu (%)   | 0515     | 0.0004   | 0.0001 | 1.240                 | 2.310  | 0.0668    | 4       | -0.54               | 221.99      | 0    |
| 221           | Acid Soluble Cu (%)   | 0515     | 0.0007   | 0.0004 | 1.240                 | 2.310  | 0.0668    | 4       | -0.54               | 221.33      | 0    |
| 221           | Acid Soluble Cu (%)   | 0552     | 0.2600   | 0.0000 | 1.240                 | 2.310  | 0.0668    | 4       | -0.42               | 221.30      | 0    |
| 221           | Acid Soluble Cu (%)   | 0423     | 4.700    | 0.2000 | 1.240                 | 2.310  | 0.0668    | 4       | 1.50                | 221.32      | 0    |
| 221           | Acid Soluble Cu (%)   | 0255     | 0.0000   | 0.0000 | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.30      | 4    |
| 221           | Acid Soluble Cu (%)   | 0422     | 0.0000   | 0.0000 | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.30      | 4    |
| 221           | Acid Soluble Cu (%)   | 0527     | < 0.0001 |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.33      | 5    |
| 221           | Acid Soluble Cu (%)   | 0405     | < 0.0002 |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.32      | 5    |
| 221           | Acid Soluble Cu (%)   | 0136     | < 0.0002 |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.33      | 5    |

| Analyte Group | Analyte (Units)       | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-----------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                       |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 221           | Acid Soluble Cu (%)   | 0027     | < 0.001  |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.99      | 5    |
| 221           | Acid Soluble Cu (%)   | 0354     | < 0.01   |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.30      | 5    |
| 221           | Acid Soluble Cu (%)   | 0481     | < 0.01   |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.99      | 5    |
| 221           | Acid Soluble Cu (%)   | 0542     | < 0.015  |        | 1.240                 | 2.310  | 0.0668    | 4       |                     | 221.99      | 5    |
| 241           | Acid Soluble Fe (%)   | 0542     | 0.3642   | 0.0103 | 0.5129                | 0.0631 | 0.0243    | 11      | -2.21               | 241.99      | 0    |
| 241           | Acid Soluble Fe (%)   | 0515     | 0.4445   | 0.0539 | 0.5129                | 0.0631 | 0.0243    | 11      | -1.01               | 241.99      | 0    |
| 241           | Acid Soluble Fe (%)   | 0494     | 0.4798   | 0.0178 | 0.5129                | 0.0631 | 0.0243    | 11      | -0.49               | 241.33      | 0    |
| 241           | Acid Soluble Fe (%)   | 0035     | 0.4865   | 0.0270 | 0.5129                | 0.0631 | 0.0243    | 11      | -0.39               | 241.30      | 0    |
| 241           | Acid Soluble Fe (%)   | 0354     | 0.5000   | 0.0000 | 0.5129                | 0.0631 | 0.0243    | 11      | -0.19               | 241.30      | 0    |
| 241           | Acid Soluble Fe (%)   | 0515     | 0.5132   | 0.0832 | 0.5129                | 0.0631 | 0.0243    | 11      | 0.01                | 241.33      | 0    |
| 241           | Acid Soluble Fe (%)   | 0572     | 0.5250   | 0.0040 | 0.5129                | 0.0631 | 0.0243    | 11      | 0.18                | 241.99      | 0    |
| 241           | Acid Soluble Fe (%)   | 0527     | 0.5369   | 0.0143 | 0.5129                | 0.0631 | 0.0243    | 11      | 0.36                | 241.33      | 0    |
| 241           | Acid Soluble Fe (%)   | 0472     | 0.5500   | 0.0000 | 0.5129                | 0.0631 | 0.0243    | 11      | 0.55                | 241.33      | 0    |
| 241           | Acid Soluble Fe (%)   | 0422     | 0.5799   | 0.0159 | 0.5129                | 0.0631 | 0.0243    | 11      | 0.99                | 241.30      | 0    |
| 241           | Acid Soluble Fe (%)   | 0552     | 0.8400   | 0.0200 | 0.5129                | 0.0631 | 0.0243    | 11      | 4.85                | 241.30      | 0    |
| 251           | Acid Soluble Pb (ppm) | 0572     | 0.0900   | 0.0200 |                       |        |           | 1       |                     | 251.99      | 0    |
| 251           | Acid Soluble Pb (ppm) | 0255     | 0.0000   | 0.0000 |                       |        |           | 1       |                     | 251.30      | 4    |
| 251           | Acid Soluble Pb (ppm) | 0527     | < 0.0001 |        |                       |        |           | 1       |                     | 251.33      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0515     | < 0.21   |        |                       |        |           | 1       |                     | 251.33      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0515     | < 0.216  |        |                       |        |           | 1       |                     | 251.34      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0481     | < 0.5    |        |                       |        |           | 1       |                     | 251.99      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0220     | < 0.7    |        |                       |        |           | 1       |                     | 251.32      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0220     | < 0.7    |        |                       |        |           | 1       |                     | 251.99      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0136     | < 3      |        |                       |        |           | 1       |                     | 251.33      | 5    |
| 251           | Acid Soluble Pb (ppm) | 0405     | < 4      |        |                       |        |           | 1       |                     | 251.32      | 5    |
| 261           | Acid Soluble Mn (%)   | 0494     | 0.0080   | 0.0012 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.75               | 261.35      | 0    |
| 261           | Acid Soluble Mn (%)   | 0542     | 0.0084   | 0.0001 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.69               | 261.99      | 0    |
| 261           | Acid Soluble Mn (%)   | 0354     | 0.0100   | 0.0000 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.39               | 261.30      | 0    |
| 261           | Acid Soluble Mn (%)   | 0472     | 0.0100   | 0.0000 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.39               | 261.35      | 0    |
| 261           | Acid Soluble Mn (%)   | 0422     | 0.0106   | 0.0000 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.28               | 261.30      | 0    |
| 261           | Acid Soluble Mn (%)   | 0035     | 0.0110   | 0.0000 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.21               | 261.30      | 0    |
| 261           | Acid Soluble Mn (%)   | 0527     | 0.0118   | 0.0001 | 0.0121                | 0.0051 | 0.0053    | 9       | -0.07               | 261.35      | 0    |
| 261           | Acid Soluble Mn (%)   | 0515     | 0.0272   | 0.0152 | 0.0121                | 0.0051 | 0.0053    | 9       | 2.75                | 261.35      | 0    |
| 261           | Acid Soluble Mn (%)   | 0552     | 0.2250   | 0.0100 | 0.0121                | 0.0051 | 0.0053    | 9       | 38.89               | 261.32      | 0    |
| 281           | Acid Soluble Hg (ppm) | 0527     | < 0.001  |        |                       |        |           | 0       |                     | 281.30      | 5    |
| 281           | Acid Soluble Hg (ppm) | 0572     | < 0.009  |        |                       |        |           | 0       |                     | 281.99      | 5    |
| 281           | Acid Soluble Hg (ppm) | 0220     | < 0.01   |        |                       |        |           | 0       |                     | 281.99      | 5    |
| 281           | Acid Soluble Hg (ppm) | 0515     | < 0.1    |        |                       |        |           | 0       |                     | 281.30      | 5    |
| 281           | Acid Soluble Hg (ppm) | 0481     | < 0.5    |        |                       |        |           | 0       |                     | 281.00      | 5    |
| 281           | Acid Soluble Hg (ppm) | 0405     | < 2      |        |                       |        |           | 0       |                     | 281.30      | 5    |
| 289           | Acid Soluble Mo (ppm) | 0515     | 1.211    | 1.025  | 3.324                 | 1.506  | 0.6479    | 10      | -1.30               | 289.34      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0542     | 1.903    | 0.3080 | 3.324                 | 1.506  | 0.6479    | 10      | -0.88               | 289.30      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0220     | 2.500    | 0.0000 | 3.324                 | 1.506  | 0.6479    | 10      | -0.51               | 289.32      | 0    |

| Analyte Group | Analyte (Units)       | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|-----------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                       |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 289           | Acid Soluble Mo (ppm) | 0220     | 2.550    | 0.1000 | 3.324                 | 1.506  | 0.6479    | 10      | -0.48               | 289.99      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0035     | 3.275    | 0.6100 | 3.324                 | 1.506  | 0.6479    | 10      | -0.03               | 289.30      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0136     | 3.500    | 0.0000 | 3.324                 | 1.506  | 0.6479    | 10      | 0.11                | 289.33      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0527     | 3.921    | 0.1464 | 3.324                 | 1.506  | 0.6479    | 10      | 0.37                | 289.33      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0405     | 4.000    | 0.0000 | 3.324                 | 1.506  | 0.6479    | 10      | 0.42                | 289.32      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0255     | 4.795    | 1.505  | 3.324                 | 1.506  | 0.6479    | 10      | 0.91                | 289.30      | 0    |
| 289           | Acid Soluble Mo (ppm) | 0515     | 8.996    | 0.8410 | 3.324                 | 1.506  | 0.6479    | 10      | 3.50                | 289.33      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0515     | 2.584    | 2.394  | 7.247                 | 2.111  | 0.4789    | 11      | -2.21               | 291.34      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0220     | 5.600    | 0.0000 | 7.247                 | 2.111  | 0.4789    | 11      | -0.78               | 291.32      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0220     | 5.700    | 0.0000 | 7.247                 | 2.111  | 0.4789    | 11      | -0.73               | 291.99      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0542     | 5.784    | 0.1390 | 7.247                 | 2.111  | 0.4789    | 11      | -0.69               | 291.30      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0572     | 6.465    | 0.0700 | 7.247                 | 2.111  | 0.4789    | 11      | -0.37               | 291.99      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0102     | 7.250    | 0.1000 | 7.247                 | 2.111  | 0.4789    | 11      | 0.00                | 291.33      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0035     | 8.205    | 0.5700 | 7.247                 | 2.111  | 0.4789    | 11      | 0.45                | 291.30      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0527     | 8.497    | 0.5853 | 7.247                 | 2.111  | 0.4789    | 11      | 0.59                | 291.33      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0515     | 8.890    | 1.006  | 7.247                 | 2.111  | 0.4789    | 11      | 0.78                | 291.33      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0136     | 9.250    | 0.1000 | 7.247                 | 2.111  | 0.4789    | 11      | 0.95                | 291.33      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0405     | 10.00    | 0.0000 | 7.247                 | 2.111  | 0.4789    | 11      | 1.30                | 291.32      | 0    |
| 291           | Acid Soluble Ni (ppm) | 0255     | 141.6    | 117.7  | 7.247                 | 2.111  | 0.4789    | 11      | 63.66               | 291.99      | 1    |
| 301           | Acid Soluble Se (ppm) | 0515     | 1.471    | 1.132  |                       |        |           | 2       |                     | 301.34      | 0    |
| 301           | Acid Soluble Se (ppm) | 0515     | 10.26    | 1.716  |                       |        |           | 2       |                     | 301.33      | 0    |
| 301           | Acid Soluble Se (ppm) | 0255     | 0.0000   | 0.0000 |                       |        |           | 2       |                     | 301.99      | 4    |
| 301           | Acid Soluble Se (ppm) | 0527     | < 0.01   |        |                       |        |           | 2       |                     | 301.33      | 5    |
| 301           | Acid Soluble Se (ppm) | 0220     | < 0.3    |        |                       |        |           | 2       |                     | 301.32      | 5    |
| 301           | Acid Soluble Se (ppm) | 0220     | < 0.3    |        |                       |        |           | 2       |                     | 301.99      | 5    |
| 301           | Acid Soluble Se (ppm) | 0481     | < 0.5    |        |                       |        |           | 2       |                     | 301.99      | 5    |
| 301           | Acid Soluble Se (ppm) | 0572     | < 0.7    |        |                       |        |           | 2       |                     | 301.99      | 5    |
| 301           | Acid Soluble Se (ppm) | 0405     | < 10     |        |                       |        |           | 2       |                     | 301.32      | 5    |
| 311           | Sodium (%)            | 0542     | 0.2235   | 0.0055 | 0.3172                | 0.0609 | 0.0057    | 5       | -1.54               | 311.99      | 0    |
| 311           | Sodium (%)            | 0422     | 0.2961   | 0.0000 | 0.3172                | 0.0609 | 0.0057    | 5       | -0.35               | 311.32      | 0    |
| 311           | Sodium (%)            | 0035     | 0.3280   | 0.0040 | 0.3172                | 0.0609 | 0.0057    | 5       | 0.18                | 311.33      | 0    |
| 311           | Sodium (%)            | 0527     | 0.3634   | 0.0034 | 0.3172                | 0.0609 | 0.0057    | 5       | 0.76                | 311.33      | 0    |
| 311           | Sodium (%)            | 0354     | 0.3750   | 0.0100 | 0.3172                | 0.0609 | 0.0057    | 5       | 0.95                | 311.99      | 0    |
| 321           | Acid Soluble Zn (%)   | 0542     | 0.0336   | 0.0004 | 0.0479                | 0.0051 | 0.0029    | 19      | -2.81               | 321.99      | 0    |
| 321           | Acid Soluble Zn (%)   | 0572     | 0.0340   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | -2.73               | 321.99      | 0    |
| 321           | Acid Soluble Zn (%)   | 0422     | 0.0422   | 0.0003 | 0.0479                | 0.0051 | 0.0029    | 19      | -1.12               | 321.30      | 0    |
| 321           | Acid Soluble Zn (%)   | 0220     | 0.0455   | 0.0030 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.46               | 321.32      | 0    |
| 321           | Acid Soluble Zn (%)   | 0027     | 0.0455   | 0.0010 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.46               | 321.99      | 0    |
| 321           | Acid Soluble Zn (%)   | 0494     | 0.0456   | 0.0021 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.45               | 321.33      | 0    |
| 321           | Acid Soluble Zn (%)   | 0515     | 0.0458   | 0.0057 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.42               | 321.33      | 0    |
| 321           | Acid Soluble Zn (%)   | 0515     | 0.0458   | 0.0042 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.41               | 321.99      | 0    |
| 321           | Acid Soluble Zn (%)   | 0255     | 0.0460   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | -0.37               | 321.30      | 0    |
| 321           | Acid Soluble Zn (%)   | 0136     | 0.0485   | 0.0010 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.13                | 321.33      | 0    |

| Analyte Group | Analyte (Units)     | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Your Method | Flag |
|---------------|---------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|-------------|------|
|               |                     |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |             |      |
| 321           | Acid Soluble Zn (%) | 0481     | 0.0485   | 0.0010 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.13                | 321.99      | 0    |
| 321           | Acid Soluble Zn (%) | 0498     | 0.0500   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.42                | 321.03      | 0    |
| 321           | Acid Soluble Zn (%) | 0035     | 0.0500   | 0.0040 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.42                | 321.30      | 0    |
| 321           | Acid Soluble Zn (%) | 0354     | 0.0500   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.42                | 321.30      | 0    |
| 321           | Acid Soluble Zn (%) | 0095     | 0.0500   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.42                | 321.32      | 0    |
| 321           | Acid Soluble Zn (%) | 0472     | 0.0500   | 0.0000 | 0.0479                | 0.0051 | 0.0029    | 19      | 0.42                | 321.33      | 0    |
| 321           | Acid Soluble Zn (%) | 0527     | 0.0547   | 0.0011 | 0.0479                | 0.0051 | 0.0029    | 19      | 1.34                | 321.33      | 0    |
| 321           | Acid Soluble Zn (%) | 0405     | 0.0715   | 0.0396 | 0.0479                | 0.0051 | 0.0029    | 19      | 4.66                | 321.32      | 0    |
| 321           | Acid Soluble Zn (%) | 0552     | 1.645    | 0.1300 | 0.0479                | 0.0051 | 0.0029    | 19      | 314.55              | 321.30      | 0    |
| 321           | Acid Soluble Zn (%) | 0423     | 601.5    | 7.000  | 0.0479                | 0.0051 | 0.0029    | 19      | 118455.30           | 321.32      | 1    |

#### Interpreting Z Scores and Flags:

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

#### Notes:

\*Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Identical duplicates not included in calculation of Rob R-bar. Your offset values are higher (±) or lower (†) than the Robust Analyte value ± Investigational Allowance. Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.